

Pest Plants and Animals (Serrated Tussock) Management Plan 2016 (No 1)

Notifiable instrument NI2016–236

made under the

Pest Plants and Animals Act 2005, s 8 (Pest plant management plan)

1 Name of instrument

This instrument is the *Pest Plants and Animals (Serrated Tussock) Management Plan 2016 (No 1)*.

2 Commencement

This instrument commences on the day after its notification day.

3 Pest plant management plan—serrated tussock

The document at schedule 1 is the pest plant management plan for the management of serrated tussock (*Nasella trichotoma*).

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Minister for Planning and Land Management

16 May 2016

Pest Plant Management Plan - Serrated Tussock



Serrated Tussock Monoculture - Rob Roy Nature Reserve
Photo by ACT Parks and Conservation Service

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Summary

Serrated tussock was first recorded in the ACT near Queanbeyan in 1953. Today this invasive weed is widespread within grassy ecosystems and open woodlands east of the Murrumbidgee River. It is also well established on Mt Clear and the Naas Valley in the southern part of the ACT. Significant areas of serrated tussock are controlled on public land in the ACT by the Parks and Conservation Service. In 2014-15, there were 7477 ha of infestations controlled. The extents of infestations on several of the reserves within Canberra Nature Park have been significantly reduced.

However, the success of control is reliant on follow-up and ongoing control, as this weed is capable of rapid spread and forming dense monocultures over most of the ACT.

Serrated tussock is recognised as a Weed of National Significance (WoNS) and a species capable of devastating biodiversity, agricultural and amenity values.

This Plan is prepared in accordance with the *Pest Plants and Animals Act 2005* and requires that serrated tussock must be controlled in the ACT in one of two ways.

- Within Namadgi and the Cotter Catchment any occurrence of the plant must be suppressed and destroyed.
- Elsewhere the weed must be contained, so that it does not spread from one property to another.

The following activities are offences under the *Pest Plants and Animals Act 2005*:

- Any propagation of the plant in the ACT (without a Permit).
- The importation of serrated tussock plants or materials contaminated with plants or seeds into the ACT.
- Transferring contaminants or seed as a result of lack of hygiene care when moving from an infested area to one that is not infested.
- Undertaking mowing or slashing operations in an infested area and then moving to an uninfested area without a thorough cleaning of the mower or slasher.

Legal status of serrated tussock

Serrated tussock is a Weed of National Significance (WoNS) that threatens productive pastures and native grassy ecosystems throughout south-eastern temperate Australia. It is a highly invasive weed, native to South America, and was declared as a WoNS due to its invasiveness, potential for spread and its social, economic and environmental impacts.

A *National Strategic Plan* (2012 -2017) has been developed to prevent serrated tussock from establishing further in Australia and to reduce its current impact. This strategy aims to deliver the following three key national goals and objectives:

1. Early detection capabilities are in place for serrated tussock and outlying infestations are actively managed.
2. Existing infestations are under strategic management.
3. Capability and willingness to manage serrated tussock is increased.

Serrated tussock is declared a Class 3 or Class 4 noxious weed in many areas of NSW. In areas where it is declared Class 3 the plant must be fully and continuously suppressed and destroyed. In areas where it is declared Class 4, the growth of the plant must be managed in a manner that reduces its

numbers, spread and incidence and which continuously inhibits its reproduction. The species must not be sold, propagated or knowingly distributed. The neighbouring NSW Local Government Areas mainly list serrated tussock as a Class 4 noxious weed. The responsibility for control of noxious plants and appropriate disposal of weed plant material on private land rests with the owner or occupier of the land. Failure to do so can result in the local control authority issuing a weed control notice, court action and a fine (NSW DPI 2010).

In the ACT, serrated tussock is declared as a Pest Plant under the *Pest Plants and Animals Act 2005*. Under this Act, serrated tussock is a Prohibited Plant whose propagation and supply is prohibited, and 'must be contained'.

The *ACT Weeds Strategy* (2009 -2019) states that "containment is a recognition that prevention of further spread is the most practicable approach", while the *National Strategic Plan (2012 -2017)* considers that containment occurs when existing infestations are under strategic management. This Pest Plant Management Plan identifies what strategic management must be undertaken within the ACT, with differing management in different areas depending on feasibility of control and the potential threat posed.

Species Characteristics

Serrated tussock is a perennial, drought-resistant, highly invasive tussock-forming grass which is a serious weed in Australia, New Zealand and South Africa. It is highly adapted to a range of environments, seeds prolifically and is difficult and costly to control. Large volumes of seed are spread long distances by wind; allowing new populations to establish over large areas.

Description and identification

Serrated tussock is a long lived perennial grass growing up to 60cm in height with a base of 25cm in diameter. Plant size varies with soil fertility and location. In infertile conditions plants may only reach a height of 15cm.

Serrated tussock changes colour with the seasons. Plants remain green during summer, when other grasses have usually browned off. Plants appear purple when flowering in late spring/early summer. Once seed ripens flower heads change to a golden brown. Bleaching from frost may occur in late autumn and winter, turning the plant golden yellow in colour.

Serrated tussock is shallow rooted with an extensive network of fibrous roots occurring predominantly in the top 20cm of soil. The roots are dense, wiry and fibrous, making serrated tussock very difficult to pull out even when small.

Flowering stems emerge from the base of the plant. They are multi-branched and up to 35cm long. The purple colour of the small seeds produces an overall purplish haze to the serrated tussock seed head. Once the seeds have formed, the entire seed head will 'droop' over the tussock towards the ground.

Flowering takes place as early as late winter (August) and will continue throughout the spring (September – November). Autumn flowering has been known to occur.

Seeds take 8 – 10 weeks to mature, normally occurring throughout the spring and summer months. Once seeds are ripe, the whole flowering stem detaches from the base of the plant and is dispersed by the wind. Seed is dormant and will not germinate for about 6 months.

Serrated tussock is a prolific seeding plant. A single mature plant can produce more than 100,000 seeds per year. Seed can remain viable in the soil for many years (anecdotal reports state more than

20 years). However, viability of seed can reduce quite rapidly, with approximately 74 - 91% of the seed bank reducing over a 6 – 12 month period.

Seedlings are weak and slow growing and are more likely to establish on bare ground with limited competition.

A guide and identification flow chart for serrated tussock is available at:
<http://www.weeds.org.au/WoNS/serratedtussock/docs/stbpmm.pdf>

An Android Smartphone App called 'Environmental Weeds of Australia' is available via the Google Play Store. This App contains an off-line "Lucid" key for field identification which is particularly useful for identifying invasive grasses like serrated tussock.

Seed Spread

Wind

Serrated tussock seeds are well adapted to wind dispersal and this is the main way it spreads. Once seeds are mature, the entire seed head breaks away from the base of the tussock and blows along the ground with surface winds, and sometimes with thermals. Wind currents can influence where a mass of seed heads will land and can often be seen on the crown and crest of hills.

While most of the seed will remain relatively close to the adult plant (within 0.5 km), seed heads are light and able to travel great distances (up to 20 km). Masses of seed heads can be captured by fences, trees, logs, gullies and other obstructions. Seeds are then able to germinate, forming new infestations of serrated tussock. Re-invasion from neighbouring properties and public lands from air-borne seeds can be a problem if control is not tackled within the local area.

Machinery

Serrated tussock seed heads can become caught in vehicles, machinery, tractors, implements, weed spraying units, mowers and slashers, and fire fighting hoses; which can transport seed long distances from the original infestation. For example, slashing and mowing during the flowering period is a major method of seed spread and contamination.

Seed can also be picked up in mud by machinery and vehicles tyres.

Animals

The awns and soft sticky hairs of serrated tussock seed make it capable of attaching to the fleece or fur of stock and other animals, and may also be picked up in mud on the hooves of livestock. Sheep and kangaroos are probably the main animal dispersers in the ACT.

Livestock will generally avoid eating serrated tussock; however, if they do graze on it while in seed, the animal can spread seed through their droppings. Seed survives passage through the gut of ruminant animals and can remain in the gut for up to 10 days, making it possible for serrated tussock to be spread long distances by livestock.

Birds have been seen to use serrated tussock seed heads as nesting material. Rabbits, pigs, kangaroos and wombats create bare patches of ground making it easier for serrated tussock to establish.

Stock feed and produce

Serrated tussock seed can be a contaminant of crops, hay, silage, grain or seed. Movement and use of contaminated produce can lead to the development of new infestations, often long distances

from the original source. This risk is increased during drought conditions when lower quality hay, seed and grain is sold, bought and transported extensively across the country.

Weeds often accumulate in areas where things are stockpiled. Serrated tussock has been known to be moved in firewood and railway sleepers.

Soil

As serrated tussock develops a substantial seed bank, any movement of soil from an infested area is likely to transport seed and create new infestations. Potential movement of seed can occur via activities such as road works, landscaping or building and other forms of development activities.

Water

Rivers, creeks and water channels can transport serrated tussock seed downstream from the original infestation. In particular, flood waters are known to move seed downstream to new locations.

History of introduction

Serrated tussock is native to the South American countries of Peru, Chile, Uruguay and Argentina. It occurs as a weed in New Zealand and South Africa while small infestations also occur in England, France, Italy, Scotland and the USA.

It is not known how serrated tussock was first introduced to Australia, but it was probably around 1900. It was first identified in New South Wales in 1935 from plants collected near the Yass River, and has had a long presence in the ACT.

Habitats it occupies

Serrated tussock is capable of invading much of the grassland, woodland and open forest areas of the ACT. It is not often found in wet swampy areas, heavily shaded areas or areas affected by salinity, but is well adapted to rocky terrains and shallow soils. Serrated tussock can be found growing on soils derived from granite, basalt, shale, slate or sandstone. While adapted to nutrient-deficient soils it also responds to higher soil fertility. It is highly tolerant of acidic soils, and will also grow on basalt soils with higher pH. The plant is capable of surviving severe droughts but is limited by higher temperatures. The optimum temperature range for growth and survival is 10°C to 15°C (NSW DPI 2010).

Potential Threat

Serrated tussock is one of the worst environmental and agricultural weeds in Australia, invading pastures, native grasslands and urban areas, and covering more than a million hectares in New South Wales, Victoria, Tasmania and the ACT. Serrated tussock, left unmanaged, has the capacity to greatly reduce productivity of grazing lands, impact on biodiversity values and, in inaccessible and difficult to manage areas, can be a continuous source of seed for whole regions and communities. (National Strategic Plan 2012-2017).

Serrated tussock has great capacity to survive and further expand its spread. It is a perennial grass that can tolerate extremes of temperature, low rainfall and low soil fertility. With its prolific seed production and ability to spread by wind, livestock, machinery and transport networks, it is well suited to rapidly advance over new areas, colonising bare patches of ground and changing landscapes (National Strategic Plan 2012-2017).

Impact in native ecosystems

Serrated tussock threatens the biodiversity of many native vegetation communities, including native grasslands, grassy woodlands and sclerophyll forests.

The characteristics of vigorous growth, prolific seed production and effective seed dispersal enable serrated tussock to compete strongly with, or in some places displace, native vegetation. Serrated tussock may also change the fuel load in plant communities. The changed structure and fire regime of the habitat is likely to adversely impact on both native vertebrate and invertebrate fauna. In NSW serrated tussock is one of five exotic perennial grass species which together have been declared as a threatening process on NSW's threatened species and vegetation communities. (NSW Scientific Committee 2003)

The ACT Lowland Native Grassland Conservation Strategy (2005) recognises that exotic perennial grasses, including serrated tussock and other weeds are a major threat to all grassland remnants. At handover from rural lease to nature reserve, serrated tussock occupied about 20% of Jerrabomberra West and was poised to expand its area of occupation. It was only after long term and extensive control programs that cover of this plant has been reduced to isolated occurrences. This reserve contains a significant area of the nationally endangered Temperate Grassland and major habitat of several threatened species including the grassland earless dragon, striped legless lizard, golden sun moth, Perunga grasshopper and the button wrinklewort daisy. The fragmented nature of the grassland habitats, together with their largely urban location, makes them particularly susceptible to invasion from serrated tussock.

West Jerrabomberra Grasslands during and five years after initial control of serrated tussock



Weeds, including serrated tussock, are also identified in the ACT Lowland Woodland Conservation Strategy (2004) as a major threat to the ACT's woodland remnants, including the nationally endangered Yellow Box – Red Gum Grassy Woodland community. The NSW listing of Exotic Grass Invasion as a threatening process considered that invasion of serrated tussock into remnant woodland significantly degrades its habitat value for several species of threatened or declining woodland birds (NSW Scientific Committee 2003).

Serrated tussock is a major threat to both of the ACT's listed endangered vegetation communities and the many threatened and rare species that occur in these communities.



Serrated tussock Monoculture - Rob Roy Nature Reserve

Impact on agriculture (from NSW DPI 2010)

Serrated tussock can infest agricultural land ranging from highly arable and fertile areas through to steep and non-arable areas with low fertility. It will colonise both native and introduced pastures, and its spread is most rapid in degraded or disturbed pastures. It can be particularly difficult to control in native pastures as many native species are susceptible to fluproponate - a commonly used selective herbicide for serrated tussock control. Uncontrolled serrated tussock can develop into a monoculture within a few years (see photo above).

Serrated tussock is not palatable for livestock and has little feed value. Significant infestations will dramatically reduce carrying capacities. A well managed pasture can carry around 7–15 dse¹/ha while heavy infestations of serrated tussock will reduce carrying capacities to as little as 0.5 dse/ha, and moderate infestations can reduce carrying capacity by approximately 40%. It is suggested that serrated tussock decreases carrying capacity proportionally to the level of infestation i.e. a 50% infestation level of serrated tussock reduces carrying capacity by 50%.

Serrated tussock seeds are also a serious contaminant of hay and grain. Farm machinery such as slashers, vehicles and tractors can readily transport seed to clean areas.

Control of serrated tussock within a farming system is on-going and often at great cost to producers, with production from infested country substantially reduced and land values lowered.

¹ dry sheep equivalent

Impact in urban areas

Large build-ups of serrated tussock are a concern in urban areas because of the increased fire risk and hazard because:

- fire intensity is increased due to the dryness and large biomass of combustible material in serrated tussock. Trials indicate that the plant burns with an intensity up to seven times greater than native grasslands (serrated tussock Working Party for the ACT and NSW);
- seed heads can catch fire and then blow away, making them capable of starting spot fires some distance away;
- seed heads can be blown up into the eaves of homes; and
- the fire season is lengthened in areas where large infestations occur.

Current and potential distribution in the ACT

The earliest record of serrated tussock in the ACT is a 1953 herbarium collection from the vicinity of the ACT – Queanbeyan border. Two collections were made in the vicinity of Canberra Airport in 1958. In 1962 a collection was made near Gibraltar Creek, in the Paddy River District.

Between 2001 – 2004 the lowland woodland and lowland grasslands were subject to a comprehensive vegetation survey. Within these vegetation types, serrated tussock was found to be concentrated in the Canberra area and was particularly common on the rural leases within Gungahlin, Pialligo and Woden-Callum Brae, in the Kowen area, on the Belconnen Naval Station and Majura Field Firing Range, and within Mulligan’s Flat and Mulanggari nature reserves

In 2008, Johnston et al (2009) comprehensively surveyed the riparian vegetation along the Murrumbidgee. They found serrated tussock at 12 separate locations but only ever in low numbers.

Serrated tussock is a major weed of much of the grasslands and woodlands within Canberra Nature Park and Gigerline and Woodstock nature reserves. Within Canberra Nature Park the weed is particularly prevalent within Callum Brae, East Jerrabomberra, Gungaderra, Crace, Mulanggari, Isaacs Ridge, Mt Majura, Mt Ainslie, Rob Roy, Mt Mugga-Mugga and Goorooyarroo nature reserves.

Significant areas of serrated tussock are controlled on public land in the ACT by the Parks and Conservation Service. In 2014-15, there were 7,477 ha of serrated tussock infestations spot-sprayed with herbicide. In most locations density ratings were scattered to patchy. So long as follow-up control continues the density ratings should drop to lightly scattered and isolated.

Serrated tussock is a major existing weed on rural leases in the general areas of Clear Range-Naas Valley, Kowen, Northern Murrumbidgee, One-Tree Hill – Gungahlin Plantation and the Jerrabomberra Valley. The infestations on Clear Range and the Naas Valley are a significant source of invasion into Namadgi National Park, and for this reason are high priorities for control.

Control methods

Non-chemical Control

Chipping is effective with isolated plants. Pasture improvement can be used in degraded agricultural areas. Reduced grazing pressure on desirable grasses is effective in providing competition. Do not mow or slash when in seed. Thoroughly clean all mowers and slashers that have operated in serrated tussock areas before moving to un-infested areas.

Biological Control

There are no biological control agents available.

Chemical Control

Best times to spray are from April to October. The following herbicides are registered under off-label permit PER9792. You can spray with flupropanate, or use the granules, all year round as the plant usually remains actively growing in all seasons. However, if the aim is to stop seed set then spraying should be completed before the end of October. It is also important to know the lifecycle of desirable grasses within the pasture. Herbicide application can then be manipulated for the best results with minimal non-target damage.

Chemical	Boom spray rate per ha	Spot spray rate per 100L water	Surfactant	Comments
Glyphosate 360g/L	2.8 to 4L plus 75L to 200L water	1L	Hot-Up at 250mL/100L to allow spraying during dry periods.	Non-Selective. Careful spot-spraying with a lance to reduce spray drift is very effective. Follow-up essential.
flupropanate 745g/L	1.5L to 2L plus 150L water or if aerial spraying add 80L water	150mL to 200mL	For aerial spraying add compatible anti-drift additive.	Do not boom spray in native grassland or native pasture. Check resistance of desirable pasture grasses before boom spraying. To prevent serrated tussock seeding add glyphosate 360g/L at 380 to 630mL/ha when booming and 335mL/100L when spot spraying.
flupropanate 86.9g/kg (granular form)	15kg			Apply as a dry granular product. Spot application requires 1.5 grams per sq m. (approx. 1/3 teaspoon).

Serrated tussock has several features such as its fecundity and dispersal ability which make it difficult and costly to control. Serrated tussock plants are most vulnerable as young seedlings and preventing seed-set in adult plants stops the formation of tens of thousands of seeds. Therefore the most effective techniques will target these features.

Basic principles to consider in the control of serrated tussock are:

Seed bank management

- Reduce the amount of seed going into the seed bank.
- Minimise disturbance to the seed bank, which may reduce the germination rates of serrated tussock seed.

Target young serrated tussock seedlings

- Seedlings are small, slow growing and vulnerable to competition.
- Reduce seedling survival by minimising bare ground cover and increasing the level of desirable vegetation.

Prevent seed-set in adult tussock plants

- Reduce the occurrence or severity of windblown seed into your own and neighbouring properties.
- Reduce new seed being added to the seed bank.
- Serrated tussock seed bank will be depleted over time.

Prevent/reduce weed seed spread

- Use prevention strategies such as mesh fencing, shelterbelts and vehicle hygiene in managing serrated tussock.
- Regularly monitor areas at high risk of invasion, such as fence lines.
- Quickly eradicate new, small or outlying infestations.

Actively increase ground cover and competition

- Ensure there is always competition for young, vulnerable serrated tussock seedlings.
- Prevent initial establishment of serrated tussock populations. A good vigorous pasture or grassland cover is less likely to be infested by serrated tussock.

Regularly monitor, follow up and review treatments

- Follow up is absolutely critical.

The current best practice methods of destruction of serrated tussock include the use of glyphosate and/or fluproponate for spot spraying in scattered infestations to boom spraying in mono-cultures. Aerial spraying with the selective grass herbicide, fluproponate, is a useful containment tool in rugged or inaccessible country. Serrated tussock spread can be controlled by encouraging a healthy ground cover, because it is a weak competitor at germination (Victorian DPI 2008). Isolated plants can be chipped out, or even pulled out when the ground is moist.

Practicality of Control

The NSW DPI Weed Risk Management System takes into account costs, persistence and current distribution, when assessing practicality of control. The higher the practicality of control the stronger the management action that is likely to be directed towards a weed, as control is more likely to be successful. For instance a new incursion restricted to a few sites will have a higher feasibility of coordinated control and 'Eradication' would be the management action. On the other hand a widespread highly invasive weed would have a low feasibility of coordinated control so its management action would be 'protect priority sites' or asset-based protection.

The NSW DPI Weed Risk Management System has been applied to serrated tussock in the ACT. Under this system, serrated tussock received a 'Very High' weed risk rating and a 'Medium' feasibility of coordinated control.

This gives an overall management action of 'contain spread'. In areas with isolated or no infestations emphasis is on local eradication. In areas where serrated tussock is widespread the aim is containment.



Dense infestation of serrated tussock on hilltop on rural lease in Clear Range



Same area following control with fluproponate herbicide

Pest Plant Management Requirements in the ACT

Having had regard to both potential threat and practicality of control, this Pest Plant Management Plan requires two types of action depending on location. In Namadgi and the Lower Cotter Catchment, where serrated tussock is absent or currently only has an isolated occurrence, this weed must be suppressed or destroyed.

Outside of Namadgi and the Lower Cotter Catchment serrated tussock must be contained.

Suppressed and destroyed

Where early stage invasion or small isolated infestations exist, high priority will be given to eradication of serrated tussock in Namadgi and the Lower Cotter Catchment.

Active vigilance and searching for new potential outbreaks will occur within Namadgi and the Lower Cotter Catchment

Measures will be taken to prevent serrated tussock entering these lands, including:

- prioritising control of infestations from which seed may blow into the park and catchment area;
- abiding by strict hygiene practices;
- maintaining a competitive ground cover;
- developing maps which identify pathways of spread. ie vehicles, wind, livestock, fodder.

Containment

Containment requires a land manager to prevent the spread of the pest plant from their land to neighbouring properties. This can be achieved through a staged gradual reduction in serrated tussock infestations.

Stage 1

Stage 1 of containment requires:

- control of serrated tussock on hill tops and exposed areas;
- control of serrated tussock within 100m of boundaries and 50m of drainage lines; and
- annual follow-up control to prevent re-establishment of infestations in controlled areas.

Containment targets for Stage 1:

1. Within six months the presence of serrated tussock is reduced to less than 1% of the perennial ground cover over 20% of the stage 1 infestation area;
2. Within 2 years the presence of serrated tussock is less than 5% of the perennial ground cover in the stage 1 infestation area; and
3. Within 5 years the presence of serrated tussock is less than 1% of the perennial ground cover in the stage 1 infestation area.

Reduction to less than 5% of the perennial ground cover should be completed within two years of any landowner being directed by the Director General to undertake control.

Stage 2

Stage 2 containment requires destruction of infestations across the whole area of land concerned.

Containment targets for stage 2:

1. Within 5 years the presence of serrated tussock is less than 1% of the perennial ground cover (lightly scattered or isolated plants) across the whole area of land concerned;
2. Follow-up control as required to contain the infestation at or below the 1% level of infestation.

Successful follow-up control combined with reduced grazing pressure of desirable grasses means that the requirement for follow-up control resources declines significantly after 3 to 5 years. However, periods of drought may lead to unexpected re-infestation because of the loss of competitive desirable grasses, so land managers must be vigilant to respond quickly to new infestations.

As identified in the *Serrated Tussock National Best Practice Management Manual*, working together in a region of infestation is essential for the successful management of serrated tussock. Due to the serrated tussock's unique feature of producing tens of thousands of small, viable, wind dispersed seeds; there is always the risk that seed can be blown in from a neighbouring property. A way of managing this risk is to work across the local area or region to coordinate serrated tussock control in a defined area. This means that:

- It is essential that all landowners and responsible parties are controlling the spread of serrated tussock from their land in areas subject to co-ordinated local area or regional control.
- A party is in breach of this Plan if they are not taking part in a co-ordinated control program involving their neighbours, or if their control efforts are insufficient to contain the spread of serrated tussock on their land.

For small properties or premises:

- Serrated tussock on blocks of less than 10ha must be contained to less than 100 live plants.
- Any infestation of serrated tussock on blocks less than 10ha must be controlled.

Weed Hygiene

The key features of successful weed hygiene are summed up in the in the NSW DPI SIP acronym.

S – Stop – do not drive through invasive weeds in seed;

I – Inspect – Inspect and clean clothing, equipment and vehicles;

P – Protect – Report suspicious plants.

Legislation and Offences

The following activities are offences under the *Pest Plants and Animals Act 2005*.

Propagation of serrated tussock

The reckless² propagation of serrated tussock, without a Permit, is an offence.

Importation

The reckless importation of serrated tussock plants or seeds into the ACT without a permit is an offence.

It may be considered reckless, for example, for stock that have been grazing in an area infected with serrated tussock to be moved to an area free of infection without first placing stock in a holding paddock for a minimum of a week.

If serrated tussock has been imported as a contaminant the importation may be considered reckless, if the contaminant material (including but not limited to hay and soil) has been sourced from an area known to be infested with serrated tussock.

Supply

The commercial supply of serrated tussock plants or seeds into the ACT without a permit is an offence. The reckless supply of serrated tussock plants or seeds into the ACT is also an offence.

² careless of or indifferent to consequences

If serrated tussock has been supplied as a contaminant the supply may be considered reckless, if the contaminant material (including but not limited to hay and soil) has been sourced from an area known to be infested with serrated tussock.

Use of a vehicle or machinery including slashing or mowing

A person commits an offence if they use a vehicle or machinery and due to contamination they are reckless about the contamination and any resulting spread of serrated tussock that might result.

A person may be considered reckless in their use of a vehicle and/or machinery if:

- They have mown or slashed an area infested with serrated tussock, during October to May (when the plant is likely to bear viable seed), and have then undertaken mowing or slashing operation in an area in which this weed is absent or sparse, without first thoroughly cleaning their vehicle and machinery so that any grass or seed material has been removed from the machinery or vehicle;
- They have disturbed soil in an area infested with serrated tussock and have then moved the vehicle or machinery to an area in which this weed is absent or sparse without first cleaning any dirt or mud from their vehicle or machinery.

Disposal

A person must dispose of serrated tussock carefully and it is an offence if this is done recklessly.

If required serrated tussock should be disposed of within the infected area. Any offsite disposal could be reckless if plants or seed material have not been sealed and contained, and disposed of at a designated land fill site. Material must not be sent to a green waste recycler.

References

1. ACT Parks and Conservation Service (ACTPCS) (2013), *Environmental Weeds – Operations Plan (eWOP) – 2014-15*.
2. ACT Parks and Conservation Service (ACTPCS) (2013c), *Environmental Weed Control Guidelines*.
3. Berry S and Mulvaney M. (1995), *An Environmental Weed Survey of the Australian Capital Territory*, A report prepared for the Conservation Council of the South-East Region and Canberra. <http://catalogue.nla.gov.au/Record/2154813>.
4. Commonwealth of Australia (2012) *Weeds of National Significance. Serrated tussock. Review against Strategic Plan 2012-2017*. <http://www.weeds.org.au/WoNS/serratedtussock/>
5. Department of Climate Change Energy and Water (2009), *ACT Weed Strategy 2009 – 2019*, ACT Government. http://www.environment.act.gov.au/_data/assets/pdf_file/0007/575071/ACT-Weeds-Strategy-2009-2019.pdf
6. Environment ACT (2004) *Woodlands for Wildlife. ACT Lowland Woodland Conservation Strategy. Action Plan No 27*, ACT Government. http://www.environment.act.gov.au/cpr/conservation_and_ecological_communities/lowland_woodlands/woodlands_strategy
7. Environment ACT (2005), *A Vision Splendid of the Grassy Plains Extended, ACT Lowland Native Grassland Conservation Strategy, Action Plan No 28*, ACT Government. http://www.environment.act.gov.au/_data/assets/pdf_file/0009/576351/actionplan28visionandcontents.pdf
8. Luke Johnston, Stephen Skinner, Lesley Ishiyama and Sarah Sharp (2009) *Survey of Vegetation and Habitat in Key Riparian Zones: Murrumbidgee River, ACT*. Technical Report No. 22. Conservation Planning and Research. ACT Government. http://www.environment.act.gov.au/_data/assets/pdf_file/0011/576821/01Technical_Report_22.pdf.
9. NSW Department of Primary Industries (2010) *Serrated tussock - Weed of National Significance*. <http://weeds.dpi.nsw.gov.au/Weeds/Details/123>
10. NSW Department of Primary Industries (2012) *Noxious and Environmental Weed Control Handbook*, 6th Edition, NSW Department of Primary Industries. <http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/publications/noxious-enviro-weed-control>.
11. *NSW Weed Risk Management System* (Accessed 8/1/2014). <http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/wrm-system>.
12. NSW Scientific Community (2003), *Invasion of native plant communities by exotic perennial grasses - key threatening process listing – Final Determination*. NSW Government.
13. Serrated tussock Working Party for NSW & ACT (accessed 8 Jan 2014), *Serrated tussock Management and Control in NSW and the ACT*. <http://www.serratedtussock.com.au/?i=64&the-working-party>
14. Victorian Department for Primary Industry (2008), *Weeds of National Significance, National Best Practice Management Manual – Serrated tussock*. <http://www.weeds.org.au/WoNS/serratedtussock/docs/stbpmmi.pdf>.