

Updated: ACT Environmental Weed Control Operations Plan 2011 - 2019

7th November 2011



Before

Blackberry infestation that has smothered an area of native Hop Bush and Cassinia at Red Hill Nature Reserve.

Senior Weed Management Officer
ACT Parks & Conservation Service
TAMS – ACT Government



After

After careful spot spraying - remaining shrubs are 'rescued' native Hop Bush and Cassinia (in flower at left of photo).

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What is an Environmental or Invasive Weed?

Environmental weeds or invasive weeds are weeds that invade natural areas. The worst environmental weeds form mono-cultures – smothering native plants. Some environmental weeds also increase fire danger, eg. Serrated Tussock, Tall African Lovegrass and Blackberry. A number of these are classed by the Federal Government as Weeds of National Significance (WONS), eg. Blackberry and Serrated Tussock. Most environmental weeds are exotic or introduced plants from overseas (eg. Blackberry from Europe, Serrated Tussock from South America). Some environmental weeds are native plants that have spread out of their natural range (eg. Cootamundra Wattle planted throughout SE Australia).

Why Control Environmental Weeds?

“Environmental weeds are plants that represent a threat to the conservation values of natural ecosystems. They invade native plant communities and out-compete them causing a reduction in plant diversity and resulting in a loss of habitat for native animals.” NSW Department of Primary Industry – <http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/definition#Environmental-weeds>

“Invasive weeds are among the most serious threats to Australia’s natural environment and primary production industries. They displace native species, contribute significantly to land degradation, and reduce farm and forest productivity. Australia spends considerable time and money each year in combating weed problems and protecting ecosystems and primary production on private and public land.” Australian Government – <http://www.weeds.gov.au/>

“Weeds have major negative economic, environmental and social impacts in the ACT. They cause damage to nature conservation assets and values, reduce primary industries productivity, detract from urban landscapes and recreational amenity and interfere with the ecological and other functions of waterways. Land that harbours weed species can be a source of infestation for other areas.” ACT Weeds Strategy 2009-19 – ACT Dept of the Environment, Climate Change, Energy and Water

“Invasive plants, animals and diseases threaten native biodiversity because of their ability to change and destroy habitats and ecosystems.

- They are the number one cause of native animal extinctions in Australia.

- They are the second biggest threat to river and stream areas and nationally important wetlands.
- They are the third biggest threat to threatened ecosystems.

Invasive species can also harm social and economic assets. They may affect primary industries including agriculture, forestry and fisheries. They can also affect recreation, tourism and cultural values, including sites of significance to indigenous people.”

Victorian Department of Sustainability and Environment (DSE) - <http://www.dse.vic.gov.au/plants-and-animals/invasive-species>

What about Amenity Weeds?

Amenity weeds or Ruderals are typically weeds of disturbed areas that grow on the edges of footpaths, car parks, playing fields and other highly disturbed urban open space areas. They are controlled by TAMS – City Services because they look un-tidy or are an inconvenience to the public. Many are annual grasses and herbs. Examples include: Brome Grasses, Couch, and Bindi. Amenity weed control projects do not conserve biodiversity and they do not protect our nature conservation reserves, so they are not part of the Environmental Weed Control Operations Plan (eWOP). TAMS – City Services also undertakes environmental weed control projects on some areas of their land, including urban areas opposite nature conservation reserves. These environmental weed infestations are included in the eWOP.

ACT Weeds Strategy & Other Strategic Plans or Reports

The ACT Weeds Strategy 2009-19 is a strategic plan that sets out the following goals for environmental weed management: prevent new weed problems, reduce the impact of priority weed problems and enhance capacity & commitment to solve weed problems. The Environmental Weed Management Guidelines <http://www.tams.act.gov.au/play/pcl/pestsandweeds/managingpests> have been produced to help meet the third goal of enhancing capacity to solve weed problems. Education projects like the Floriade Weebusters Display Garden, the Garden Plants Going Bush brochure and the Weed Swap program also address this goal. The first two goals of the ACT Weeds Strategy 2009-19 are met by having a prioritised environmental weed control operations plan or eWOP.

There are numerous other strategic plans and reports that recommend controlling environmental weeds for the protection of biodiversity. The plans and examples of the relevant recommendation or goal are listed below in Table 1.

Table 1 – Plans and Reports that Recommend Controlling Environmental Weeds

Report or plan	Example of goal or recommendation
ACT Weeds Strategy 2009-19 – DECCEW 2009	Goal – reduce the impact of priority weed problems
Report on the ACT Lowland Native Grassland Investigation – Commissioner for Sustainability and the Environment 2009	Recommendation 21 – Controlling invasive weeds
Action Plan 29 – ACT Aquatic Species & Riparian Zone Conservation Strategy 2007	Action M02 – Undertake riparian rehabilitation including removal of Willows
Action Plan 27 – ACT Lowland Woodland Conservation Strategy 2004	Objective 3a – Identify and monitor threats including weed and pest invasion
Action Plan 28 – ACT Lowland Native Grassland Conservation Strategy 2008	Objective 3b – Reduce the impact and occurrence in grasslands of weeds of concern.
Weeds of National Significance (WONS) National Blackberry Strategic Plan 2011-2016 – Australian Weeds Committee (AWC)	Goals 1 & 2 – New infestations are prevented & existing infestations are under strategic management.
WONS Willows National Management Guide – Willows National Taskforce 2007	Impacts of Willows: ‘now regarded as one of Australia’s most serious riparian and wetland weeds’
WONS National Alligator Weed Strategic Plan 2011-2016 AWC	Goal 1c – Reduce invasion pathways for alligator weed
WONS National Serrated Tussock Strategic Plan 2011-2016 AWC	Strategies: new infestations are prevented from establishing & infestations are actively managed
WONS Draft National Chilean Needlegrass Strategic Plan 2011-2016 AWC	Goals 1 & 2 – New infestations are prevented & existing infestations are under strategic management.
ACT Climate Change Strategy Action Plan 2007-11	Action 33 – Protect areas of high conservation value
Lake Burley Griffin Willow Management Plan – ACT Government & Molonglo Catchment Group	Recommendations No. 9, 16 & 17 – Control Crack Willow, Blackberry & Black Alder
Plan for Managing the Natural Resources of the ACT – ACT NRM Council 2009	Biodiversity management – Need to reduce threats (e.g. from weeds, development, fire).

How are Environmental Weeds Controlled?

Prevention or avoiding the creation of new environmental weed infestations is very important. Clean equipment, vehicles and avoiding soil disturbance all helps. Not over-grazing areas helps as well. The Invasion Curse (Figure 1, below) shows that a dollar spent on prevention produces a large economic return. This return is the cost savings from avoiding damage to agricultural and natural areas plus reducing future weed control costs.

Once an infestation has established application of selective and non-selective herbicides to the target weed are the main control methods. They can be spot sprayed, boom sprayed, cut and painted with herbicide or frilled/drilled and injected – depending on the weed species. Knapsacks, high pressure spray vehicles, chainsaws, loppers, specialised tree harvester excavators and helicopters are all used in the environmental weed control effort.

Biological control helps in some seasons with environmental weeds like Paterson's Curse. In some areas revegetation is used when natural regeneration fails to provide competition to the target weed species.

It is easy to do poor weed control – that causes significant off-target damage. Successful environmental weed control requires a very good knowledge of plant species, herbicides, weather, specialised equipment and ecological principles. It is best done by skilled operators.

Weeds Working Group & Cooperative Projects

The ACT Parks & Conservation Service (ACTPCS) is the main land manager in the ACT. The Service manages 172,564 ha or approximately 73% of the ACT. Googong Foreshores (4,557ha) is also managed by the ACTPCS. The areas of urban open space that are not in conservation reserves are managed by TAMS – City Services. Other managers of conservation reserves in the ACT are the Defence Department, the National Capital Authority and Territories Venues and Events – Stromlo Forest Park. A number of rural leases also contain important native vegetation and grazing lands.

It is essential that when highly invasive environmental weed species (eg. Serrated Tussock) are controlled on one area of land that they are controlled in neighbouring areas. A cooperative approach should always be sought and involve all the relevant landholders.

The ACT Parks & Conservation Service (ACTPCS) liaises with other ACT region land managers via the Weeds Working Group. The Group has a broad range of land management expertise. The membership of the Weeds Working Group is listed in Table 2 (below).

There are many examples of joint or cooperative projects where the ACTPCS works with other land managers in the ACT Weeds Working Group:

- Blackberry in Northern Namadgi NP (Transgrid, NSW NPWS),
- Sweet Vernal Grass in Northern Namadgi NP (NSW NPWS, Air Services Australia)
- Serrated Tussock on the Northern Clear Range (NSW & ACT rural landholders, Cooma-Monaro Council)
- Serrated Tussock at One Tree Hill (Southern Slopes County Council, ACT landholders)
- St John's Wort at Mt Ainslie NR (Defence Department)
- African Lovegrass along the Murrumbidgee River (rural landholders)
- Serrated Tussock at Gorooyaroo NR (NSW NPWS, NSW & ACT landholders)
- Serrated Tussock control at Jerrabomberra Grasslands NR (Jerrabomberra Valley rural landholders, Defence Department, Queanbeyan Council)
- Blackberry and Woody Weed control at Mt Pleasant NR and Molonglo Reach (NCA, Defence Department, City Services)

The Blackberry and Woody Weed control at Mt Pleasant NR and Molonglo Reach will remove rabbit harbour or shelter. This will then allow rabbit control work, which is part of the ACTPCS Vertebrate Pest Management Operations Plan, to be effective. Removal of the rabbit harbour requires herbicide spraying, physical removal of woody weeds and burning of the dead material. The burning operations will be proposed as a new project for the ACTPCS Bushfire Operations Plan.

Table 2 – ACT Weeds Working Group

Position	Organisation
Parkcare Officer	ACT Parks & Conservation Service (ACTPCS) – Community & Visitors Programs
Plant Ecologists	ACTPCS – Conservation Research & Planning
Ranger-in-charge of Environmental Weeds	ACTPCS – Invasive Species & Rural Lands (NRP) Unit
Manager	ACTPCS – Invasive Species & Rural Lands (NRP) Unit
Project Ranger	ACTPCS – Lower Cotter Catchment
Rangers-in-charge	ACTPCS – North, South, Rural Districts (Tidbinbilla, Namadgi, Cotter & Googong)
Environment Officer	ACTEW-AGL
Horticultural Ranger	Australian National Botanic Gardens
Project Ranger/Officer	Capital Wetland Board
ACTPCS Ranger-in-charge of Mulligan’s Flat-Goorooyarroo	Capital Woodland Board
Horticulturalist	Community Representative
Noxious Weeds Officer	Cooma-Monaro Shire Council
Environment Officer	Defence Department
Policy Officer	ACT Environment & Sustainable Development Department
Estate Management Officer	Land Development Agency
Project Manager	National Capital Authority
Project Manager	New Arboretum
Rangers for Brindabella NP and Bimberi NR	NSW National Parks & Wildlife Service (NSW NPWS)
Landholder	Rural Landholders Association
Manager	Stromlo Forest Park
Pest Species Ranger	TAMS (Territory & Municipal Services) – City Services
Lakes Officer	TAMS – City Services
Project Officer	TAMS – Tree Unit
Environment Officers	Transgrid , Country Energy

Priorities for Environmental Weed Control

The main goal of the ACT Weeds Strategy 2009-19 is reducing the impact of priority weeds. Setting priorities makes the best use of limited resources to control environmental weeds. It minimises the damage to nature conservation areas and maximises the protection of biodiversity. ACT weed management prioritisation is based on the NSW Weed Risk Management System¹ and prioritising weed control to protect rare or threatened species.²

Table 3 lists the weed risks, determined using the NSW Weed Risk Management System, for the commonly controlled environmental weeds in the ACT plus some of the Ruderal type weeds. Ruderal or coloniser weeds are weeds of disturbed areas. The Weed Risk Management System measures a weed’s: invasiveness, impact, and potential distribution. This is used to help determine the priorities for weed control in Decision Matrix 1 (below). Weeds with the highest risk are ones that cause the most environmental damage. For example Serrated Tussock not only smothers

native understorey plants and valuable pasture but it also increases fire danger.³ Blackberry also increases fire danger and smothers an even wider range of plants, as well as being a harbour for feral animals like Rabbits.

Decision Matrix 1 takes into account where a weed is located on the Invasion Curve (Figure 1 below). There are 4 phases in dealing with an invasive species: prevention, eradication, containment and asset based protection. For example African Lovegrass along the Murrumbidgee River Corridor is in the Asset Based Protection phase on the Invasion Curve. In Decision Matrix 1 this would equate to a ‘weed risk’ of Very High and a value of Low for the ‘feasibility of coordinated control’. The weed management strategy resulting from this is to ‘manage weed’ & ‘protect priority sites’. Priority sites include Yellow Box-Red Grassy Woodland and adjacent productive agricultural land.

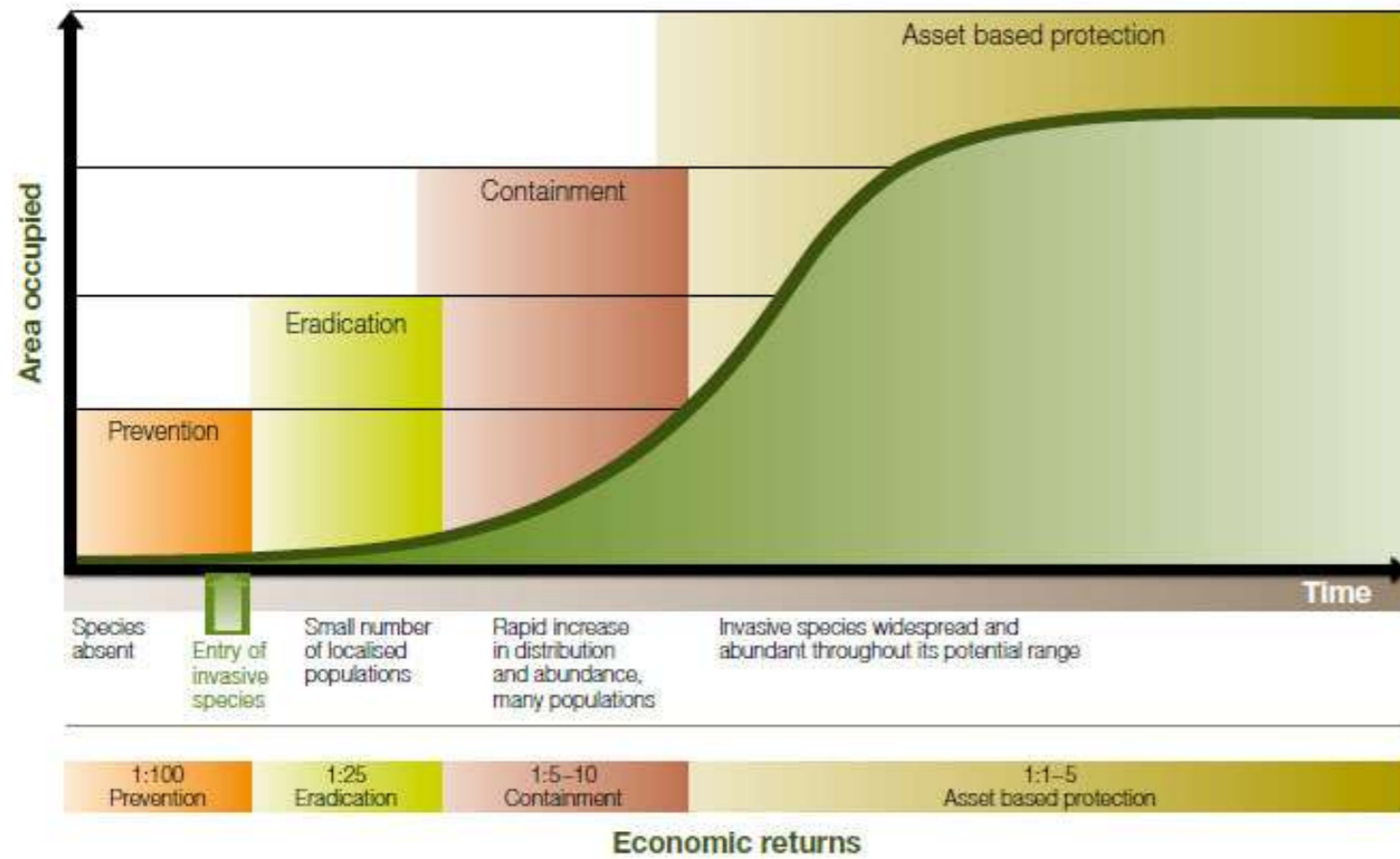
The scores attached to the ‘weed risk’ and ‘feasibility of coordinated control’ in Decision Matrix 1 are determined by using the NSW Weed Risk Management System Form (<http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/wrm-system>).

¹ Johnson, S. (2009) NSW Weed Risk Management System, NSW Department of Primary Industry.

² Downey P O, Scanlon T J and Hosking J R (2010) Prioritizing weed species based on their threat and ability to impact on biodiversity: case study from NSW, Plant Protection Quarterly Vol.25(3) 2010.

³ The Victorian Department of Sustainability & Environment has found that Serrated Tussock increases the fire intensity by a factor 7 – compared to the native grasses it replaces.

Figure 1 – The Invasion Curve



Source: Victorian Department of Primary Industries: <http://new.dpi.vic.gov.au/agriculture/pests-diseases-and-weeds/protecting-victoria-pest-animals-weeds/invasive-plants-animal-policy>

A dollar spent on a weed problem at the prevention or eradication phases produces a far bigger return than waiting for it to reach the later stage of the containment or asset based protection phases.. One way of looking at the economic return is the cost savings you create by acting early in the weed invasion timeline.

The Invasion Curve clearly illustrates that prevention and early eradication save a lot of money. This is recognised in the ACT Weeds Strategy 2009-19 where one of the goals is to prevent new weed problems. Three examples of efforts to prevent new weed problems are:

- 1) The purchase of an additional portable vehicle wash down unit by the Fire Management Unit of ACT Parks & Conservation Service.
- 2) Continued support for the Floriade bush friendly 'Weedbusters' garden and the 'Weed Swap' program.
- 3) Completion of a code of practice for ACTEW/AGL field staff when working in ACT reserves, which includes a section on vehicle hygiene.

In future years requiring new mowing contracts to include invasive weed control will help to prevent the accidental spread of African Lovegrass, Serrated Tussock, Chilean Needlegrass and St John's Wort.

Examples of projects where eradication is the goal are:

- 1) Mexican Feather Grass control at the Bendora Dam area.
- 2) Giant Willowherb control at Gungahlin Pond
- 3) African Fountain Grass control at Belconnen

Eradiation is usually only feasible for a new weed incursion. Another case where eradication is possible is with weed species that have short-lived seed and there is no re-infestation from other areas, so the seed bank can be exhausted within a relatively short period of time.

Decision Matrix 1 – Determining Weed Management Priorities

		FEASIBILITY OF COORDINATED CONTROL (Control costs, Persistence, Current Distribution)				
		Negligible (113+)	Low (56-113)	Medium (31-55)	High (14-30)	Very High (<14)
WEED RISK (Invasiveness, Impact, Potential Distribution)	Negligible (< 13)	Limited action	Limited action	Limited action	Limited action	Monitor
	Low (13-38)	Limited action	Limited action	Limited action	Monitor	Monitor Protect priority sites
	Medium (39-100)	Manage sites	Manage sites	Manage sites	Protect priority sites	Contain spread
	High (101-192)	Manage weed	Manage weed	Protect priority sites	Contain spread	Destroy infestations
	Very High (192+)	Manage weed	Manage weed Protect priority sites	Contain spread	Destroy infestations	Eradication

ALERT

Source: Johnson, S. (2009) NSW Weed Risk Management System, NSW Department of Primary Industry.

Box 1- Decision Matrix – Explanatory Notes

Weed Risk Rating or Weed Danger Rating

A key question: Is a weed primarily a weed of disturbed areas (low threat) or has it the ability to invade un-disturbed native vegetation (high threat). The NSW Weed Risk Management System measures invasiveness and also impacts, potential distribution & feasibility of control.

The assessment looks at many aspects of weed risk to the environment, for example:

Invasiveness: Can the weed invade dense vegetation or does it need moderate disturbance? Does it spread over long distances?

Impacts: Does it dominate other plants? Does it prevent plant germination? Does it affect fire regimes? Is it poisonous? Does it alter soil nutrients? Does it prevent access?

Potential distribution: What percentage of land use is suitable?

Table 3 (below) lists the weed risks for a range of environmental weeds. The higher risk ones are the most often controlled in the ACT.

The risk ratings and feasibility of control guide whether a weed is considered for listing as a Pest Plant under the Pest Plants and Animals Act 2005 (ACT).

Feasibility of Control

The cost of control, persistence of the weed and current distribution determines the feasibility of coordinated control. This also helps set priorities because it directs efforts to where the best return can be gained for control effort. It takes into account where a weed is on the Invasion Curve. Controlling new infestations of high priority weeds (eradication and containment phase of the Invasion Curve) receives a higher priority than control of a high priority weed that is already widespread in an area (asset based protection phase of the Invasion Curve). Examples of management strategies are listed below:

Limited action: Spot spraying around recreation areas where there is a high disturbance.

Monitor: Photo-point of Capeweed at the Mt Majura Hoary Sunray herbfield.

Monitor & Protect priority sites: Spot-spraying Capeweed that is invading a wildflower herbfield.

Manage sites: Exclude vehicle traffic from a Paterson's Curse infestation when in seed.

Protect priority sites: Spot spraying Paterson's Curse that has invaded a wildflower site.

Contain spread: Controlling Serrated Tussock on hill sides, drainage lines and boundaries.

Manage weed: African Lovegrass control along fire trails from NSW that run up to the ACT section of the southern Clear Range.

Manage weed & Protect priority sites: African Lovegrass control adjacent to grazing properties along the Murrumbidgee River Corridor.

Destroy infestations: Spot spraying all the Serrated Tussock in a reserve.

Eradication: Mexican Feather Grass control at Bendora Dam.

Priority Sites (Examples)⁴

Rare or threatened ecological communities & diverse areas of native vegetation

Yellow Box-Red Gum Tableland Grassy Woodland, Tableland Grasslands, Snow Gum-Candle Bark Tableland Woodland, Montane & Sub-Alpine Bog (due to damage from 2003 fires), Subalpine Herbfield (at risk from global warming), Alpine Ash Montane Tall Forest (due to losses in 2003 fires), Brown Barrel Montane Forest (more common outside of ACT) and Black Mountain, Aranda Bushland, Gossan Hill, Bruce Ridge & Gungahlin Hill Nature Reserves (nature reserves with high orchid diversity).

Habitat for rare or threatened species

Glossy Black Cockatoos that feed in Drooping She-Oak Tableland Woodland, Namadgi Argyle Apple Eucalypts at Blue Gum Hill, Australian Anchor Plants in the Lower Molonglo River Nature Reserve, Yellow-bellied Glider & Powerful Owl habitat in Montane forests, ACT Spider Orchids at Mt Majura Nature Reserve, Small Purple Pea at Mt Taylor Nature Reserve, Button Wrinklewort habitat at Red Hill Nature Reserve, Diamond Firetail & Hooded Robin habitat at Googong Foreshores Reserve, Smoky Mouse habitat in Yellow Kunzea-Namadgi Tea Tree Sub-alpine Dry Shrubland, Brindabella Grevillea habitat in Namadgi National Park

Large areas of native vegetation

- Large areas of a particular vegetation community are generally more diverse and resilient. This gives them a high conservation value. Examples are Namadgi National Park & the large nature reserves, eg. Tidbinbilla, Black Mountain, Mt Ainslie-Majura & Bullen Range.
- Large areas of a particular vegetation community also have a higher conservation value than small isolated areas of the same vegetation community. For example: Crace Grasslands Nature Reserve versus Black St Yarralumla Grassland.

Water catchments

Our conservation reserves not only protect biodiversity but are also one of the keystone 'industries' in the ACT – the water production industry. The Corin, Bendora & Cotter Dams (Cotter River), Googong Dam (Queanbeyan River), and Murrumbidgee intake produce millions of dollars worth of drinking water each year, because of the presence of ACT native vegetation managed by the ACT Parks & Conservation Service.

Productive agricultural land

Arable grazing paddocks, vineyards, cropping land, crop paddocks eg. Lucerne

⁴ Refer to ACTPCS – Conservation Research & Planning for a complete list of high conservation areas in the ACT.

Table 3 – ACT Weed Management Priorities for Conservation and Natural Environments including Waterways

Common name	Species name	C-S-R Strategy	Weed risk score	Weed risk category	Feasibility of coordinated control score	Feasibility of coordinated control category	Management Strategy	Rare or threatened species threats
Blackberry	<i>Rubus fruticosus</i> species aggregate	Competitive	379	Very High (192+)	38	Medium (31-55)	Contain spread	Mountain Swamp Gum (<i>Eucalyptus camphora</i> subsp <i>humeana</i>) at Lower Cotter Catchment. Australian Anchor Plant (<i>Discaria pubescens</i>) on the Lower Molonglo River NR
Gorse	<i>Ulex europaeus</i>	Competitive stress-tolerator	320	Very High (192+)	25	High (14-30)	Destroy infestations	Nil
Black Willow	<i>Salix nigra</i>	Competitive	316	Very High (192+)	17	High (14-30)	Destroy infestations	Nil
Alligator Weed	<i>Alternanthera philoxeroides</i>	Competitive ruderal	316	Very High (192+)	5	Very High (<14)	Eradication	Nil
Crack Willow	<i>Salix fragilis</i>	Competitive	236	Very High (192+)	27	High (14-30)	Destroy infestations	Australian Anchor Plant (<i>Discaria pubescens</i>) on the Lower Molonglo River NR
Mexican Feather Grass	<i>Nassella tenuissima</i>	Competitive stress-tolerant ruderal	236	Very High (192+)	4	Very High (<14)	Eradication	Nil
African Lovegrass	<i>Eragrostis curvula</i>	Competitive stress-tolerant ruderal	219	Very High (192+)	91	Low (56-113)	Manage weed & Protect priority sites	Small Purple Pea (<i>Swainsona recta</i>) at Mt Taylor NR
Chilean Needlegrass	<i>Nassella neesiana</i>	Competitive ruderal	208	Very High (192+)	113	Low (56-113)	Manage weed & Protect priority sites	Button Wrinklewort (<i>Rutidosia leptorrhynchoides</i>) at Red Hill NR
Serrated Tussock	<i>Nassella trichotoma</i>	Competitive stress-tolerant ruderal	202	Very High (192+)	80	Low (56-113)	Manage weed & Protect priority sites	Canberra Spider Orchid (<i>Arachnorchis actensis</i>) at Mt Majura NR
African Boxthorn	<i>Lycium ferocissimum</i>	Competitive stress-tolerator	152	High (101-192)	28	High (14-30)	Contain spread	Nil
Broom	<i>Cytisus spp</i> and <i>Genista spp</i>	Competitive stress-tolerator	147	High (101-192)	29	High (14-30)	Contain spread	Nil
Madagascan Fireweed	<i>Senecio madagascariensis</i>	Competitive ruderal	139	High (101-192)	2	Very High (<14)	Destroy infestations	Nil
Tree of Heaven	<i>Ailanthus altissima</i>	Competitive	135	High (101-192)	2	Very High (<14)	Destroy infestations	Nil
Sweet Briar	<i>Rosa rubiginosa</i>	Competitive stress tolerator	135	High (101-192)	40	Medium (31-55)	Protect priority sites	Nil

Common name	Species name	C-S-R Strategy	Weed risk score	Weed risk category	Feasibility of coordinated control score	Feasibility of coordinated control category	Management Strategy	Rare or threatened species threats
Firethorn	<i>Pyracantha spp.</i>	Competitive	135	High (101-192)	24	High (14-30)	Contain spread	Nil
Hawthorn	<i>Crataegus monogyna</i>	Competitive	135	High (101-192)	17	High (14-30)	Contain spread	Nil
Black Alder	<i>Alnus glutinosa</i>	Competitive	135	High (101-192)	2	Very High (<14)	Destroy infestations	Nil
St John's Wort	<i>Hypericum perforatum</i>	Competitive stress-tolerant ruderal	126	High (101-192)	53	Medium (31-55)	Protect priority sites	Button Wrinklewort (<i>Rutidosia leptorrhynchoides</i>) at Red Hill NR
Spanish Heath	<i>Erica lusitanica</i>	Competitive	124	High (101-192)	7	Very High (<14)	Destroy infestations	Nil
Yellow Bamboo	<i>Phyllostachys aurea</i>	Competitive	118	High (101-192)	4	Very High (<14)	Destroy infestations	Nil
Cootamundra Wattle	<i>Acacia baileyana</i> #	Competitive stress tolerator	108	High (101-192)	21	High (14-30)	Contain spread	Nil
Cotoneaster	<i>Cotoneaster glaucophyllus</i>	Competitive	90	Medium (39-100)	24	High (14-30)	Protect priority sites	Nil
Bathurst Burr	<i>Xanthium spinosum</i>	Competitive ruderal	73	Medium (39-100)	3	Very High (<14)	Contain spread	Nil
Nodding Thistle	<i>Carduus nutans subsp. nutans</i>	Competitive stress-tolerant ruderal	73	Medium (39-100)	13	Very High (<14)	Contain spread	Nil
WA Bluebell Creeper	<i>Sollya heterophylla</i> #	Competitive stress tolerator	67	Medium (39-100)	2	Very High (<14)	Contain spread	Nil
Sulphur Cinquefoil	<i>Potentilla recta</i>	Competitive stress tolerator	67	Medium (39-100)	2	Very High (<14)	Contain spread	Nil
Periwinkle	<i>Vinca major</i>	Competitive ruderal	56	Medium (39-100)	27	High (14-30)	Protect priority sites	Nil
European Nettle Tree	<i>Celtis australis</i>	Competitive	56	Medium (39-100)	1	Very High (<14)	Contain spread	Nil
Verbascum	<i>Verbascum thapsus</i>	Competitive stress-tolerant ruderal	51	Medium (39-100)	24	High (14-30)	Protect priority sites	Nil
Paterson's Curse	<i>Echium plantagineum</i>	Competitive ruderal	44	Medium (39-100)	40	Medium (31-55)	Manage sites	Nil
Prickly Pear	<i>Opuntia stricta</i>	Competitive ruderal	44	Medium (39-100)	4	Very High (<14)	Contain spread	Nil
Saffron Thistle	<i>Carthamus lanatus</i>	Competitive stress-tolerant ruderal	44	Medium (39-100)	57	Low (56-113)	Manage sites	Concern over impact on Grassland Earless Dragons at Jerrabomberra Grasslands NR
Rosemary Grevillea	<i>Grevillea rosmarinifolia</i> #	Stress tolerator	42	Medium (39-100)	1	Very High (<14)	Contain spread	Nil
Common Yarrow	<i>Achillea millefolium</i>	Competitive ruderal	38	Low (13-38)	3	Very High (<14)	Monitor & Protect priority sites	Nil

Common name	Species name	C-S-R Strategy	Weed risk score	Weed risk category	Feasibility of coordinated control score	Feasibility of coordinated control category	Management Strategy	Rare or threatened species threats
Gazania	<i>Gazania linearis</i>	Competitive ruderal	37	Low (13-38)	3	Very High (<14)	Monitor & Protect priority sites	Nil
Scotch Thistle	<i>Onopordum acanthium</i>	Competitive ruderal	34	Low (13-38)	3	Very High (<14)	Monitor & Protect priority sites	Nil
Hemlock	<i>Conium maculatum</i>	Competitive ruderal	34	Low (13-38)	76	Low (56-113)	Limited action	Nil
Capeweed	<i>Arctotheca calendula</i>	Ruderal	29	Low (13-38)	81	Low (56-113)	Limited action	Monitor impact on Hoary Sunrays at Mt Majura NR
Horehound	<i>Marrubium vulgare</i>	Ruderal	15	Low (13-38)	17	High (14-30)	Monitor	Nil

Notes:

- # Native plant that is not indigenous to the ACT.
- The C-S-R Strategy is from Grime's theory of plant strategies. See Booth et al (2010) Invasive Plant Ecology in Natural and Agricultural Systems, Cambridge University Press.
- Not all of the invasive weeds controlled in the ACT are listed in this table.

The Importance of follow-up weed control

Follow-up environmental weed control is an essential part of the maintenance of our natural areas. If there is no follow-up control then the cost of future work to maintain an area greatly increases. There are weed seed banks in the soil that germinate and produce new weeds. These young weeds have to be controlled before they produce seed, otherwise you have wasted the resources spent controlling the original environmental weed infestation. Therefore priority will be given to follow-up control work.

Weed Infestations, Management Strategies and Measuring Success

There will always be more weed infestations than resources to tackle them, so there has to be prioritisation of control work. Table 3 (above) helps to set priorities and management strategies. High priority sites with the highest risk or highest danger rating weeds are the most important areas for weed management. Appendix 1 lists the priority sites (usually high conservation value areas and adjoining land) for invasive weed control in the ACT.

Weed cover targets are set for each of the areas in Appendix 1. Photo monitoring points and mapping are used to measure progress in reducing weed cover to the target level. The strictest target is set at Absent or Eradicated, corresponding to the 'Eradication' management strategy from Decision Matrix 1. This only applies in a few cases for very high risk new weed incursions that have not had a chance to build up a large seed bank.

Table 4 – WONS Density Classes & Descriptions

Classes	Description	Percentage cover
Absent or Eradicated	Not detected in the area	0 %
Occasional & Localised	Scattered individual plants confined to limited areas of the block of land	< 1 %
Occasional & Widespread	Scattered individual plants across the block of land	1 to 10%
Common & Localised	Scattered patches with isolated plants interspersed confined to limited areas of the block of land	11 to 50%
Common & Widespread	Scattered patches with isolated plants interspersed across the block of land	
Abundant & Localised	Large dense infestations confined to limited areas of the block of land	> 50%
Abundant & Widespread	Large dense infestations across the block of land	

A target of Occasional & Localised is set for the highest risk rating environmental weeds in high conservation value areas, where coordinated control is feasible. This corresponds to the management strategies of: 'Protect Priority Sites', 'Contain Spread', and 'Destroy Infestations'.

A target of Occasional & Widespread or Common & Localised is used for lower risk weeds at lower priority sites or areas where the feasibility of coordinated control of high or very high risk weeds is low or negligible. If there is little feasibility of coordinated control then the management strategies from Decision Matrix 1 are: 'Manage weed', 'Manage sites', 'Manage weed & Protect priority sites', 'Limited Action'. An example is African Lovegrass along the Murrumbidgee River. The Murrumbidgee River is constantly inundated with African Lovegrass seed from urban areas and upstream in NSW. So the overall target cover in this case is Occasional & Widespread or Common & Localised and the management strategy is 'Manage weed & Protect priority sites'. African Lovegrass cover will be reduced at the priority sites.

The cover or abundance of environmental weeds in an area is measured according to the categories in Table 4 (below). These classes or categories were developed by the Bureau of Rural Sciences for measuring the cover of Weeds of National Significance (WONS).

Serious Weed Infestations

There are about 31,000ha of invasive weed infestations on ACT reserved land⁵. Appendix 1 (below) lists the highest priority sites for weed control by general area or reserve name. These sites are about 70% of the total area of invasive weed infestations. Detailed maps showing where control work is done are available on request from the ACT Parks & Conservation Service, Rural Lands and Invasive Species Unit.

Appendix 1 shows the following areas need considerable work to reduce the weed cover to the 2019 target levels:

- African Lovegrass on roadsides, riparian areas, urban open space and in some woodland Canberra Nature Park reserves
- Chilean Needlegrass in urban open space, Canberra Nature Park, Stirling Ridge, Yarramundi Reach Grassland and riparian areas
- St John's Wort in Canberra Nature Park and Googong Foreshores
- Paterson's Curse in lowland woodland nature reserves and agistments
- Serrated Tussock at Kowen Forest, agistment areas and the Northern Clear Range
- Blackberry in the Lower Cotter Catchment, Northern Namadgi National Park, parts of the Murrumbidgee River and other old forestry areas
- Nodding Thistle in the grassy valleys of Southern Namadgi National park
- Pest Willows and Blackberry along the Molonglo River

Control of Weeds of National Significance (WONS) is clearly a priority as is shown by the high number of projects directed towards WONS control (Blackberry, Willows, Serrated Tussock & Chilean Needlegrass). The ACT government is committed to these nationally agreed weed control priorities.

The lowland native grasslands and woodlands of Canberra Nature Park and the Murrumbidgee River Corridor have a much higher proportion of their areas affected by environmental weeds compared to Namadgi National Park and Tidbinbilla Nature Reserve. The reason is that these lowland grassy vegetation types are more prone to invasion by environmental weeds. The inter-tussock spaces in the grassy understorey (normally filled by wildflowers or other annuals) allow some of the worst environmental weeds to easily establish and spread. As a result when budgets are allocated to the projects, the lowland woodland and grassland reserves receive a disproportionate share of resources compared to the larger forested conservation reserves.

⁵ The invasive weed infestations are defined as: areas with weeds that have a medium or higher risk or danger rating, where their cover abundance is greater than 'Occasional & Localised'. Reserved land includes: nature reserves, national parks, agistments, rural roadside vegetation, equestrian trails, forestry reserves and other conservation reserves. The total area of invasive weed infestations is not a static number as it changes with seasonal conditions and can increase when a new weed incursion occurs.

Budgets for Environmental Weed Control

Most of the environmental weed infestations in Appendix 1 will require resources over a number of years – some every year while others only periodically. Each financial year budgets are allocated to control the environmental weed infestations listed in Appendix 1 and new government initiatives. On ACT government land, the list of funded weed control projects and the Park Ranger on-ground weed control work for the coming financial year is finalised in early May.⁶

How many resources are needed to meet the 2019 targets in Appendix 1? This is difficult to estimate as there a lot of environmental variables in play. The estimates below have been made based on progress from weed control in previous years. The resources required for land managed by the ACT Parks & Conservation Service and TAMS – City Services are:

- (i) Current follow-up control areas total about 9,000ha. In these areas about 2,000 to 3,000ha of control work is undertaken per year. A high proportion of this is ongoing due to re-infestation. Re-infestation is due to soil stored seed or seed that blows, washes or carries in from surrounding areas. The resources required for this work are:
 - An average of \$1.5m of environmental weed control expenditure per year
 - The equivalent of two to three Park Rangers working full time on environmental weed control (supervising contractors and on-ground weed control).
 - On-going work of Parkcare volunteers who complement the work of the Park Rangers
 - This level of resourcing is within current capacity constraints (number of contractors, Park Rangers and Parkcarers).
- (ii) New initiatives to tackle the remaining 22,000ha of infestations
 - \$1 to 2m per year depending on the depending on the invasive weed issue tackled. Plus an allowance for follow-up control in the following years. This would allow an additional 1,000ha to 2,000ha of infestations to be treated.
 - A budget for additional field staff to undertake the work and supervise the additional contractors is required, as current staff are already at capacity with existing follow-up control areas.

Of course if there is large scale disturbance such as a major fire or if there are serious new environmental weed incursions then the amount of resources required to meet the targets will be greater.

Once a target is met there still needs to be on-going or follow-up weed control work, but at a reduced level. This is because re-infestation readily occurs in already treated areas from soil stored invasive weed seed. In addition wind, water, animals and vehicles often re-introduce invasive weed seed to the treated areas. So many projects should be regarded as long term conservation maintenance work. They do not require the same amount of resources as the initial environmental weed control, but need a smaller long term commitment. This follow-up work protects the native vegetation by preventing the weed infestation from growing back to the original size or cover.

⁶ The list is available from the ACT Parks & Conservation Service once weed control budgets have been confirmed.

Appendix 1 – Priority Sites for Invasive Weed Control⁷

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP1	ACT Parks and Conservation Service	Cotter	Agistment area	Margules agistment		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP2	ACT Parks and Conservation Service	Cotter	Agistment area	Lions Youthhaven		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP3	ACT Parks and Conservation Service	Cotter	Agistment area	Ingeldene		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP4	ACT Parks and Conservation Service	Cotter	Agistment area	Tharwa agistments		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP5	ACT Parks and Conservation Service	Cotter	Former ACT Forests land	Blewitts		Blackberry	Abundant & Widespread		Occasional & Widespread or Common & Localised	
eWOP6	ACT Parks and Conservation Service	Cotter	Former ACT Forests land	Miowera		Blackberry	Abundant & Localised		Occasional & Localised	
eWOP7	ACT Parks and Conservation Service	Cotter	Former ACT Forests land	Pierces Creek		Blackberry	Abundant & Widespread		Occasional & Widespread or Common & Localised	
eWOP8	ACT Parks and Conservation Service	Cotter	Former ACT Forests land	Oakey Creek		Blackberry	Abundant & Localised		Occasional & Widespread or Common & Localised	
eWOP9	ACT Parks and Conservation Service	Cotter	Molonglo River	Lower Molonglo	Coppin's Crossing to Murrumbidgee	Blackberry	Common & Widespread		Occasional & Localised	
eWOP10	ACT Parks and Conservation Service	Cotter	Molonglo River	Lower Molonglo	Coppin's Crossing to Murrumbidgee	African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP11	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Gigerline	Below Ingledene	Woody weeds	Occasional & Widespread		Occasional & Localised	
eWOP12	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Former ACT Forests land	Brindabella Rd sites, MRC broom folder sites, Pierces Creek, Condor Creek, Uriarra Rd, Cotter Bend	Broom	Common & Localised		Occasional & Localised	
eWOP13	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Murrumbidgee	Fairvale	Blackberry	Occasional & Widespread		Occasional & Localised	

⁷

There are many other smaller infestations of environmental weeds that are controlled as soon as they are detected by Parkcarers and Park Rangers. This is valuable work as it prevents such infestations ending up on the list in Appendix 1. In addition there are many lower priority infestations that are not listed in Appendix 1.

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP14	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Murrumbidgee	Forsters	Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP15	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Former ACT Forests land	Ingledene	Serrated Tussock	Occasional & Localised		Occasional & Localised	
eWOP16	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Bullen Range	Kambah Pool, Lower slopes	Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP17	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Murrumbidgee	Tharwa Sandwash to Woodstock	Willows	Occasional & Widespread		Occasional & Localised	
eWOP18	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Murrumbidgee	Opposite Howieson lease	African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP19	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Murrumbidgee	Red Rocks, Pine Island, Tharwa Sandwash to Point Hut	African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP20	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Murrumbidgee	Red Rocks	Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP21	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Swamp Creek	Swamp Ck	Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP22	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Recreation areas	Uriarra East, Cotter Bend, Tharwa, Tharwa Sandwash, Kambah Pool, Pine Island, Cotter campground, Uriarra, Walking trails, Murray's Corner & North Namadgi NP	Broadleaf	Common & Widespread		Occasional & Widespread or Common & Localised	Includes Yarrow
eWOP23	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Woodstock		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP24	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Point Hut		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP25	ACT Parks and Conservation Service	Cotter	Namadgi NP	North Namadgi	Cotter River from Bushrangers Ck to Burke Ck	Willows	Occasional & Widespread		Occasional & Localised	
eWOP26	ACT Parks and Conservation Service	Cotter	Namadgi NP	North Namadgi	Moonlight Hollow, Gravel, Bendora Dam, Pipeline, Old Mill, Blundell's Creek and Warks Rds	Blackberry	Occasional & Widespread		Occasional & Localised	

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP27	ACT Parks and Conservation Service	Cotter	Namadgi NP	North Namadgi	Mt Franklin Rd-Chalet Rd	Other weeds	Common & Localised		Occasional & Widespread or Common & Localised	Sweet Vernal Grass
eWOP28	ACT Parks and Conservation Service	Cotter	Namadgi NP	Blue Range	Sherwood and across to park boundaries	Blackberry	Abundant & Widespread		Occasional & Widespread or Common & Localised	
eWOP29	ACT Parks and Conservation Service	Cotter	Molonglo River	Lower Molonglo	Coppin's Crossing to Murrumbidgee	Willow	Occasional & Widespread		Occasional & Localised	
eWOP30	ACT Parks and Conservation Service	Cotter	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Kambah Pool, Cotter, Mt Stromlo Obs, Uriarra, Coppins Crossing to William Hovell Dr, Brindabella, Fairlight, Mountain Ck	African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP31	ACT Parks and Conservation Service	Cotter	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Kambah Pool, Cotter, Mt Stromlo Obs, Uriarra, Coppins Crossing, Brindabella, Fairlight, Mountain Ck	St John's Wort	Occasional & Widespread		Occasional & Widespread or Common & Localised	
eWOP32	ACT Parks and Conservation Service	Googong	Googong FS	Western Foreshores	Bald Hill, Tin Hut, London Bridge, Chelsea, Ranger's House to Shannon's Inlet	St John's Wort	Common & Widespread		Occasional & Localised	
eWOP33	ACT Parks and Conservation Service	Googong	Googong FS	Western Foreshores	Chelsea-London Bridge	Serrated Tussock	Common & Localised		Occasional & Localised	Western Management Trail (from machinery shed to bulb farm)
eWOP34	ACT Parks and Conservation Service	Googong	Googong FS	Western Foreshores	London Bridge to Tin Hut	Broadleaf	Common & Localised		Occasional & Localised	Verbascum
eWOP35	ACT Parks and Conservation Service	Googong	Googong FS	Western Foreshores	Shannons, Tin Hut	Woody Weeds	Common & Localised		Occasional & Localised	Sweet Briar
eWOP36	ACT Parks and Conservation Service	Googong	Kowen Forest	Kowen Forest	Neighbour boundaries, on fire roads, East & Sutton Rd Powerline and adjacent areas, Weetalbah	Serrated Tussock	Common & Widespread		Occasional & Widespread or Common & Localised	Use Taskforce with a Round-up Biactive spike
eWOP37	ACT Parks and Conservation Service	Googong	Kowen Forest	Kowen Forest	Opposite Sutton Rd	St John's Wort	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP38	ACT Parks and Conservation Service	Googong	Kowen Forest	Kowen Forest	Weetalabah Reserve, Blue Tiles to Sutton Rd, Sparrow Hill Yellow Box Reserve	Blackberry	Common & Localised		Occasional & Localised	
eWOP39	ACT Parks and Conservation Service	Googong	Kowen Forest	Molonglo Gorge Forest Reserve	Weetalabah Reserve, Molongo Gorge Woodland	St John's Wort	Common & Widespread		Occasional & Localised	

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP40	ACT Parks and Conservation Service	Googong	Kowen Forest	Sparrow Hill Yellow Box Reserve		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP41	ACT Parks and Conservation Service	Googong	Kowen Forest	Sparrow Hill Yellow Box Reserve		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP42	ACT Parks and Conservation Service	Lower Cotter	Lower Cotter Catchment	Lower Cotter Catchment Reserve	Lower Cotter Catchment Other sites	Blackberry	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP43	ACT Parks and Conservation Service	Lower Cotter	Lower Cotter Catchment	Lower Cotter Catchment Reserve	Lower Cotter Catchment Other sites	Woody Weeds	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP44	ACT Parks and Conservation Service	Lower Cotter	Lower Cotter Catchment	Lower Cotter Catchment Reserve	Tidbinbilla- Namadgi Interface	Blackberry	Common & Widespread		Occasional & Localised	
eWOP45	ACT Parks and Conservation Service	Lower Cotter	Lower Cotter Catchment	Lower Cotter Catchment Reserve	Tidbinbilla- Namadgi Interface	Woody Weeds	Occasional & Widespread		Occasional & Localised	
eWOP46	ACT Parks and Conservation Service	Lower Cotter	Lower Cotter Catchment	Lower Cotter Catchment Reserve	Uriarra Block	Blackberry	Abundant & Widespread		Occasional & Widespread or Common & Localised	
eWOP47	ACT Parks and Conservation Service	Lower Cotter	Lower Cotter Catchment	Lower Cotter Catchment Reserve	Uriarra Block	Woody Weeds	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP48	ACT Parks and Conservation Service	Namadgi	Agistment area	Williamsdale TSR		African Lovegrass	Abundant & Localised		Occasional & Widespread or Common & Localised	
eWOP49	ACT Parks and Conservation Service	Namadgi	Agistment area	Williamsdale TSR		St John's Wort	Abundant & Localised		Occasional & Widespread or Common & Localised	
eWOP50	ACT Parks and Conservation Service	Namadgi	Leased land	Northern Clear Range	Blundell's Dam to Namadgi gate, Exposed hill tops, Boundary with NSW	Serrated Tussock	Common & Widespread		Occasional & Localised	
eWOP51	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Blue Gum Creek Tributary	Woody Weeds	Occasional & Localised		Occasional & Localised	Sweet Briar at 676325 – 6065698
eWOP52	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Bushfolds Flat, Mt Tennant, Naas Valley, Orroral Valley, Glendale	Woody Weeds	Occasional & Widespread		Occasional & Localised	
eWOP53	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Clear Range – Forest Hut area, Mt Clear dozer tracks and rake hoe trails from Gap Ck fire	African Lovegrass	Common & Localised		Occasional & Localised	

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP54	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Frank & Jack's Hut, Brandy Flat, Glendale, Mt Clear Pound, Gudgenby Valley, Orroral Valley	Broadleaf	Common & Widespread		Occasional & Localised	Verbascum, Nodding Thistle, Paterson's Curse, Viper's Bugloss
eWOP55	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Gudgenby River, Bogong Swamp, Hospital Ck	Willows	Common & Localised		Occasional & Localised	
eWOP56	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Gudgenby Valley, Boboyan Valley, Boboyan Pines, Blundells Dam to Rowley Gate, Gibraltar	Woody Weeds	Occasional & Widespread		Occasional & Localised	
eWOP57	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Hospital Creek, Glendale, Honeysuckle, Corin Dam, Orroral Valley, Honeysuckle-Bushfolds, Naas Valley, Naas TSR, Rolley's lease, Mt Tennant walking track	St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP58	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Middle Creek, Frank & Jacks Hut, Rendezvous Ck, Grassy Ck Bridge, Ranger HQ, Glendale Depot, Boboyan Rd & Orroral Valley	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP59	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Mt Clear Camp Ground, Bulls Flat, Sam's Ck, Grassy Ck, Campgrounds, Trail heads	Other weeds	Common & Widespread		Occasional & Widespread or Common & Localised	Sweet Vernal Grass
eWOP60	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Naas Valley, Orroral Valley, Glendale & other Namadgi Folder sites	Serrated Tussock	Occasional & Localised		Occasional & Localised	
eWOP61	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Mt Tennant lower slopes, Naas TSR	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP62	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Rendezvous, Middle & Bogong Creeks, Boboyan & Boboyan Pines	Blackberry	Common & Localised		Occasional & Localised	
eWOP63	ACT Parks and Conservation Service	Namadgi	Namadgi NP	South Namadgi	Westerman's Hut area, Naas Valley, Brayshaw's Hut, Upper Cotter, Rendezvous Ck, Boboyan Rd, Grassy Ck	Broom	Occasional & Localised		Occasional & Localised	

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP64	ACT Parks and Conservation Service	Namadgi	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Monaro Hwy South, Angle Crossing, Smith's, Sunshine, Naas, Apollo, Top Naas, Boboyan, Orroral	African Lovegrass	Occasional & Widespread		Occasional & Widespread or Common & Localised	
eWOP65	ACT Parks and Conservation Service	Namadgi	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Monaro Hwy South, Angle Crossing, Smith's, Sunshine, Naas, Apollo, Top Naas, Boboyan, Orroral	St John's Wort	Occasional & Widespread		Occasional & Widespread or Common & Localised	
eWOP66	ACT Parks and Conservation Service	North	Agistment area	Mulligan's Flat G1, G2		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP67	ACT Parks and Conservation Service	North	Agistment area	Molonglo	Near old Coonan lease	Broadleaf	Common & Localised		Occasional & Localised	Bathurst Burr
eWOP68	ACT Parks and Conservation Service	North	Agistment area	Equestrian trails		Broadleaf	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP69	ACT Parks and Conservation Service	North	Agistment area	One Tree Hill		Serrated Tussock	Common & Widespread		Occasional & Localised	
eWOP70	ACT Parks and Conservation Service	North	Agistment area	Carmody Eucalypt Plantation		Serrated Tussock	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP71	ACT Parks and Conservation Service	North	Agistment area	Woolshed Creek		Willows	Abundant & Localised		Occasional & Localised	
eWOP72	ACT Parks and Conservation Service	North	Agistment area	Mulligan's Flat G1, G2		Woody Weeds	Occasional & Localised		Occasional & Localised	
eWOP73	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		African Lovegrass	Common & Widespread		Occasional & Localised	
eWOP74	ACT Parks and Conservation Service	North	Canberra Nature Park	Mullangarri		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP75	ACT Parks and Conservation Service	North	Canberra Nature Park	Gungaharra		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP76	ACT Parks and Conservation Service	North	Canberra Nature Park	Lyneham Ridge		Broadleaf	Abundant & Localised		Occasional & Widespread or Common & Localised	Paterson's Curse
eWOP77	ACT Parks and Conservation Service	North	Canberra Nature Park	Watson Woodlands		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP78	ACT Parks and Conservation Service	North	Canberra Nature Park	Kama		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP79	ACT Parks and Conservation Service	North	Canberra Nature Park	Majura Grasslands		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP80	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		Broadleaf	Common & Widespread		Occasional & Localised	Paterson's Curse
eWOP81	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		Chilean Needle Grass	Abundant & Localised		Occasional & Localised	
eWOP82	ACT Parks and Conservation Service	North	Canberra Nature Park	Watson Woodlands		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP83	ACT Parks and Conservation Service	North	Canberra Nature Park	Goorooyarroo		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP84	ACT Parks and Conservation Service	North	Canberra Nature Park	Mulligan's Flat		Serrated Tussock	Occasional & Localised		Occasional & Localised	
eWOP85	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP86	ACT Parks and Conservation Service	North	Canberra Nature Park	Mulangarri		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP87	ACT Parks and Conservation Service	North	Canberra Nature Park	Gungaderra		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP88	ACT Parks and Conservation Service	North	Canberra Nature Park	O'Connor Ridge		St John's Wort	Common & Localised		Occasional & Localised	
eWOP89	ACT Parks and Conservation Service	North	Canberra Nature Park	Bruce Ridge		St John's Wort	Occasional & Localised		Occasional & Localised	
eWOP90	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		St John's Wort	Abundant & Localised		Occasional & Localised	
eWOP91	ACT Parks and Conservation Service	North	Canberra Nature Park	The Pinnacle		St John's Wort	Occasional & Localised		Occasional & Localised	
eWOP92	ACT Parks and Conservation Service	North	Canberra Nature Park	Aranda Bushland	Adjacent to Horse paddock	Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP93	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Majura	Antil St to reservoir fire trail	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP94	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Majura	Behind the old Aust. Heritage Village site	St John's Wort	Common & Localised		Occasional & Localised	
eWOP95	ACT Parks and Conservation Service	North	Canberra Nature Park	Black Mountain	Black Mountain (old Depot block), Black Mountain Summit carpark	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP96	ACT Parks and Conservation Service	North	Canberra Nature Park	O'Connor Ridge	Dryandra St side	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP97	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Ainslie	Gun club area, fire trail junctions, powerline easements, old Phillip Ave tip	Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP98	ACT Parks and Conservation Service	North	Canberra Nature Park	The Pinnacle	Near entrances and slashed tracks	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP99	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Ainslie	Near old Phillip Ave tip, near Old TSR	Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP100	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Majura	Opposite Federal Highway	Broadleaf	Common & Localised		Occasional & Localised	Capeweed
eWOP101	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Majura	Parkcare group has mapped locations	Serrated Tussock	Occasional & Localised		Occasional & Localised	
eWOP102	ACT Parks and Conservation Service	North	Canberra Nature Park	Black Mountain	Seismic quarry and creek, top carparks	Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP103	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		Blackberry	Common & Localised		Occasional & Localised	Above Dryandra St
eWOP104	ACT Parks and Conservation Service	North	Canberra Nature Park	Bruce Ridge		Blackberry	Common & Localised		Occasional & Localised	Above Dryandra St
eWOP105	ACT Parks and Conservation Service	North	Canberra Nature Park	O'Connor Ridge		Blackberry	Common & Localised		Occasional & Localised	Above Dryandra St
eWOP106	ACT Parks and Conservation Service	North	Canberra Nature Park	Black Mountain		Blackberry	Occasional & Localised		Occasional & Localised	Above Dryandra St, and near Parkes Way running up the south facing creeks
eWOP107	ACT Parks and Conservation Service	North	Canberra Nature Park	Goorooyarroo		Broadleaf	Occasional & Localised		Occasional & Localised	Paterson's Curse

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eWOP108	ACT Parks and Conservation Service	North	Canberra Nature Park	Mulligan's Flat		Broadleaf	Occasional & Localised		Occasional & Localised	Paterson's Curse
eWOP109	ACT Parks and Conservation Service	North	Canberra Nature Park	The Pinnacle		Broadleaf	Common & Localised		Occasional & Localised	Horehound, Thistles
eWOP110	ACT Parks and Conservation Service	North	Canberra Nature Park	Aranda Bushland		Broadleaf	Common & Localised		Occasional & Localised	Capeweed
eWOP111	ACT Parks and Conservation Service	North	Canberra Nature Park	Crace		Chilean Needle Grass	Occasional & Widespread		Occasional & Localised	
eWOP112	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Majura		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP113	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Ainslie		St John's Wort	Common & Localised		Occasional & Localised	
eWOP114	ACT Parks and Conservation Service	North	Canberra Nature Park	Crace		St John's Wort	Common & Localised		Occasional & Localised	
eWOP115	ACT Parks and Conservation Service	North	Canberra Nature Park	Gungaharra		St John's Wort	Common & Localised		Occasional & Localised	
eWOP116	ACT Parks and Conservation Service	North	Canberra Nature Park	Kama		St John's Wort	Common & Localised		Occasional & Localised	
eWOP117	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Painter		St John's Wort	Common & Localised		Occasional & Localised	
eWOP118	ACT Parks and Conservation Service	North	Canberra Nature Park	Harcourt Hill		St John's Wort	Common & Localised		Occasional & Localised	
eWOP119	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Ainslie		Woody Weeds	Occasional & Widespread		Occasional & Localised	Includes Mt Ainslie Mahonia infestation at Canberra 1:25,000 973-956.
eWOP120	ACT Parks and Conservation Service	North	Canberra Nature Park	Mt Pleasant		Woody Weeds	Common & Widespread		Occasional & Localised	
eWOP121	ACT Parks and Conservation Service	North	Canberra Nature Park	Duntroon Dairy		Broadleaf	Common & Widespread		Occasional & Widespread or Common & Localised	

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP122	ACT Parks and Conservation Service	North	Former ACT Forests land	Majura Pines		Serrated Tussock	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP123	ACT Parks and Conservation Service	North	Former ACT Forests land	Majura Pines		Woody Weeds	Abundant & Localised		Occasional & Widespread or Common & Localised	Tree of Heaven
eWOP124	ACT Parks and Conservation Service	North	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Piallago, Sutton, Kowen Forest, Kings Hwy, Oaks Estate, Mountain, Nimrod, Majura, McIntosh, Wells Station, Morrisett, Gundaroo Wallaroo, Jerramalee, Stockdill Dr, Mt Majura Summit Rd	Chilean Needle Grass	Common & Localised		Occasional & Widespread or Common & Localised	
eWOP125	ACT Parks and Conservation Service	North	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Piallago, Sutton, Kowen Forest, Kings Hwy, Oaks Estate, Mountain, Nimrod, Majura, McIntosh, Wells Station, Morrisett, Gundaroo Wallaroo, Jerramalee, Stockdill Dr, Old Majura Rd, Addison Rd	St John's Wort	Common & Localised		Occasional & Widespread or Common & Localised	
eWOP126	ACT Parks and Conservation Service	North	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Piallago, Sutton, Kowen Forest, Kings Hwy, Oaks Estate, Mountain, Nimrod, Majura, McIntosh, Wells Station, Morrisett, Gundaroo Wallaroo, Victoria St, Jerramalee, Stockdill Dr	African Lovegrass	Common & Localised		Occasional & Widespread or Common & Localised	
eWOP127	ACT Parks and Conservation Service	South	Agistment area	Canberra Ave Agistments	Amtech, Tennant St, Canberra Ave	Serrated Tussock	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP128	ACT Parks and Conservation Service	South	Agistment area	Equestrian trails	Urambill Hills to McQuoids Hill	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP129	ACT Parks and Conservation Service	South	Agistment area	Mugga Lane agistment		Broadleaf	Common & Widespread		Occasional & Localised	Paterson's Curse

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP130	ACT Parks and Conservation Service	South	Agistment area	Urambi Hills agistment		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP131	ACT Parks and Conservation Service	South	Agistment area	Tennant St Fhyswick		Chilean Needle Grass	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP132	ACT Parks and Conservation Service	South	Agistment area	Upper Jerrabomberra Creek		Willows	Occasional & Widespread		Occasional & Localised	Includes flood debris
eWOP133	ACT Parks and Conservation Service	South	Canberra Nature Park	Isaacs Ridge	Across to East O'Malley and Mt Mugga-Mugga	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP134	ACT Parks and Conservation Service	South	Canberra Nature Park	Canberra Ave Agistments	Amtech, Tennant St, Canberra Ave	St John's Wort	Common & Localised		Occasional & Localised	
eWOP135	ACT Parks and Conservation Service	South	Canberra Nature Park	Rob Roy	Charcoal Paddock	Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP136	ACT Parks and Conservation Service	South	Canberra Nature Park	Coleman Ridge	Mt Arawang	Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP137	ACT Parks and Conservation Service	South	Canberra Nature Park	Coleman Ridge	Mt Arawang	Blackberry	Occasional & Localised		Occasional & Localised	
eWOP138	ACT Parks and Conservation Service	South	Canberra Nature Park	Red Hill	Mt Davidson slopes and saddle	Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP139	ACT Parks and Conservation Service	South	Canberra Nature Park	Mt Taylor NR	Summit firetrail	Serrated Tussock	Occasional & Localised		Occasional & Localised	
eWOP140	ACT Parks and Conservation Service	South	Canberra Nature Park	Red Hill		African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP141	ACT Parks and Conservation Service	South	Canberra Nature Park	Farrer Ridge		African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP142	ACT Parks and Conservation Service	South	Canberra Nature Park	Jerrabomberra Grasslands		African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP143	ACT Parks and Conservation Service	South	Canberra Nature Park	Oakey Hill		African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP144	ACT Parks and Conservation Service	South	Canberra Nature Park	Mt Taylor		African Lovegrass	Common & Localised		Occasional & Localised	

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eWOP145	ACT Parks and Conservation Service	South	Canberra Nature Park	Tuggeranong Hill		African Lovegrass	Common & Widespread		Occasional & Localised	
eWOP146	ACT Parks and Conservation Service	South	Canberra Nature Park	Urambi Hills		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP147	ACT Parks and Conservation Service	South	Canberra Nature Park	Coleman Ridge		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP148	ACT Parks and Conservation Service	South	Canberra Nature Park	Wanniassa Hills		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP149	ACT Parks and Conservation Service	South	Canberra Nature Park	Red Hill		Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP150	ACT Parks and Conservation Service	South	Canberra Nature Park	Oakey Hill		Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP151	ACT Parks and Conservation Service	South	Canberra Nature Park	Narrabundah Hill		Blackberry	Common & Widespread		Occasional & Localised	
eWOP152	ACT Parks and Conservation Service	South	Canberra Nature Park	Callum Brae		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP153	ACT Parks and Conservation Service	South	Canberra Nature Park	Urambi Hills		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP154	ACT Parks and Conservation Service	South	Canberra Nature Park	Mt Mugga-Mugga		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP155	ACT Parks and Conservation Service	South	Canberra Nature Park	Coleman Ridge		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse, Bathurst Burr
eWOP156	ACT Parks and Conservation Service	South	Canberra Nature Park	McQuoids Hill		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP157	ACT Parks and Conservation Service	South	Canberra Nature Park	Farrer Ridge		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP158	ACT Parks and Conservation Service	South	Canberra Nature Park	Wanniassa Hills		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP159	ACT Parks and Conservation Service	South	Canberra Nature Park	Jerrabomberra Grasslands		Broadleaf	Common & Localised		Occasional & Localised	Thistles and Paterson's Curse

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP160	ACT Parks and Conservation Service	South	Canberra Nature Park	Isaacs Ridge		Broadleaf	Common & Localised		Occasional & Localised	Paterson's Curse
eWOP161	ACT Parks and Conservation Service	South	Canberra Nature Park	Oakey Hill		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP162	ACT Parks and Conservation Service	South	Canberra Nature Park	Red Hill		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP163	ACT Parks and Conservation Service	South	Canberra Nature Park	Jerrabomberra Wetlands		Woody Weeds	Common & Widespread		Occasional & Localised	Black Alder, Crack Willow, Boxthorn
eWOP164	ACT Parks and Conservation Service	South	Canberra Nature Park	Jerrabomberra Wetlands		Other weeds	Common & Localised		Occasional & Localised	Mexican Waterlily
eWOP165	ACT Parks and Conservation Service	South	Canberra Nature Park	Callum Brae		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP166	ACT Parks and Conservation Service	South	Canberra Nature Park	Mt Mugga-Mugga		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP167	ACT Parks and Conservation Service	South	Canberra Nature Park	Jerrabomberra Grasslands		Serrated Tussock	Occasional & Localised		Occasional & Localised	
eWOP168	ACT Parks and Conservation Service	South	Canberra Nature Park	Isaacs Ridge		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP169	ACT Parks and Conservation Service	South	Canberra Nature Park	Red Hill		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP170	ACT Parks and Conservation Service	South	Canberra Nature Park	Mt Mugga-Mugga		St John's Wort	Common & Localised		Occasional & Localised	
eWOP171	ACT Parks and Conservation Service	South	Canberra Nature Park	Farrer Ridge		St John's Wort	Common & Localised		Occasional & Localised	
eWOP172	ACT Parks and Conservation Service	South	Canberra Nature Park	Mt Taylor		St John's Wort	Common & Localised		Occasional & Localised	
eWOP173	ACT Parks and Conservation Service	South	Canberra Nature Park	Oakey Hill		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP174	ACT Parks and Conservation Service	South	Canberra Nature Park	Mc Quioids Hill		St John's Wort	Common & Widespread		Occasional & Localised	

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eWOP175	ACT Parks and Conservation Service	South	Canberra Nature Park	Tuggeranong Hill		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP176	ACT Parks and Conservation Service	South	Canberra Nature Park	Rob Roy		St John's Wort	Common & Localised		Occasional & Localised	
eWOP177	ACT Parks and Conservation Service	South	Canberra Nature Park	Isaacs Ridge		St John's Wort	Common & Widespread		Occasional & Localised	
eWOP178	ACT Parks and Conservation Service	South	Canberra Nature Park	Wanniassa Hills		St John's Wort	Common & Localised		Occasional & Localised	
eWOP179	ACT Parks and Conservation Service	South	Canberra Nature Park	Red Hill		Woody Weeds	Occasional & Widespread		Occasional & Localised	
eWOP180	ACT Parks and Conservation Service	South	Canberra Nature Park	Isaacs Ridge		Woody Weeds	Common & Widespread		Occasional & Localised	
eWOP181	ACT Parks and Conservation Service	South	Lake Burley Griffin	Scrivener Dam to Coppins Crossing		Blackberry	Common & Widespread		Occasional & Localised	
eWOP182	ACT Parks and Conservation Service	South	Lake Burley Griffin	Scrivener Dam to Coppins Crossing		Willows	Abundant & Widespread		Occasional & Localised	
eWOP183	ACT Parks and Conservation Service	South	Molonglo River	Oaks Estate to Fhyswick		Blackberry	Abundant & Widespread		Occasional & Localised	
eWOP184	ACT Parks and Conservation Service	South	Molonglo River	Oaks Estate to Fhyswick		Willows	Abundant & Widespread		Occasional & Localised	
eWOP185	ACT Parks and Conservation Service	South	Rural leases	Rob Roy		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP186	ACT Parks and Conservation Service	South	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Monaro Highway, Mugga Lane, Narrabundah Lane, Long Gully Rd, Lanyon Dr, Canberra Ave & Woods Lane	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP187	ACT Parks and Conservation Service	South	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Monaro Hwy, Mugga Lane, Long Gully Rd, Mt Taylor Horse paddock Lane, Canberra Ave, Lanyon Dr, Woods Lane	St John's Wort	Common & Localised		Occasional & Localised	
eWOP188	ACT Parks and Conservation Service	South	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Mugga Lane, Long Gully Rd, Canberra Ave	Blackberry	Common & Localised		Occasional & Localised	

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eWOP189	ACT Parks and Conservation Service	Stromlo	Namadgi NP	North Namadgi	Bendora Dam	New weed incursions	Occasional & Localised		Nil (Eradication)	Mexican Feather Grass
eWOP190	ACT Parks and Conservation Service	Stromlo	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Horse Park Drive	New weed incursions	Occasional & Localised		Occasional & Localised	Pink Pampass Grass
eWOP191	ACT Parks and Conservation Service	Stromlo	Urban open space	Gungahlin Pond		New weed incursions	Occasional & Localised		Occasional & Localised	Giant Willowherb
eWOP192	ACT Parks and Conservation Service	Tidbinbilla	Former ACT Forests land	Jedbinbilla	Lower slopes	Blackberry	Common & Widespread		Occasional & Localised	
eWOP193	ACT Parks and Conservation Service	Tidbinbilla	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Paddy's River, Discovery, Corin, Tidbinbilla, Booroomba, Point Hut Crossing, Tharwa Dr, Freshford	African Lovegrass	Common & Localised		Occasional & Widespread or Common & Localised	
eWOP194	ACT Parks and Conservation Service	Tidbinbilla	Rural roadsides	Rural Roadsides opposite reserved land and rural leases	Paddy's River, Discovery, Corin, Tidbinbilla, Booroomba, Point Hut Crossing, Tharwa Dr, Freshford	St John's Wort	Occasional & Widespread		Occasional & Widespread or Common & Localised	
eWOP195	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Valley Floor	Internal roads adjoining Shanahan's lease, Birragai Time Trial link	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP196	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Birragai	Mushroom Rock	Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP197	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Camel Back		Blackberry	Occasional & Widespread		Occasional & Localised	
eWOP198	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Valley Floor		Blackberry	Common & Localised		Occasional & Localised	
eWOP199	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Jedbinbilla	Upper slopes	Blackberry	Common & Widespread		Occasional & Localised	
eWOP200	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Enclosures		Blackberry	Common & Localised		Occasional & Localised	
eWOP201	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Birragai		Blackberry	Common & Localised		Occasional & Localised	
eWOP202	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Valley Floor		Broadleaf	Common & Widespread		Occasional & Localised	Paterson's Curse & Verbascum

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eWOP203	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Birragai		Broadleaf	Common & Widespread		Occasional & Localised	Paterson's Curse & Verbascum
eWOP204	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Camel Back		St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP205	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Valley Floor		St John's Wort	Common & Localised		Occasional & Localised	
eWOP206	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Enclosures		St John's Wort	Common & Localised		Occasional & Localised	
eWOP207	ACT Parks and Conservation Service	Tidbinbilla	Tidbinbilla	Jedbinbilla		St John's Wort	Common & Localised		Occasional & Localised	
eWOP208	City Services	La Trobe Pk	Urban open space	Belconnen to Inner North	Baldwin Dr, Kaleen-Giralang Parkland, Mt Rogers, Lyneham Ridge open space, Watson parkland	Serrated Tussock	Common & Localised		Occasional & Widespread or Common & Localised	Mt Rogers also has an emerging problem with the tall and short forms of African Lovegrass
eWOP209	City Services	La Trobe Pk	Urban open space	Inner South to Weston Creek	Monaro Highway (urban), Curtin	Serrated Tussock	Common & Localised		Occasional & Widespread or Common & Localised	
eWOP210	City Services	La Trobe Pk	Urban open space	Molonglo Reach		Broadleaf	Common & Widespread		Occasional & Widespread or Common & Localised	Thistles
eWOP211	City Services	La Trobe Pk	Urban open space	Yerabi Pond		Other weeds	Common & Widespread		Occasional & Localised	Alligator Weed
eWOP212	City Services	La Trobe Pk	Urban open space	Lake Ginninderra		Other weeds	Occasional & Widespread		Occasional & Localised	Alligator Weed
eWOP213	City Services	Macarthur House	City Services urban native grasslands	Umbagog Park		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP214	City Services	Macarthur House	City Services urban native grasslands	Dudley St Yarralumla		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP215	City Services	Macarthur House	City Services urban native grasslands	Diddam's Close – Lake Ginninderra		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP216	City Services	Macarthur House	City Services urban native grasslands	William Hudson Cres Monash		African Lovegrass	Common & Localised		Occasional & Localised	
eWOP217	City Services	Macarthur House	City Services urban native grasslands	Gilmore Hill		African Lovegrass	Common & Localised		Occasional & Localised	

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eWOP218	City Services	Macarthur House	City Services urban native grasslands	Umbagog Park		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP219	City Services	Macarthur House	City Services urban native grasslands	Dudley St Yarralumla		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP220	City Services	Macarthur House	City Services urban native grasslands	Black St Yarralumla		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP221	City Services	Macarthur House	City Services urban native grasslands	Diddam's Close – Lake Ginninderra		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP222	City Services	Macarthur House	City Services urban native grasslands	CSIRO Limestone Ave		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP223	City Services	Macarthur House	City Services urban native grasslands	Constitution Ave		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP224	City Services	Macarthur House	City Services urban native grasslands	Adelaide Ave Yarralumla		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP225	City Services	Macarthur House	City Services urban native grasslands	Borella St Campbell		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP226	City Services	Macarthur House	City Services urban native grasslands	Legacy Park		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP227	City Services	Macarthur House	City Services urban native grasslands	William Hudson Cres Monash		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP228	City Services	Macarthur House	City Services urban native grasslands	Alexandrina Dr Yarralumla		Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP229	City Services	Macarthur House	City Services urban native grasslands	Umbagog Park Grassland		St John's Wort	Occasional & Widespread		Occasional & Localised	

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eWOP230	City Services	Macarthur House	Ginninderra Creek	Downstream of Dam wall		Woody Weeds	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP231	City Services	Macarthur House	Molonglo River	Molonglo Reach		Willows	Common & Widespread		Occasional & Localised	Includes ACT Hospice waterfront
eWOP232	ACT Parks and Conservation Service	North	Canberra Nature Park	Kinleyside		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP233	City Services	Macarthur House	Urban open space	Belconnen to Inner North	Mitchell Depot Broom Folder has numerous locations	Broom	Occasional & Widespread		Occasional & Widespread or Common & Localised	
eWOP234	City Services	Macarthur House	Urban open space	Residential areas	New weed incursions file has locations	New weed incursions	Occasional & Localised		Occasional & Localised	Mexican Feather Grass
eWOP235	City Services	Macarthur House	Urban open space	Molonglo Reach		Blackberry	Common & Widespread		Occasional & Localised	
eWOP236	City Services	Macarthur House	Urban open space	Lady Denman Dr Shoreline to ANBG		Blackberry	Common & Widespread		Occasional & Localised	
eWOP237	City Services	Macarthur House	Urban open space	Stirling Ridge shoreline to Westbourne Woods		Blackberry	Common & Widespread		Occasional & Localised	
eWOP238	City Services	Macarthur House	Urban roadsides	Urban roadsides opposite North District Canberra Nature Park Reserves and Grazing Agistments	Barton Hwy, Horse Park Drive, Gungahlin Dr, Bellenden St, Ranwick Rd, Flemington Rd, Springvale Dr, William Hovell Dr, Bindubi St, Coulter Dr, Caswell Dr, Belconnen Way, Dryandra St, Frith Rd, Antil St, Mt Ainslie Dr, Black Mountain Dr, Clunnies Ross St, Northcott Dr, Fairbairn Ave, College St, Haydon Dr, Kerrigan St, Binns St Fraser	African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	North District
eWOP239	City Services	Macarthur House	Urban roadsides	Urban roadsides opposite South District Canberra Nature Park Reserves and Grazing Agistments	Monaro Hwy, Eucumbene Dr, Hindmarsh Dr, Tamar St, Tuggeranong Pkwy, Heysen St, Red Hill Dr, Waldock St, Erindale Dr, Sullwood Dr, Tharwa Dr, Athllon Dr, Learmonth Dr, Bugden Ave, Tom Roberts Ave, Canberra Ave	African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	South District
eWOP240	City Services	Macarthur House	Urban roadsides	Urban roadsides opposite South District Canberra Nature Park Reserves and Grazing Agistments	Tharwa Dr – opposite Tuggeranong Hill	Broadleaf	Common & Localised		Occasional & Widespread or Common & Localised	Bathurst Burr
eWOP241	Defence Department	Defence	Campbell Park			St John's Wort	Occasional & Widespread		Occasional & Localised	
eWOP242	Defence Department	Defence	Harman Grassland			Serrated Tussock	Occasional & Widespread		Occasional & Localised	

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP243	Defence Department	Defence	Majura Firing Range			Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP244	National Capital Authority	NCA	Capital Hill Woodland			Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP245	National Capital Authority	NCA	Capital Hill Woodland			Woody weeds	Occasional & Widespread		Occasional & Localised	
eWOP246	National Capital Authority	NCA	Stirling Ridge			African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP247	National Capital Authority	NCA	Stirling Ridge			Chilean Needle Grass	Abundant & Localised		Occasional & Localised	
eWOP248	National Capital Authority	NCA	Stirling Ridge			Woody weeds	Occasional & Widespread		Occasional & Localised	
eWOP249	National Capital Authority	NCA	Yarramundi Reach Grassland			Chilean Needle Grass	Common & Localised		Occasional & Localised	
eWOP250	Territories Venues and Events	Canberra Stadium	Stromlo Forest Park			African Lovegrass	Common & Widespread		Occasional & Widespread or Common & Localised	
eWOP251	Territories Venues and Events	Canberra Stadium	Stromlo Forest Park			Blackberry	Common & Widespread		Occasional & Localised	
eWOP252	Territories Venues and Events	Canberra Stadium	Stromlo Forest Park			Serrated Tussock	Common & Localised		Occasional & Widespread or Common & Localised	
eWOP253	ACT Parks and Conservation Service	North	Canberra Nature Park	Kama	SW section	African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP254	ACT Parks and Conservation Service	South	Canberra Nature Park	Callum Brae		Blackberry	Common & Localised		Occasional & Localised	
eWOP255	Australian National Botanic Gardens	ANBG	Canberra Nature Park	Black Mountain	Powerline area above Parkes Way	Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP256	ACT Parks and Conservation Service	Cotter	Murrumbidgee River Corridor	Bullen Range	Below Bullen Rd – on the Murrumbidgee River	Woody Weeds	Common & Localised		Occasional & Localised	Tree of Heaven
eWOP257	ACT Parks and Conservation Service	North	Canberra Nature Park	Dunlop Grasslands		Serrated Tussock	Common & Localised		Occasional & Localised	
eWOP258	ACT Parks and Conservation Service	North	Canberra Nature Park	Crace Grasslands		Serrated Tussock	Occasional & Widespread		Occasional & Localised	
eWOP259	ACT Parks and Conservation Service	North	Canberra Nature Park	Percival Hill		African Lovegrass	Occasional & Localised		Occasional & Localised	
eWOP260	ACT Parks and Conservation Service	North	Canberra Nature Park	Percival Hill		Woody Weeds	Common & Localised		Occasional & Localised	Spanish Heath
eWOP261	ACT Parks and Conservation Service	North	Canberra Nature Park	Gossan Hill	Above Crisp Circuit	African Lovegrass	Common & Localised		Occasional & Localised	
eWOP262	ACT Parks and Conservation Service	North	Canberra Nature Park	Gossan Hill	Above Crisp Circuit	Broadleaf	Common & Localised		Occasional & Localised	Gazania

EWOP No.	Unit or Body	Depot or district	Reserve or area	Locations or items	Detailed location	Weed Species	2009-10 Cover abundance	2013-14 cover abundance	Target cover abundance in 2019	Other comments
eWOP263	City Services	Macarthur House	Urban Open Space	Covenant College Hill		Serrated Tussock	Common & Widespread		Occasional & Localised	Upwind from Tuggeranong Hill NR, so a high priority.
eWOP264	ACT Parks and Conservation Service	North	Canberra Nature Park	Lyneham Ridge		Serrated Tussock	Common & Widespread		Occasional & Localised	A priority site to protect as it is near high conservation value reserves.
eWOP265	ACT Parks and Conservation Service	Cotter	Namadgi National Park	Two Sticks Rd area		Blackberry	Common & Widespread		Occasional & Localised	Joint project with NSW NPWS due to shared border with Brindabella National Park.

Appendix 2 – Environmental Weed Infestation Maps

The following maps (over leaf) list the approximate location of the main environmental weed infestations that are a significant threat to biodiversity. There are many other infestations of environmental weeds that are a lower priority for control which are not mapped.

The numbered labels on each map are the eWOP id codes. These can be looked up in Appendix 1 to see the details of the infestation. Each label on the map has a colour corresponding to the priority of controlling the infestation. The priorities on the maps range from 1 (red triangle) to 4 (green triangle). The highest priority (red triangle) infestations for control are:

- 1) Sites where follow-up control work is required
- 2) Highest risk weeds based on invasiveness, impact and potential distribution (Decision Matrix 1)
- 3) Most feasible sites for coordinated control based on control costs, persistence of the weed and current distribution of the weed (Decision Matrix 1).

Detailed maps showing the size and density of weed infestations controlled are available on request from the Senior Weed Management Officer at the ACT Parks & Conservation Service.