2021

THE LEGISLATIVE ASSEMBLY FOR THE AUSTRALIAN CAPITAL TERRITORY

Update to the Legislative Assembly on Recommendation 2 of the Standing Committee on Environment, Climate Change, and Biodiversity – Report 1 on Inquiries into Annual and Financial Reports 2019-2020 and Estimates 2020-21

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Introduction

- The Legislative Assembly Standing Committee on Environment, Climate Change and Biodiversity Report on the Annual and Financial Reports 2019-20 and Estimates 2020-21 has recommended and requested that the Environment Planning and Sustainable Development Directorate (EPSDD) provide the Assembly with an update on the management of invasive plants and animals in the ACT.
- EPSDD is the lead directorate for invasive species management in the ACT, however implementation is a whole of government responsibility involving a suite of stakeholders.

Recommendations

No.	Recommendations
Recommendation 2	**2.45** The Committee recommends that the ACT Government update the Assembly on the management of invasive plants and animals before the next Budget.

ACT Government Response to Recommendation 2 of the Standing Committee on Environment, Climate Change, and Biodiversity – Report on Annual and Financial Reports 2019-2020 and Estimates 2020-21

2.45 The Committee recommends that the ACT Government update the Assembly on the management of invasive plants and animals before the next Budget.

Context

Invasive species are non-native plants and animals whose introduction and/or spread threatens biological diversity. Invasive species also impact socio-economic activity.

Much of EPSDDs focus in management of invasive species is about protection of the environment. The Convention on Biological Diversity lists the spread of invasive species as a driver of biodiversity loss. A global meta-analysis of 1,041 field studies found that the abundance and diversity of resident native species declined with invasive non-native species spread. Other environmental impacts include soil erosion, water quality impacts and pollution from overuse of chemicals in extreme circumstances.

The ACT Government is also aware of its regional and national obligations and continues to engage with interstate and federal departments on all levels to ensure that activities in the ACT align with broader national activities and priorities and mitigates the economic impacts of invasive species incursions such as reduced access to international markets, decreased value of land or property, lower crop productivity and livestock losses.

Invasive weed infestations were particularly prevalent in 2020/21 due to the favourable growth conditions brought on by recent La Nina weather patterns. These favourable weather conditions can also lead to increased breeding and survival rates of invasive animals.

The policies, plans and strategic approach that guides us.

Invasive species (plant and animal) management in the ACT is underpinned by legislative requirements of the *ACT Pest Plants and Animals Act 2005* and implemented in alignment with the associated strategies (ACT Weeds Strategy, the ACT Pest Animal Strategy and the ACT Biosecurity Strategy).

At a strategic planning level, the management goals of the invasive plant and animal programs are similar and aim to:

- Reduce the impact of established invasive species (threat abatement);

- Reduce the threat from new incursions; and
- Increase capacity to manage threats.

However, at an operational level, their implementation is different which reflects differences between plants and animals in the landscape.

The 2020-25 Invasive Plants Plan (https://actgov.maps.arcgis.com/apps/MapJournal/index.html?appid=cd59d70662c94c75a0492635f7925384) outlines the principles for effective invasive plant management. It also gives details of the priorities for the next five years. Prioritisation of invasive plants management is based on weed risk assessments, assets at risk and pathways of spread.

Management of Invasive Pest Animals is guided by the ACT Pest Animal Management Strategy 2012-2022 (https://www.environment.act.gov.au/__data/assets/pdf_file/0008/575117/PAMS_WEB.pdf) which details a strategic approach aimed at a reduction of impacts.

When planning invasive species management, it is important to understand where the pest species is on the invasion curve (Figure 1 below) and the intended outcome sought from management. This helps inform the level of effort and funds that are required. A focused effort and targeted intensive eradication program for new incursions is required to ensure that new invaders do not become established in the landscape. Having the ability and capacity to respond to new incursions is imperative when limiting the impact of newly identified invasive species. At the other end of the scale, management of widespread, established pests will focus on protection of key environmental/economic assets.

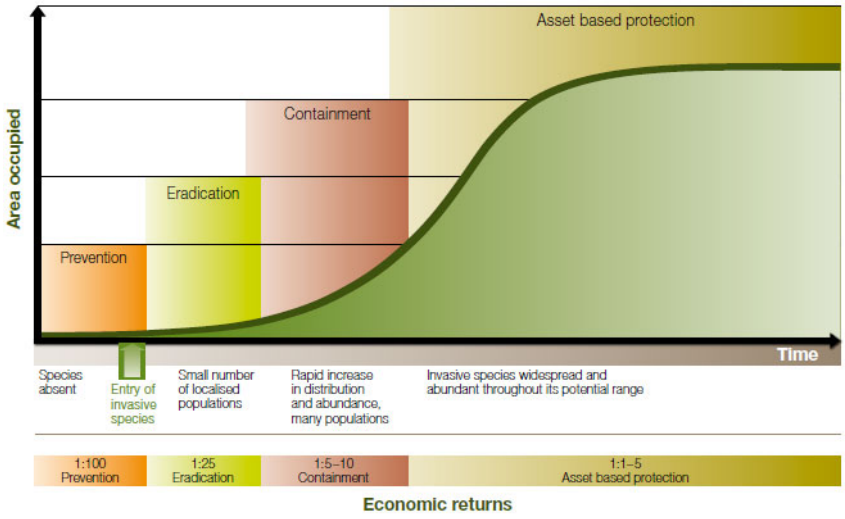

Figure1 Appropriate management actions and economic returns on investment at different phases of the invasion curve. (Sourced from Biosecurity Victoria)

Furthermore, EPSDD is part of the NSW Government's South East NSW Regional Weeds Committee. The Committee oversees the implementation of the SE NSW Regional Weeds Plan. The plan sets priorities for the region, and these are incorporated in the 2020-25 ACT Invasive Plants Plan. This ensures there is a coordinated approach to the management of high-risk invasive plants in the ACT and SE NSW. It has resulted in joint biosecurity responses to new incursions of invasive plants, such as parthenium weed, Coolatai grass, and mouse-ear hawkweed.

Our achievements

Invasive plants

EPSDD (Resilient Landscapes, ACT Parks and Conservation Service) and Transport Canberra and City Services (TCCS) (Place Management - City Services) staff, contractors, and volunteers (Parkcare, Urban Landcare) undertake the bulk of invasive plant control works. There are many other program partners such as: the Suburban Land Agency (SLA), the National Capital Authority (NCA), ICON Water, ACT Landcare & catchment groups, and the National Arboretum - Stromlo Forest Park.

Expenditure on the management of invasive plants in 2020-21 was:

- Program coordination cost of $880,000
- $3.13M for invasive plant control contracts and program support. This included $160,000 from bushfire recovery and $620,000 from the mid-term budget.
- Control work by volunteers is valued at $900,000.

Opportunistic funding is also available through various Commonwealth/State and Territory initiatives including;

- ACT delivery of Australian Government funded programs in 1) bushfire recovery for post weed control and 2) Woodlands Restoration Project between 2018/19 and 2022/23 which involves weed control, fencing and tree planting.

This allowed the following achievements against our stated goals;

Reduce the impact of established invasive species (threat abatement)	• 10,000ha of control work • Reduced the density of invasive plants at 80,600 control sites
Reduce the threat from new incursions.	• Contained the spread of 20 new incursion species

Increase capacity to manage threats.	• Used citizen science, e.g. Canberra Nature Map, to report new incursions • Applied innovative management methods, such as detection dogs and drones • Mapped control work on the ArcGIS On-line treated weeds maps - using the Collector, Field Maps & Quick Capture apps

Control work is summarised using an Operations Dashboard (https://actgov.maps.arcgis.com/apps/dashboards/ce6ba96cdc6942938028dd5a1b707e24) providing real time information and territory wide assessment of control activity.

The top ten species managed are St John's wort, African lovegrass, blackberry, serrated tussock, pine wildings, fireweed, nodding thistle, Paterson's curse, sweet briar, and Chilean needle grass.

The 2020-21 Invasive Plants Annual Report (https://storymaps.arcgis.com/stories/90c4936a79e74a9fbe77cd877baadc50) provides details of on-ground control achievements including:

- Integrated management that combined non-chemical and herbicide control methods for effective control;
- Use of biosecurity detection dogs to help locate high risk new incursion invasive plants;
- Prioritisation of post-fire control work to maintain ecosystem resilience; and
- Use of new technology such as drone swarms and mobile device mapping apps for more efficient land management

Invasive animals

EPSDD provides program coordination, expert advice and technical support for the management of invasive species across the ACT. EPSDD dedicates 2.5 FTEs to this function.

Much of the program implementation is conducted by the land manager such as the ACT Parks and Conservation Service, TCCS and rural leaseholders.

EPSDD runs a number of invasive animal control programs and contributes approximately $450,000 annually towards the monitoring and management of pest animals identified within the ACT in addition to the staff costs mentioned above.

Measuring the effectiveness of invasive animal programs in terms of number of animals controlled is difficult due to their inherent transient nature, the difficult terrain that they usually inhabit and prioritisation of financial resources. Success is therefore measured in terms of population densities and reduction in environmental impact.

Invasive animal management targets areas of high conservation values and/or cooperative programs with rural landholders. Invasive animal management falls into two primary areas:

1. Reducing grazing/trampling (horses, pigs, deer and rabbits)

   Control is particularly important in areas of high conversation value e.g., alpine bogs and fens including the Ramsar listed Ginini wetlands or other threatened plant communities and species.

2. Reducing predation (foxes and cats)

   Control is particularly important to reduce impacts on critical weight range fauna following a disturbance event like a fire where habitat is more open, and species are more susceptible to predation.

Recurrent budget allocations are occasionally supplemented by short term initiatives to target localised populations or collaborative management programs with neighbouring landholders including;

- ACT delivery of Australian Government funded programs for:
  - The control of sambar deer
  - Post fire pest animal control in Namadgi National Park (bushfire recovery funding); and
  - Rabbit and fox control in Mulligans Flat Wildlife Sanctuary
- The ACT Government Rural resilience grants program (20/21) to fund rural pest and weed management.

Invasive animal management objectives vary between species, location and situational context. Management effort is mainly focussed on the following species:

<u>Rabbits</u>

- Rabbits impact on natural and rural systems by causing a loss of vegetation cover which can result in unusable grazing land. They exacerbate erosion and weed colonisation and threaten the survival of native birds, small mammals, reptiles, and insects that rely on groundcover plants for food and shelter.
- Monitoring to understand population trends and to allow targeted management is regularly conducted across the ACT.

<u>Wild Dogs</u>

- Namadgi National Park and adjacent areas in the ACT and NSW support populations of wild dogs and dingoes.
- Wild dogs, if unmanaged, can inflict stock losses on sheep graziers.

- The ACT Government is also signatory to three cooperative Wild Dog Management Plans with New South Wales authorities which are aimed at protecting livestock from wild dogs originating from Namadgi National Park.
- These efforts have resulted in no increase in the number of sheep killed in the ACT in recent years and minimal losses in neighbouring NSW.

Feral Horses

- Feral horses pose a threat to the natural values of Namadgi National Park due to impacts such as vegetation damage and erosion. Of particular concern is the potential for damage to the sensitive sub-alpine wetlands of the Cotter River catchment in the ACT border region with NSW.
- Feral Horses are managed in accordance with the recently revised Namadgi National Park Feral Horse Management Plan (2020) which has a zero tolerance policy towards feral horses in Namadgi National Park.
- Feral horse populations are present in neighbouring Kosciuszko National Park and regular monitoring is conducted by EPSDD to ensure early detection of new incursions.
- The ACT Government regularly contributes to the management of feral horses right across the Australian Alps through its involvement on the Australian Alps Feral Horse working group and continues to communicate regularly with NSW National Parks and Wildlife Service on feral horse management issues in northern Kosciuszko National Park.

Feral Pigs

- Feral pigs are widely distributed throughout the non-urban parks and reserves. Ground disturbance by pigs creates bare ground, contributing to erosion and weed invasion as well as causing loss of visual amenity for park visitors. On rural land they plough up pasture, kill lambs, damage fencing and are a potential vector for several serious endemic and exotic livestock diseases.
- The objectives for management of feral pigs are to maintain feral pig populations and resulting impacts on public land at current low levels and to assist the rural community and other land managers to manage impacts on primary production by encouraging coordinated pig control programs across land tenures.

Foxes

- Foxes are ubiquitous in the ACT but effective management over large areas is constrained by restrictions in the use of 1080 poison. In special cases fox baiting is sometimes performed under tight restrictions to reduce predation of native species.
- Foxes are often a ‘by catch’ of the wild dog management programs.
- Consistent with the asset management approach described in relation to the invasion curve (Figure 1), effort focuses on protecting our priority environmental assets.
- In 2009 a predator-proof fence was constructed enclosing 484 hectares of Mulligans Flat Nature Reserve. In 2019 another predator proof fence was erected enclosing an additional 794 hectares within the Goorooyarroo Nature Reserve. The total area of the Sanctuary is 1,278 hectares.

- Significant work has been undertaken to remove foxes, feral cats, rabbits and hares within the Sanctuary. Foxes and cats were eradicated from the original Sanctuary in 2010. Staff are currently conducting intense monitoring using remote cameras and spotlighting.
- The fence, along with the feral animal control, has allowed the reintroduction of locally extinct native animals – Eastern Bettong, Eastern Quoll, Bush Stone-curlew, and New Holland Mouse – which are vulnerable to predation by foxes and cats.

Deer

- Feral deer are an increasing environmental and agricultural threat in the ACT with populations of fallow, red and sambar deer across Namadgi and Canberra Nature Parks.
- Ground and aerial shooting programs are conducted in conservation reserves and at times cooperatively with neighbouring rural landholders.
- Sambar deer are becoming an increasing threat to the ACT high country and this year with funding from the Commonwealth we conducted a successful control program using thermal imagery technology to detect deer, a national leading approach.

Innovation in invasive species management

Using Integrated Pest Management (IPM) techniques ensures that no one single method of control is relied on, resulting in more efficient and effective long-term control. Examples of this approach for invasive plants includes the use of burning plants such as African lovegrass to reduce overall plant mass and encourage seed growth which allows a more efficient targeted use of herbicide to reduce infestation density and allow competitive native plants to repopulate the landscape.

The ACT continues to be a leader in embracing research and adapting management plans to include the latest technological advancements in invasive species control. By continually improving and refining techniques our management programs become more efficient and effective. Research, monitoring and evaluation are a fundamental part of invasive species management to ensure that the understanding of the ecological assets/values and invasive species response become an integral part of future management actions.

Examples include:

- The integration of an extensive spatial mapping system to map infestations and management effort as well as density levels of identified target plants. This is the foundation for planning for ongoing invasive plant management and assists in prioritising funds and effort for maximum benefit.
- Use of innovative management methods, such as detection dogs and drones for invasive plant management.
- The use of thermal imagery technology that vastly improves the ability to locate such animals such as feral pigs and deer, allowing a more effective use of targeted aerial shooting as a method to control these species in rough, heavily vegetated terrain.

Adaptive management for program efficiency

The invasive plants program provides a good demonstration on how EPSDD uses adaptive management to improve the efficacy of its programs. The 2020-21 Invasive Plants Annual Report provides good insight into how the program is monitored and evaluated and how this information feeds into the strategic approach for prioritisation and risk assessment (Invasive Species Management Invasion Curve – Figure 1) to ensure effective allocation of human and financial resources.

Ongoing investment is required for invasive species management to ensure that the achievements gained over many years of effort are not lost. Figure 2 below highlights the risk of spasmodic initiative funding for invasive species management. This graph of rabbit counts at Gudgenby Valley demonstrates that when funding/effort is withdrawn rabbit numbers increase dramatically. The cost of reigning that population back into 'management mode' is substantially higher than maintaining a consistent management program.

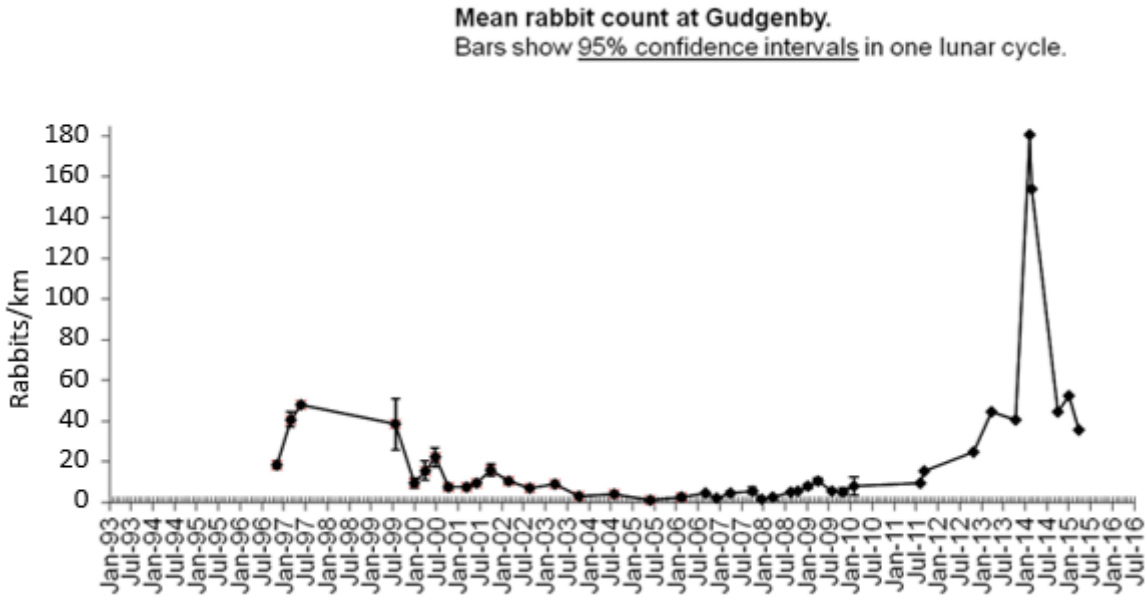

Figure 2 extracted from the 2018-2019 Protecting Native Species business case