

# Hills and Fleurieu Regional Pest Plant and Animal Strategy

2024-2029



# Creating the Hills and Fleurieu Regional Pest Plant and Animal Strategy

The Hills and Fleurieu Regional Pest Plant and Animal Strategy was a commitment made in the Hills and Fleurieu Landscape Plan 2021-2026.

To develop the strategy, the board invited regional partners to provide feedback on a preliminary discussion paper and hosted an integrated workshop to discuss issues and refine the process.

A reference group was then created to ensure the final strategy document would be useful to regional land managers and represent their views.

The draft strategy was open to stakeholders and the broader community to provide feedback through the 'YourSAy' portal in September and October 2023, which further informed the final strategy.

We are very grateful for the thoughtful and constructive feedback provided and hope those who contributed can see how their input has helped shape the strategy.

Document management	Version	Date
Strategy approved by the Hills and Fleurieu Landscape Board	1.0	28 February 2024
Strategy review		2029

*This strategy will be reviewed in 2029 or as needed to respond to changing management priorities.*

*The regional actions and lists of prioritised species in Section B may be updated more regularly to reflect changes in status.*

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# Introduction

The Hills and Fleurieu Regional Pest Plant and Animal Strategy (the Pest Strategy) provides guidance on how to prioritise pest plant and animal management in the Hills and Fleurieu region. It outlines a common understanding of the responsibilities, principles, and objectives that will provide a foundation for collaboration and action for the protection of our agricultural, environmental and cultural assets. The Pest Strategy is intended to provide high level guidance to all land managers and points to which species Landscapes Hills and Fleurieu intends to focus on and why.

## Structure of the Regional Pest Strategy

The strategy is presented in two parts:

- **Section A:** Lays the foundational understanding and approaches to managing pests that can be applied at all scales from regional to property level.
- **Section B:** Presents regional prioritisation of pest plants and animals based on the principles and management objectives. Acting on these priorities will, in many cases, require collaboration and partnership with stakeholders.

## Regional Pest Strategy Scope

The Strategy considers pests within the boundary of the Hills and Fleurieu landscape region. Primarily it focusses on exotic (non-native) pests that are declared under the *Landscape South Australia Act 2019*. It also includes:

- Bluebell Creeper (*Billardiera heterophylla*), a native of Western Australia that has been declared under the Act as a risk in South Australia.
- Three undeclared exotic plant species that have not yet been identified as a risk at a state level but have the potential to be highly invasive and highly impactful in the region.

Although over-abundant native species such as corellas and kangaroos can have significant impacts on townships, agriculture and/or ecosystems, they are beyond the scope of this strategy. Landscape Boards and DEW are collaborating with other stakeholders to manage over-abundant species through other strategies and programs.



A common understanding about pest control

# Section A

## A Regional Pest Plant and Animal Strategy for all

### Strategy Goal

To protect agriculture, the environment and public amenity from the adverse impacts of pest plants and pest animals.

### Strategy Outcomes

- Improved coordination and collaboration between stakeholders.
- Improved understanding about roles and responsibilities.
- Improved management of priority pest plants and animals.

## Setting the Scene

### Hills and Fleurieu Region

The Hills and Fleurieu region is a national biodiversity hotspot and supports world-class agricultural industries. Its mosaic of urban, peri-urban and rural properties, and diversity of landscapes and land uses means there are many avenues for pest plants and animals to enter, become established and cause major impacts. Pest plants and animals cost the Hills and Fleurieu community millions of dollars each year through production losses, environmental impacts, social impacts, infrastructure damage and management activities.

### Climate change

South Australia's climate is changing. Increases in average temperatures, a greater frequency of total fire ban days, changes in rainfall patterns and more extreme weather are already being observed. Climate projections indicate a continuation of these changes in the medium term.

With a changing climate it is clear that the suite of priority pests is likely to change - some will become more invasive, others may contract in their range, and new pests will emerge. Some of the greatest risks and challenges are likely to come from the movement of invasive species from neighbouring regions (movement is expected southwards across Australia) and some pest plants and animals already in the region will be advantaged by the changing climate.

Gardens increasingly present new risks with escapees continuing to spread beyond the garden boundary and climate change creating favourable conditions for a new suite of pest plants.

This strategy will need to be reviewed regularly to ensure it considers the changing risk profile of pests over time, particularly as more information on responses to climate change are understood.

# Disaster management – fire, flood, drought, disease

Preparedness, response and recovery from extreme events and disasters are key considerations for all communities and individuals. In the Hills and Fleurieu region, fire, flood, drought and animal disease incursions present both risks and opportunities for pest management.

## Preparedness focuses on:

- Increasing the resilience and capacity of communities to prepare for extreme events and disasters
- Undertaking activities to reduce the exposure to risks and expected impacts from climate-driven disasters.

## Disaster recovery and response activities focus on:

- Supporting land managers to deal with the impacts and flow-on effects from extreme events and disasters
- Encouraging land managers and communities to

identify and act on pest management opportunities that may arise as a result of extreme events and disasters.

Pro-active management of woody weeds like gorse and wild olives can reduce fuel loads and impact on the intensity of fires along roadsides. Supporting land managers to take advantage of improved access, cleared weeds and mass germinating seed can help empower people after a fire, providing long term human and landscape benefits.

The control of cactus along creeks can reduce opportunities for spread during flooding events. The pro-active management of feral deer and goats can reduce transmission opportunities when animal diseases enter the country.



# National, state, regional and local plans and strategies

The Hills and Fleurieu Regional Pest Plant and Animal Strategy links to and aligns with strategies at all levels.

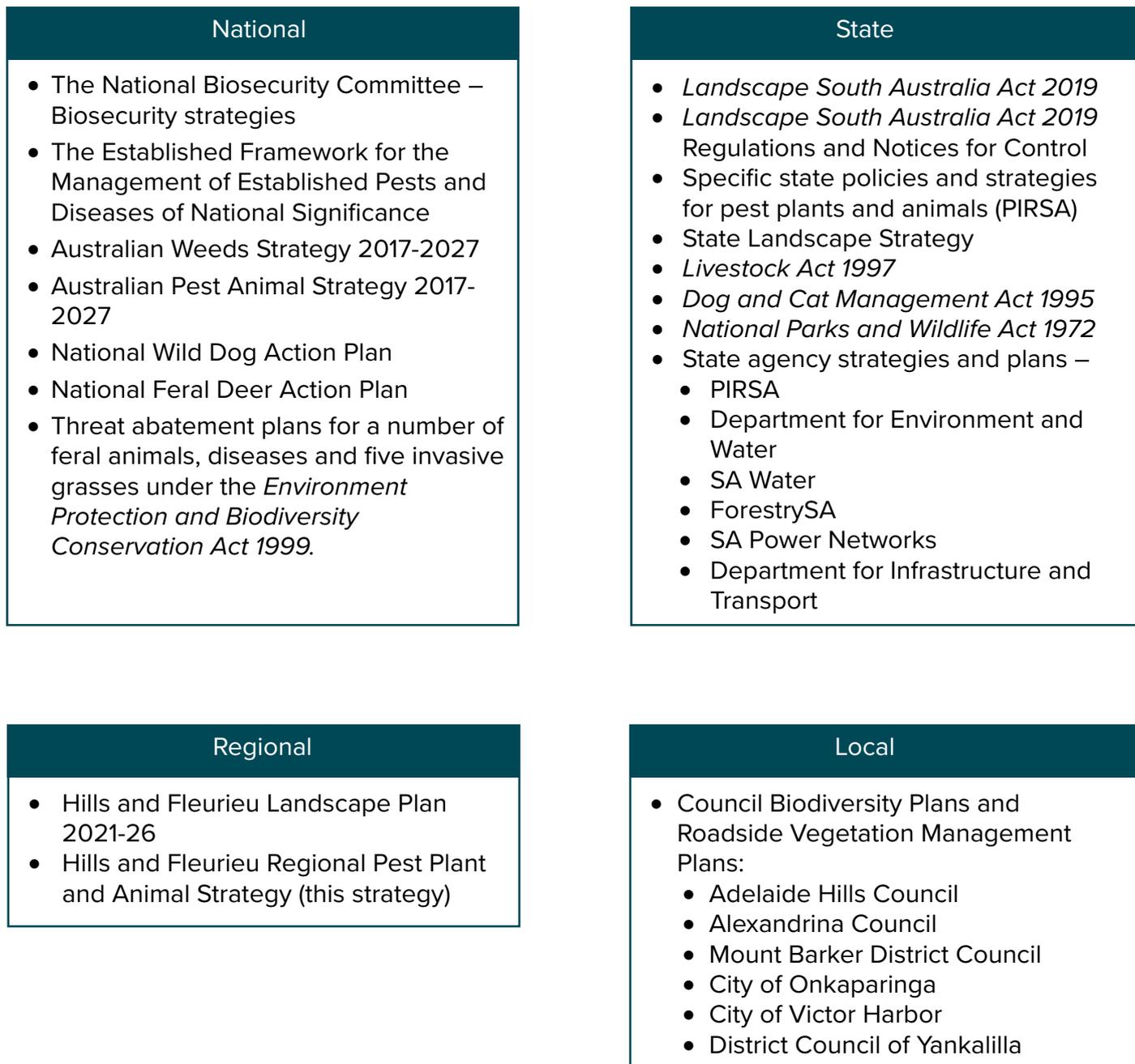


Diagram 1. National, state, regional and local legislation, plans and strategies with a focus on pest plants or animals.

## Notes:

1. Plans continue to be developed for specific species of pests and to protect specific species, habitats and agricultural sectors.
2. The South Australian Government is currently developing a draft Biosecurity Act

# Roles and Responsibilities

<p><b>Landholders and Public Land Managers</b></p>	<p>The <i>Landscape South Australia Act 2019</i> (the Act) makes it clear that land owners are responsible for the management of declared pest plants and animals on their land. These rules also apply to public land where the delegated authority is responsible for managing declared plants and animals on that land, including land managed by Councils (excluding roadsides), ForestrySA, SA Water, DEW - Crown Lands and Parks.</p>
<p><b>Landscape Board</b></p>	<p>Under the Act, the landscape boards are responsible for the management of declared pest plants and animals on roadsides. The Act allows the boards to recoup the cost of this management from adjacent landholders. Councils and the Department for Infrastructure and Transport also undertake activities on roadsides, including weed management.</p> <p>The Act directs landscape boards to educate and raise awareness before taking a formal compliance and enforcement approach. As key administrators of the Act, this places landscape boards in a lead role for building awareness and capacity of landholders, and in seeking voluntary compliance. By working with key stakeholders and partners, landscape boards can expand their reach and the learning opportunities that can be offered.</p> <p>Landscape boards have a lead role in compliance and enforcement. The Act guides that any enforcement action should be proportional to the risk involved and feasibility of managing that risk.</p> <p>Landscape boards play a role in coordinating region-wide programs and in supporting sub-regional programs. Landscape boards seek additional funding for pest plant and animals control to directly deliver work and to support landholders in fulfilling their land management responsibilities.</p>
<p><b>PIRSA and DEW</b></p>	<p>PIRSA maintains the list of declared plants and animals and develops policies where required. PIRSA conducts biosecurity activities across the state, and links to national biosecurity activities and policies. PIRSA plays a key role in management of aquatic /marine pests.</p> <p>DEW supports the administration of the Act through training Authorised Officers, and providing compliance and investigation support to progress enforcement activities where a breach of the Act has occurred.</p> <p>DEW and PIRSA seek additional funding to mitigate and manage threats from pest plants and animals on biodiversity and agriculture.</p>
<p><b>Industry and community</b></p>	<p>Everyone has a role to play in surveillance for new incursions of pests and good biosecurity practices ensuring we do not spread weeds and pest animals through our activities.</p>

## What is a “declared” species?

A range of pest plants and animals have been “declared” under the *Landscape South Australia Act 2019*. Declaration can restrict or prohibit the keeping, movement and sale of certain species, requires notification to the relevant landscape board once detected, and can specify the level of management from complete destruction to a level of control.

There is flexibility in how the sections are applied to different species. Some species may be declared for all the relevant sections in the Act and others may only be declared for one or two sections.

The full list of declared species can be found on the PIRSA website.



Blackberry

# Guiding Principles

Five guiding principles for the management of pests were developed in consultation with key stakeholders and refined during community consultation.



## 1. Understanding roles and responsibilities is foundational

Pests pose a risk to the whole region. Land managers and stakeholders all have responsibilities for managing pest plants and animals. If we understand our roles and responsibilities, we can be efficient and effective individually, we can complement the work of others and we can support shared long term landscape scale outcomes.



## 2. Land manager capacity is fundamental to our success

Impacts from pests will continue to increase without the pro-active involvement of land managers. This principle has two parts: one is understanding the knowledge gaps and the second is information availability. Being able to identify a pest, understand which control options to apply in the context the pest is found and bringing all that information into a management plan is important. Understanding learning requirements and resource needs, and making resources and learning opportunities accessible, is fundamental to effectively supporting land managers.



## 3. Coordinated effort provides the best long-term outcomes

Pest plants and animals don't stop at property or jurisdictional boundaries. Effective pest management requires action to be taken at the property, landscape and regional level. The most effective management involves cooperation and coordination of effort from private land managers, industry, state, regional and local government agencies, and community. Neighbours working together and planning control activities as part of a shared response is the best way to achieve sustainable long-term outcomes with limited resources. Coordination must also recognise the need for follow up works to avoid poor long-term outcomes.



## 4. Integrated land management saves future effort

Managing pest plants and animals is one facet of land management. It's important that we manage pests alongside managing soil, water and nature. For example, we save money and future weed management work if we renovate pasture or revegetate once an area is cleared of weeds. Another important part of integrated land management is to consider all the control options, for example combining baiting for rabbits with removing shelter and destroying warrens so they can't be re-occupied by other rabbits, is an integrated approach to rabbit management.

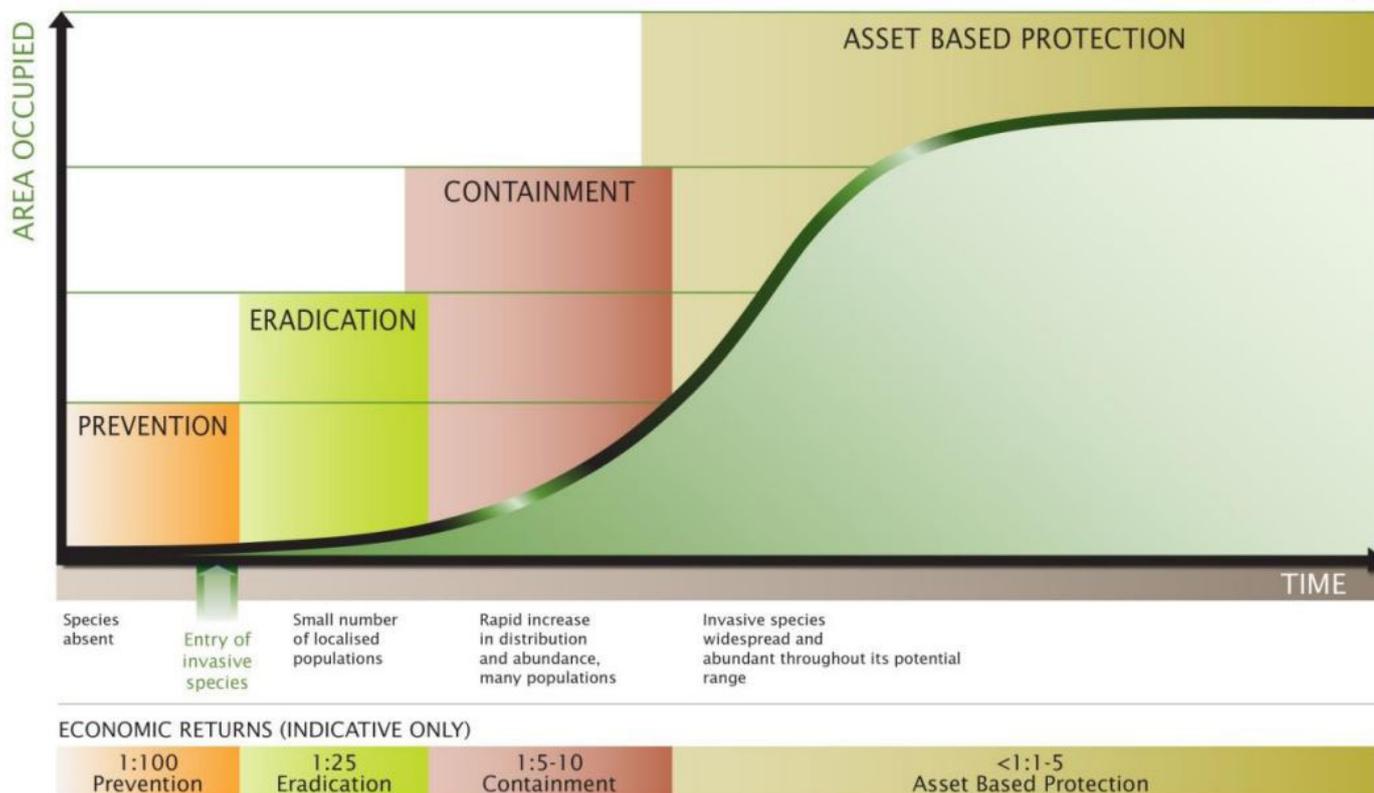


## 5. Strategic pest management requires prioritisation

Many of South Australia's 200+ declared plants and animals can be found in the Hills and Fleurieu region. Managing the risks and impacts of these species with limited resources requires careful prioritisation with tailored management strategies. The categorising of pests by priority allows for strategic investment and applying of the appropriate tools. To achieve this categorisation, individual pests are considered in terms of where they sit on the Invasion Curve and their relative risk and feasibility of containment.

# The Invasion Curve

Version 2.0: 24 JUL 2013



Above: Generalised invasion Curve. Source: Biosecurity Victoria

The Invasion Curve demonstrates that the more time a species has to invade, the greater area it is likely to occupy, and the more established and entrenched it becomes. Over time it becomes less effective and more expensive to try to eradicate an invading species and different management approaches, such as asset protection, become more realistic and cost effective. This cost benefit approach underpins the management objectives of this strategy.

## The Risk Assessment Matrix

		Feasibility of Containment				
		Negligible	Low	Medium	High	Very High
Relative Pest Risk	Negligible	Limited Action	Limited Action	Limited Action	Limited Action	Limited Action
	Low	Limited Action	Limited Action	Limited Action	Limited Action	Limited Action
	Medium	Asset Protection	Asset Protection	Asset Protection	Asset Protection	Containment
	High	Asset Protection	Asset Protection	Asset Protection	Containment	Containment
	Very High	Asset Protection	Asset Protection	Containment	Eradication	Eradication

The Risk Assessment Matrix process is used to allocate management objectives to pest species using a consistent methodology. The Relative Pest Risk includes criteria associated with invasiveness, impacts and potential distribution. The Feasibility of Containment includes criteria associated with control costs, current distribution and persistence. This risk assessment aligns with the Invasion Curve.

# Putting it all together – management objectives and management actions

There are five key objectives that guide pest management, and key management actions are identified for each objective. The management actions available to land managers are not limited to those identified below. Within each management action and even beyond these actions, there is opportunity for innovation and evolution as new approaches, techniques and technologies become available.

Management objective	Descriptor	Management actions
<p>1. <b>Prevention</b> Support activities to <b>prevent the entry</b> and establishment of pest plants and animals</p>	<p>Aim to stop the introduction or release (intentional and accidental) of declared species. Requires land managers abide by state and national regulation and policy, including sale restrictions.</p>	<p>Implement actions to prevent arrival and establishment of pests by:</p> <ul style="list-style-type: none"> <li>• Increasing public awareness of specific pest species</li> <li>• Increasing landholder awareness of responsibilities</li> <li>• Increasing plant and animal vendor awareness of prohibition of sale regulations</li> <li>• Undertaking surveillance activities</li> <li>• Eradicating species if detected</li> <li>• Informing neighbours and other relevant stakeholders of incursion</li> <li>• Participating in programs and inquiries at the relevant scale from local through to national</li> </ul>
<p>2. <b>Eradication</b> Focus on management of new and emerging pest plants and animals with the aim of <b>eradication</b></p>	<p>Reduce the long term costs of control and long term impacts on biodiversity, agriculture and amenity from pest plants and animals. This is scalable and means at the property level land managers are to control any locally identified new and emerging pest plants and animals, and agencies focus eradication efforts on regionally identified new and emerging pest plants and animals.</p>	<p>Remove the pests and prevent re-establishment by:</p> <ul style="list-style-type: none"> <li>• Mapping pests in detail</li> <li>• Developing eradication plans</li> <li>• Improving awareness of pests and capacity to identify and destroy</li> <li>• Undertaking direct on ground action to destroy all pests</li> <li>• Informing neighbours and other relevant stakeholders of infestation</li> <li>• Enforcing destruction if required (Landscape Board)</li> <li>• On-going surveillance and reporting to prevent re-establishment</li> <li>• Participating in programs and inquiries at the relevant scale from local through to national</li> </ul>

Management objective	Descriptor	Management actions
<p>3. <b>Containment</b> Work together to <b>contain</b> pest plants and animals to limit their spread and impact outside containment areas</p>	<p>Stakeholders work together in coordinated ways to control satellite populations and contain the main infestation.</p>	<p>Prevent spread and expansion of pests into new areas by:</p> <ul style="list-style-type: none"> <li>• Increasing landholder awareness of responsibilities, including prohibition of movement and sale regulations</li> <li>• Improving awareness and capacity to identify pests and apply integrated control</li> <li>• Mapping population boundaries and any outlier populations</li> <li>• Creating management plans for key species</li> <li>• Eradicating satellite/outlier populations</li> <li>• Reducing the size of the overall area occupied</li> <li>• Reducing density of population</li> <li>• Coordinating and working with neighbours and key stakeholders</li> <li>• Strategically enforcing control activities (Landscape Board)</li> <li>• Monitoring to detect change in pest population area and density</li> </ul>
<p>4. <b>Asset Protection</b> Use an <b>asset protection</b> approach to limit the spread and impact of pest plants and animals</p>	<p>Well-established pest plants and animals that are beyond eradication or containment are managed to protect environmental, agricultural and other identified assets at the regional or local scale.</p>	<p>Reduce or eliminate the impact of wide spread pest plants and animals on significant assets by:</p> <ul style="list-style-type: none"> <li>• Increasing landholder awareness of responsibilities</li> <li>• Improving awareness of risks and capacity to identify and control pests</li> <li>• Managing risk by controlling relevant pests</li> <li>• Coordinating and working with neighbours and key stakeholders</li> <li>• Strategically enforcing activities to support protection efforts (Landscape Board)</li> <li>• Monitoring assets to detect change in risk</li> </ul>
<p>5. <b>Monitor/Limited action</b> <b>Monitor</b> to detect change in risk. <b>Limited action</b> focused on advice and awareness raising</p>	<p>Monitor specific species or sites to assess changes in risks posed in response to climate change and other factors.</p>	<p>Monitor and assess the changes in risks posed by specific pests or to specific assets by:</p> <ul style="list-style-type: none"> <li>• Increasing landholder awareness of responsibilities</li> <li>• Providing education and capacity building opportunities in response to community or stakeholder demand</li> <li>• Increasing plant and animals vendors awareness of prohibition of sale regulations</li> <li>• General monitoring</li> </ul>

# Good Neighbour Approach

The principles and management objectives in this strategy can be applied to help prioritise effort at all scales including at the property scale.

Classical pest management encourages land managers to work from the best quality and least impacted land to towards the most impacted land. We also encourage land managers to focus on the highest risk pests first.

While the classical and risk approaches to pest management are very sound, we also advocate for land managers to consider their neighbours.

Pests don't respond to boundaries and fences so managing land should also take into account your neighbours, the broader community and the broader landscape.

Pests can create tensions between neighbours who may have different priorities. We encourage people to speak with their neighbours to work out how you can work together to manage the pests for a positive long term outcome.



Neighbours working together

# Key regional activities

To support the goal and three outcomes of the strategy, a list of key regional activities has been developed. The regional pest strategy is a strategy for all stakeholders and land managers. The regional activities and measures of success are aspirational and designed to provide guidance and direction.

Regional outcomes	Responsibility	Regional activities
<i>1. Improved coordination and collaboration between stakeholders</i>		
1.1 Implement established pest animal programs	PIRSA (lead), Hills and Fleurieu Landscape Board (lead), Councils, SA Water, ForestrySA, DEW, all land managers	Support public and private land managers to undertake fox and rabbit control, including to manage threats to high priority natural assets  Collaborate and coordinate regional programs with partners.  Attract funding to support and extend activities.
1.2 Implement established pest plant programs	PIRSA (lead), Hills and Fleurieu Landscape Board (lead), Councils, SA Water, ForestrySA, DEW, al land managers	Map the regional population boundaries and outlier populations of established pest plants, with a containment management objective. Land managers actively manage established pest plant outliers and boundary zones.  Manage established pest plants to reduce threats to high priority natural assets.  Collaborate and coordinate regional programs with partners.  Attract funding to support and extend activities.
1.3 Collaborate to target priority weeds on roadsides	Hills and Fleurieu Landscape Board (lead), Councils, DIT, SA Power Networks	Establish and maintain a stakeholder forum to investigate and collaborate on the management of roadside pest plants with a focus on improving detection and removal of new and emerging weeds, improving resilience of existing biodiversity assets, and pro-actively supporting disaster resilience.  Attract funding to support collaboration and delivery of activities.
1.4 Investigate opportunities to improve data collection and streamline data sharing	Hills and Fleurieu Landscape Board (lead), DIT, SA Water, DEW, ForestrySA, Councils	Investigate methods to share existing pest plant and animal data between stakeholders.  Promote the use of Feralscan for pest animals and WeedsScan for pest plants for the collection of citizen science data.

Regional outcomes	Responsibility	Regional activities
<b>1. Improved coordination and collaboration between stakeholders</b>		
1.5 Advocate for declaration of new high risk species	Hills and Fleurieu Landscape Board (lead), PIRSA, DEW	Identify high risk species that could benefit from declaration, i.e. where there is benefit from landholders undertaking responsible management and the landscape board undertaking compliance activities.
1.6 Support initiatives that strengthen relationships and support broader collaborations between regional, state and commonwealth agencies	PIRSA, DEW, Hills and Fleurieu Landscape Board, Councils, ForestrySA, SA Water, DIT, SA Power Networks	Engage agencies and other key stakeholders to support, collaborate, and develop projects.
<b>2. Improved understanding of roles and responsibilities</b>		
2.1 Communicate to increase landholder awareness and capacity in managing priority species	Hills and Fleurieu Landscape Board (lead), Councils, SA Water, ForestrySA, Environment Centres	Develop and promote a range of resources such as factsheets, videos, and workshops to improve capacity of landholders to identify and manage pest plants and animals.  Expand the reach of messages about landholder responsibilities including working with councils, to include messaging in 'New Residents' packs.
2.2 Communicate with landholders about the Regional Pest Strategy	Hills and Fleurieu Landscape Board (lead).	Increase awareness of the Regional Pest Strategy.  Regularly report back to the community on implementation of the Regional Pest Strategy.
2.3 Promote stories of compliance	Hills and Fleurieu Landscape Board (lead)	Pro-actively and sensitively promote stories of compliance to deter poor and irresponsible land management.
2.4 Implement compliance campaigns and discrete actions for priority species	Hills and Fleurieu Landscape Board (lead), DEW, PIRSA	Implement compliance campaigns, within resource constraints, for priority species.
<b>3. Improved management of priority pest species</b>		
3.1 Actively manage and monitor regional eradication targets	Hills and Fleurieu Landscape Board (lead), PIRSA, Councils, SA Water, ForestrySA, DEW, DIT	Eradicate feral goats and feral deer following well-developed plans.  Eradicate Buffel grass, Flax-leaf broom, Golden Dodder, Innocent weed, Khaki weed, Mexican feathergrass, Parrot Feather, Sagittaria and Spanish broom following well-developed plans  Attract funding to increase and intensify eradication efforts across all land tenures.

Regional outcomes	Responsibility	Regional activities
3.2 Actively support sub-regional pest eradication target	Hills and Fleurieu Landscape board , Councils, SA Water, ForestrySA, DEW	Inform and engage land managers on sub-regional eradication targets and actively collaborate and contribute to eradication programs.
3.3 Develop regional management strategies for individual key species	Hills and Fleurieu Landscape board (lead), PIRSA, Councils, SA Water, ForestrySA, DEW	Develop management strategies and implementation plans for key target species to guide regional action. Engage key stakeholders in the development and implementation of these strategies.
3.4 Improve the spatial understanding of key regionally identified pest species	DEW, PIRSA, Hills and Fleurieu Landscape board, councils, community groups and eNGOs	Develop and implement projects, including citizen science projects, using current or new platforms and technologies to improve the spatial understanding of key pest species.
3.5 Support innovations in pest management	PIRSA, DEW, Hills and Fleurieu Landscape board, Councils, SA Water, ForestrySA, DEW	Explore and implement new detection, mapping and control technologies, and community engagement approaches that improve the efficiency and effectiveness of pest management.



Gorse invading creekline - Photo: Monica Seiler

## Section B

# Regional pest priorities for the Hills and Fleurieu

## Hills and Fleurieu management objectives by species

The regional pest priorities set out here provide guidance for the management of pest plants and animals across the region. The priority species are identified and management objectives allocated based on a risk assessment approach. Activities all contribute to the strategic outcomes of: improved coordination and collaboration; improved understanding of roles and responsibilities; and improved management of priority pests.

These objectives and activities will guide efforts when seeking external funding.

Management Objective	Pest plants	Pest animals	Management actions
<b>Prevention</b>	<ul style="list-style-type: none"> <li>• Cane needlegrass</li> <li>• Elodea</li> <li>• Eurasian water milfoil</li> <li>• Giant arrowhead</li> <li>• Horsetails</li> <li>• Leafy elodea</li> <li>• Mimosa</li> <li>• Parthenium weed</li> <li>• Salvinia</li> <li>• Serrated tussock</li> <li>• Water hyacinth</li> </ul>	<ul style="list-style-type: none"> <li>• Feral pigs</li> <li>• Feral chital deer</li> <li>• Feral sika deer</li> <li>• Feral hog deer</li> <li>• Feral sambar deer</li> <li>• Red eared slider</li> </ul>	<p>Implement actions to prevent arrival and establishment by:</p> <ul style="list-style-type: none"> <li>• Increasing public awareness of specific pest species to encourage community detection</li> <li>• Increasing landholder awareness of responsibilities</li> <li>• Increasing plant and animals vendor awareness of prohibition of sale regulations, with a specific focus on plant nursery engagement and pet stores</li> <li>• Rapidly responding to eradicate if detected</li> <li>• Participating in local government, state and national programs and inquiries</li> </ul>
<b>Eradication</b>	<ul style="list-style-type: none"> <li>• Buffel grass</li> <li>• Flax-leaf broom</li> <li>• Golden Dodder</li> <li>• Innocent weed</li> <li>• Khaki weed</li> <li>• Mexican feathergrass</li> <li>• Parrot Feather</li> <li>• Sagittaria</li> <li>• Spanish broom*</li> </ul>	<ul style="list-style-type: none"> <li>• Feral goats</li> <li>• Feral fallow deer</li> <li>• Feral red deer</li> </ul>	<p>Remove the species and prevent re-establishment by:</p> <ul style="list-style-type: none"> <li>• Detailed mapping of known sites</li> <li>• Improving landholder awareness and capacity to identify and destroy</li> <li>• Preventing sale and movement through: <ul style="list-style-type: none"> <li>○ Nursery engagement</li> <li>○ Pet store engagement (particularly for aquatic plants)</li> </ul> </li> <li>• Sustaining direct on ground action to eradicate</li> <li>• On-going monitoring of controlled sites for a number of years</li> <li>• Strategically enforcing compliance</li> </ul>

Management Objective	Pest plants	Pest animals	Management actions
<b>Containment</b>	<ul style="list-style-type: none"> <li>• African feathergrass</li> <li>• African lovegrass</li> <li>• Asparagus fern</li> <li>• Berry heath (<i>Erica baccans</i>)</li> <li>• Bluebell creeper</li> <li>• Bridal creeper – Western Cape form</li> <li>• Chilean needlegrass</li> <li>• Coolatai grass</li> <li>• Dolichos pea</li> <li>• Fountain grass</li> <li>• Madeira vine</li> <li>• Spiny rush</li> <li>• Two-leaf Cape tulip</li> <li>• Texas needlegrass</li> <li>• Water dropwort</li> <li>• White weeping broom</li> </ul>		<p>Prevent spread and expansion into new areas by:</p> <ul style="list-style-type: none"> <li>• Increasing landholder awareness of: <ul style="list-style-type: none"> <li>○ Declared pest management responsibilities</li> <li>○ Any prohibition on movement and sale</li> <li>○ Resources available to identify pests</li> <li>○ Tools available to apply integrated control</li> </ul> </li> <li>• Eradicating satellite/outlier populations on of key species</li> <li>• Where funding is available, reducing the area occupied and density of population through management</li> <li>• Coordinating and working with other local, regional, State and Commonwealth programs</li> <li>• Mapping to understanding of the population boundary and any outlier populations if possible</li> <li>• Supporting biological control programs</li> <li>• Strategically enforcing compliance</li> <li>• Strategically implementing roadside cost recovery</li> </ul>
<b>Asset Protection</b>	<ul style="list-style-type: none"> <li>• African boxthorn</li> <li>• Aleppo pine</li> <li>• Asparagus weeds (bridal creeper, bridal veil, others)</li> <li>• Boneseed</li> <li>• Box elder</li> <li>• Bulbil watsonia</li> <li>• Cactus species – (<i>Austrocylindropuntia</i> and <i>cylindropuntia</i> species)</li> <li>• Caltrop</li> <li>• Cape broom</li> <li>• Coastal tea-tree</li> <li>• Dog rose</li> <li>• Desert Ash</li> <li>• English broom</li> <li>• European Blackberry</li> <li>• Gazania</li> <li>• Giant reed</li> <li>• Gorse</li> </ul>	<ul style="list-style-type: none"> <li>• Feral rabbits</li> <li>• Foxes</li> <li>• Unowned cats</li> </ul>	<p>Reduce or eliminate the impact of wide spread pest plants and animals on significant environmental, agricultural and social assets by:</p> <ul style="list-style-type: none"> <li>• Increasing landholder awareness of: <ul style="list-style-type: none"> <li>○ Declared pest management responsibilities</li> <li>○ Assets to be protected</li> <li>○ Resources available to identify pest risk</li> <li>○ Tools available to control and manage</li> </ul> </li> <li>• Where funding is available, managing risk by controlling relevant pest plants and animals</li> <li>• Working collaboratively with other stakeholders within the region</li> <li>• Supporting biological control programs</li> <li>• Strategically enforcing compliance to support protection efforts</li> <li>• Strategically implementing roadside cost recovery</li> </ul>

Management Objective	Pest plants	Pest animals	Management actions
<b>Asset Protection (cont.)</b>	<ul style="list-style-type: none"> <li>• Italian buckthorn</li> <li>• Mirror bush</li> <li>• Murrumbidgee*</li> <li>• One-leaf Cape tulip</li> <li>• Polygala</li> <li>• Star of Bethlehem*</li> <li>• Seeding Pampas grasses</li> <li>• Silverleaf Nightshade</li> <li>• Sweet Pittosporum</li> <li>• Tree heath (Erica arborea)</li> <li>• Wilding olives</li> <li>• Willows – Black, crack, goat and hybrids</li> </ul>	As above	As above
<b>Limited Action/ Monitoring</b>	<ul style="list-style-type: none"> <li>• Remaining declared species</li> </ul>	<ul style="list-style-type: none"> <li>• Remaining declared species</li> </ul>	<p>Monitor and support community action by:</p> <ul style="list-style-type: none"> <li>• Increasing landholder awareness of responsibilities</li> <li>• Providing education and capacity building opportunities in response to community or stakeholder demand</li> <li>• Increasing plant and animals vendors awareness of prohibition of sale regulations</li> </ul> <p>Supporting general monitoring</p>

\*Undeclared species



# What is happening across the region already?

Landscapes Hills and Fleurieu leads several regional programs. Read about our journey to get on top of some of our worst pests.



Feral goats

## 1. Managing regional grazing pressure: collaborative action for sustainable landscapes

The impact of large herbivores on our natural and agricultural resources is a hot issue and an important priority for action. In response, our program is focused on addressing the challenges posed by feral goats and feral deer and aiming for their eradication. We are also focused on preventing feral pigs establishing in the region.

Partnering across public and private lands, our team implements a series of strategic aerial and ground shooting initiatives. These concerted efforts aim to curb the population of feral goats and deer, significantly alleviating their impact on the landscape.

Through sustained and collaborative efforts, feral goats in the Hills and Fleurieu region are on the decline. Our collective actions have reduced the core population to fewer than 500 feral goats, a monumental achievement that required the engagement of both public and private land managers. However, our challenge now lies in the intricate task of eradicating those remaining few damaging animals and preventing any future releases.

With the unveiling of the National Feral Deer Action Plan and the State Feral Deer Eradication Strategy, there's a heightened impetus to eradicate feral deer over the next decade.

In 2022-23 alone, 3446 feral deer were successfully removed. However, with deer reproducing at a rate of 35-50% annually, our work is far from finished. Now is our critical window to eliminate this invasive species. Failure to act swiftly could result in the estimated 8000 deer in 2021-22 expanding to an alarming 33,000 deer in the next decade!

Alongside these programs, we are working with our registered deer farms to ensure they are responsibly keeping domestic deer. This means ensuring all deer are suitably confined and tagged (refer to the **SA Feral Deer Policy** for more information). We will be expanding this to strategically work with goat and pig keepers to reinforce our efforts to prevent feral pigs establishing and to eradicate and prevent reestablishment of feral goats.

We need your invaluable support to meet the challenges of these programs. Your reports of untagged deer and feral goats using the Feralscan Pest Mapping app are crucial. Reports of wandering and feral pigs need to be made immediately to us so we can act decisively. Alongside this it is required that land managers remove all feral goats and deer. We can help with strategies to eradicate these animals from your property.

## 2. Unifying efforts against rabbits: a call for collective action

Feral rabbits are small yet persistent pest herbivores that continue to wreak havoc and multiply at an astonishing rate across our landscapes. The favourable conditions between 2020 and 2023 have fuelled their population explosion.

In 2020-21, our community-driven bait distribution days took off, addressing the needs of both land managers in fire-affected areas and those grappling with rabbit pressures in the Central Hills. With an emphasis on synchronization, everyone joined forces to bait when conditions were drier and food availability for rabbits was at its lowest.

Building on past successes, 2022-23 brought forth our mantras: “Three free feeds” to optimise baiting effectiveness and “Pick up your bait” the following morning, ensuring it doesn’t become a feast for other animals.

Our outreach expanded to towns across the Fleurieu region, introducing a distinctive sign declaring, “We’re managing rabbits,” empowering

communities to proudly showcase their commitment to combat rabbits.

In 2023-24, our aim is to rally everyone together and spread the word among neighbours, inviting more people to participate in the program through workshops and supporting neighbourhood letter-drops. While not everyone may bait, there are numerous effective activities such as warren destruction, fortification with guards and fencing that can help control rabbit populations.

Your participation counts. By fostering cooperation and knowledge sharing, we can collectively curb the rabbit population and safeguard our natural assets. Whether through baiting, warren destruction, or protective measures, each action contributes significantly to our common goal of managing rabbits.



Rabbit bait distribution days for region-wide impact



African lovegrass on roadside

### 3. Revitalising roadside weed control: paving the way towards eradication and control

Covering over 10,000 kilometres of roadsides and contending with more than 150 weed species, controlling weeds on our roadsides is a mammoth task. Favourable conditions in recent years has aided weed spread. In partnership with Councils and land managers, we're amplifying our efforts to manage these weeds that threaten our landscapes, biodiversity and agricultural productivity.

Instead of spreading ourselves thin, we are concentrating our resources on priority species and channelling our energy towards weeds where we can make a substantial impact. Collaborating closely with our six local councils, we have co-designed comprehensive roadside weed control plans. This concerted effort has propelled us closer to the local eradication of our priority weed species targets. If you never knew we had these weeds then we have done our job.

Community feedback highlighted mounting concerns about roadside weed proliferation, especially in readiness for dry times and bushfire conditions. In response, we are working with Councils to tackle weeds that could impede bushfire preparedness and compromise fire resilience.

Our collective efforts drive progress. Land managers and local community members and groups are often keen to control roadside weeds that they identify as a priority. If roadside weeds near you evade our control measures, you can take charge. Councils can issue a s221 permit, enabling you to manage those weeds that are causing you frustration or a local threat.

# Tackling regional priority species - setting commitments and measuring success

It was clear during our consultation process that we need to set some specific challenges for Landscapes Hills and Fleurieu to meet in our first Pest Strategy. Achieving the management objectives for each species identified in this strategy will need long term commitment. For many species this may take longer than five years. Improving capture and sharing of pest species data, and developing efficient methods to monitor changes over time is a focus for this strategy, acknowledging it is not feasible to monitor the occurrence and impact of all pest species.

The species selected below are mainly focused on achieving our eradication targets but include those programs where we aim to expand our reach and community involvement, and improve weed mapping, with a particular focus on Weeds of National Significance (WoNS).

Species specific action plans will be developed or updated over time and may replace the targets and actions listed below.

Species	Management objective and current status	Action	Short-term (5-10yr) targets
<b>Pest animals</b>			
<b>Feral deer</b> <b>Red deer</b> <i>Cervus elaphus</i> <b>Fallow deer</b> <i>Dama dama</i> Any other deer species that becomes feral in the region	<b>Eradication</b> The population is expanding across the region with hotspots on the Fleurieu Peninsula, peri-urban Adelaide, Central Hills and Northern Hills.	Develop a Regional Eradication Action Plan for feral deer in collaboration with the National Feral Deer Coordinator. Develop and implement aerial and ground shooting programs. Promote reporting of feral deer sightings into FeralScan. Develop and implement peri-urban control programs. Inspect all deer farms every two years at a minimum. Undertake compliance processes for non-compliant deer farmers, including proceeding to legal action if required.	Two aerial shooting programs are delivered every year. Three ground shooting programs are delivered every year At least one ground shooting program is delivered in the peri-urban environment. Any populations of new deer species (i.e. any species other than red and fallow) are eradicated within 12 months. The population of feral deer drops from 8000 in 2021 to 250 in 2031 in line with the Strategic Plan for South Australian Feral Deer Eradication All deer farms are compliant with State Deer Policy regulations or are meeting exemption conditions by end of 2024/25.

Species	Management objective and current status	Action	Short-term (5-10yr) targets														
<p><b>Feral goats</b> <i>Capra hircus</i></p>	<p><b>Eradication</b></p> <p>Active control over the last 5 years has brought the population down to approximately 500 in the core population in 2022-23, with a smattering of small outlier populations.</p> <p>In Sept 2022, 689 properties were registered to keep goats with the following breakdown in ownership numbers:</p> <table border="1" data-bbox="352 725 687 987"> <thead> <tr> <th># Goats</th> <th># Properties</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>84</td> </tr> <tr> <td>1-10</td> <td>423</td> </tr> <tr> <td>11-20</td> <td>75</td> </tr> <tr> <td>21-50</td> <td>56</td> </tr> <tr> <td>51-100</td> <td>29</td> </tr> <tr> <td>101-350</td> <td>21</td> </tr> </tbody> </table> <p>There are increasing reports of domestic goats escaping from properties.</p>	# Goats	# Properties	0	84	1-10	423	11-20	75	21-50	56	51-100	29	101-350	21	<p>Develop a Regional Eradication Action Plan for feral goats.</p> <p>Work with PIRSA to change declaration status of feral goats in the Hills and Fleurieu region.</p> <p>Promote reporting of wandering domestic goats directly to Landscapes Hills and Fleurieu.</p> <p>Promote reporting of feral goats within FeralScan.</p> <p>Strategically engage goat keepers to ensure goats are confined within goat-proof fencing that meets the minimum fencing standards for goat-keeping.</p> <p>Direct unregistered goat keepers to register for a Property Identification Code (PIC) with PIRSA that registers domestic goats as part of their property livestock.</p>	<p>In the core population, one integrated control program each year, until local eradication achieved.</p> <p>Any new feral goat populations are eradicated within 12 months.</p> <p>The number of feral goats destroyed exceeds 65% of the estimated population each year.</p> <p>Feral goat numbers are below 100 individuals by 2029.</p> <p>Feral goats are declared for destruction in the Hills and Fleurieu region.</p> <p>All domestic goats are kept in accordance with the State Declared Animal Policy by 2034.</p> <p>All goat keepers in the region have a registered PIC with PIRSA that registers their domestic goats as part of their property livestock.</p>
# Goats	# Properties																
0	84																
1-10	423																
11-20	75																
21-50	56																
51-100	29																
101-350	21																
<p><b>Feral pigs</b> <i>Sus scrofa</i></p>	<p><b>Prevention</b></p> <p>Currently there are no known populations of feral pigs in the region. There are increasing reports of domestic pigs escaping.</p> <p>In Sept 2022, 225 properties were registered to keep pigs with the following breakdown in ownership numbers:</p> <table border="1" data-bbox="352 1823 619 2085"> <thead> <tr> <th>#Pigs/# Properties</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>34</td> </tr> <tr> <td>1-10</td> <td>140</td> </tr> <tr> <td>11-20</td> <td>29</td> </tr> <tr> <td>21-50</td> <td>15</td> </tr> <tr> <td>51-100</td> <td>4</td> </tr> <tr> <td>101-500</td> <td>3</td> </tr> </tbody> </table>	#Pigs/# Properties		0	34	1-10	140	11-20	29	21-50	15	51-100	4	101-500	3	<p>Promote reporting of feral pigs directly to Landscapes Hills and Fleurieu, and via FeralScan.</p> <p>Promote reporting of intentional releases of pigs to Landscapes Hills and Fleurieu.</p> <p>Pig keepers are engaged to ensure domestic pigs are well confined.</p> <p>Direct unregistered pig keepers to register for a Property Identification Code (PIC) with PIRSA that registers domestic pigs as part of their property livestock.</p>	<p>All feral and wandering domestic pig detections are acted on immediately.</p> <p>Any new feral pig populations are eradicated within 12 months.</p> <p>Feral pigs are prevented from establishing in the region.</p> <p>All domestic pigs are kept in accordance with the State Declared Animal Policy in by 2034.</p> <p>All pig keepers in the region have a registered PIC with PIRSA that registers their domestic pigs as part of their property livestock.</p>
#Pigs/# Properties																	
0	34																
1-10	140																
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Species	Management objective and current status	Action	Short-term (5-10yr) targets
<b>Rabbits</b> <i>Oryctolagus cuniculus</i>	<b>Asset Protection</b> Widespread across region and increasing in the Adelaide Central Hills	Deliver bait distribution days across the region, where people can purchase discounted Pindone or K5 treated carrots.  Deliver rabbit management sessions across the region to promote best practice rabbit management including use of all the available rabbit management tools.	200 people each year are participating in a rabbit management program.  Number of people participating in bait distribution days is increasing each year.  100 people improve their capacity to manage rabbits each year.  Number of people attending rabbit information sessions is increasing each year.
<b>Pest Plants</b>			
<b>Arrowhead</b> <i>Sagittaria platyphylla</i>	<b>Eradication</b> Arrowhead is a WoNS  One infestation is known in the region in dams on four properties. The sites are under on-going management with populations reducing in all dams	Review and update eradication plan.  On-going management of all sites each year working towards eradication.  Promote reporting of this aquatic weed to Landscapes Hills and Fleurieu.	All impacted landholders are participating in eradication efforts.  Whole infestation is under active management and heading towards eradication by 2034.
<b>Flax-leaved Broom</b> <i>Genista linifolia</i>	<b>Eradication</b> Flaxed-leaved Broom is a WoNS  Two sites are known in the region are both roadside populations on the Fleurieu.	Develop an eradication action plan for the region.  On-going management and monitoring at all sites.	Eradication plan developed.  Effective eradication by 2029, noting the long lived seed will mean sites require on-going monitoring for a many more years.
<b>Parrot Feather</b> <i>Myriophyllum aquaticum</i>	<b>Eradication</b> Only one infestation is known in the region near Nairne. Despite on-going management this weeds appears to be spreading.	Review and update eradication plan  Map full extent of infestation  Promote reporting of this aquatic weed to Landscapes Hills and Fleurieu  Work towards eradication	Full extent of the infestation is understood and well mapped.  All impacted landholders are participating in eradication efforts.  Whole infestation is under active management and heading towards eradication by 2034

Species	Management objective and current status	Action	Short-term (5-10yr) targets
<p><b>Chilean Needlegrass</b> <i>Nassella neesiana</i></p>	<p><b>Containment</b></p> <p>Chilean Needlegrass (CNG) is a WoNS</p> <p>One small site in the Adelaide Hills and two larger clusters on the Fleurieu with all sites under active management.</p>	<p>Review and update management action plan for the region.</p> <p>Develop and implement site specific management plans.</p> <p>Funding and collaboration opportunities sought for intensive survey and management at all sites.</p>	<p>All CNG sites are being managed.</p> <p>Fleurieu sites are not expanding and are reducing in density.</p> <p>Adelaide Hills site is effectively eradicated by 2029.</p> <p>All landholders engaged in site specific management plans.</p>
<p><b>Madeira vine</b> <i>Anredera cordifolia</i></p>	<p><b>Containment</b></p> <p>Madeira vine is a WoNS and garden escapee.</p> <p>In the region there are outlier populations on the Fleurieu with a core but diffuse population in the Adelaide Central Hills.</p> <p>Local eradication plan for Madeira vine on the Fleurieu was updated in 2023.</p>	<p>Develop a management action plan for the whole region.</p> <p>All Madeira vine populations outside of the Adelaide Central Hills are actively managed.</p> <p>Media campaign to increase awareness and control of Madeira vine in the Adelaide Central Hills. This will include encouraging landholders to report this weed in Weedsan.</p> <p>Management options for managing plants in the Adelaide Central Hills will be investigated.</p>	<p>All infestations are being actively managed and sites on the Fleurieu eradicated by 2029.</p> <p>Adelaide Hills landholders participating in programs to remove Madeira vine from their properties.</p> <p>Citizen science reporting of Madeira vine increases to improve mapping knowledge.</p>
<p><b>Wide spread WoNS:</b></p> <p><b>African boxthorn</b> <i>Lycium ferocissimum</i></p> <p><b>Boneseed</b> <i>Chrysanthemoides monilifera subsp. monilifera</i></p> <p><b>English Broom</b> <i>Cytisus scoparius</i></p> <p><b>European blackberry</b> <i>Rubus fruticosus aggregate</i></p> <p><b>Gorse</b> <i>Ulex europaeus</i></p>	<p><b>Asset protection</b></p> <p>These weeds are wide spread and well-established but do not cover the whole region. There are parts of the region where they are not present or are present as scattered or outlier populations.</p>	<p>Work with the National Established Weeds Priority (NEWP) process to nominate new wide spread weeds as WoNS.</p> <p>Improve our understanding of the boundaries of wide spread weeds including the location of outlier populations through the use of citizen science approaches</p>	<p>Use citizen science approaches such as Weedsan to better understand where the scattered outlier populations and regional boundaries of wide spread weeds are to stop these weeds expanding into new areas.</p> <p>Funding sought for regional programs to actively manage outlier populations and boundary zones.</p>

# How do we know we have made a difference?

Achievement of the short term targets will indicate we are on track to achieving the management objectives for priority species identified in this strategy.

As a companion document to the Regional Landscape Plan, the Hills and Fleurieu Landscape Board’s regional monitoring and evaluation framework identifies short, medium and long term outcomes for the region. The evaluation of the effectiveness of pest plant and animal activities will be evaluated through indicators under the following short, intermediate and long term outcomes:

<b>Hills and Fleurieu MERI framework indicators - Pest plants and animals</b>		
<b>Short-term outcomes:</b>	<b>Intermediate outcomes:</b>	<b>Long-term outcomes:</b>
<ul style="list-style-type: none"> <li>Improved land manager stewardship capacity</li> <li>Increased regional collaboration</li> <li>Mitigation of local threats</li> </ul>	<ul style="list-style-type: none"> <li>Improved regional stewardship capacity</li> <li>Localised reduction in threats</li> </ul>	<ul style="list-style-type: none"> <li>Improved regional landscape health through pest threat management</li> </ul>
<ul style="list-style-type: none"> <li>Number of land managers attending pest and weed management events</li> <li>Number of land managers with improved knowledge and awareness of pest/ weed management practices</li> <li>Number of land managers participating in bait distribution programs</li> <li>Number of notifications of pests/ weeds from the public</li> <li>Number of local infestations eradicated</li> </ul>	<ul style="list-style-type: none"> <li>Extent of priority pests (for eradication and containment species – Section B)</li> </ul>	<ul style="list-style-type: none"> <li>Status and trends of priority pests</li> </ul>

More detail can be found in the **Hills and Fleurieu Landscape Board MERI Framework 2022-26**.

## Reporting back and review

We will continue to take on community and stakeholder feedback as we strive to improve our programs, projects and processes. As part of the review process we will report on activities, challenges and outcomes identified in this Regional Pest Strategy. The Strategy will be reviewed every five years.





Interested to learn more and see our progress?

Please visit our website to view our:

- Annual Achievements Report
- Statutory Annual Report
- Annual Business Plan
- Program information
- Snapshots of the condition of the region

## **Connect with us**

Hills and Fleurieu Landscape Board

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*We work on Kurna, Peramangk and  
Ngarrindjeri Yerta/Ruwe*

*Always was, always will be*