



Government
of South Australia

Declared Plant Policy

Fireweed (*Senecio madagascariensis*)

Fireweed is a toxic annual that invades pastures, and is not yet present in South Australia. It is one of the thirty-two Weeds of National Significance.

Management Plan for Fireweed

Outcomes

- No establishment of fireweed in South Australia.
- Prevention of national trade in Weeds of National Significance.

Objectives

- Prevent the establishment of fireweed as a naturalised species in South Australia.
- Prevent any movement of fireweed as a produce contaminant via South Australia to other States or Territories where it is an invasive weed.

Implementation

- Surveillance for infestations as part of routine inspection by Natural Resources Management (NRM) authorities.
- Any infestations found to be delimited, contained and destroyed.
- Compliance action in the event of material contaminated with fireweed being detected entering South Australia or sold in this State.

Regional Implementation

Refer to regional management plans for further details.

NRM Region	Actions
Adelaide and Mount Lofty Ranges	contain spread
Alinytjara Wilurara	limited action
Eyre Peninsula	contain spread
Kangaroo Island	contain spread
Northern and Yorke	contain spread
South Australian Arid Lands	limited action
South Australian Murray-Darling Basin	contain spread
South East	contain spread - regional alert

Declaration

To implement this policy, fireweed is declared under the *Natural Resources Management Act 2004* throughout the whole of the State of South Australia so that movement of contaminated fodder or machinery can be prevented. The movement or transport of the plant on a public

Fireweed policy

road by itself or as a contaminant, its entry to South Australia, or the sale by itself or as a contaminant are prohibited.

In all NRM regions except Alinytjara Wilurara and South Australian Arid Lands, land owners are required to destroy fireweed plants growing on their properties. NRM authorities in these regions are required to destroy plants on road reserves and may recover costs from the adjoining land owners.

Fireweed is declared in category 2 under the Act for the purpose of setting maximum penalties and for other purposes. Any permit to allow its movement or sale can only be issued by the Chief Officer pursuant to section 188. Under the *Natural Resources Management (General) Regulations 2005*, the transport or movement of grain for milling or wool for cleaning is exempt from the operation of sections 175 and the sale of wool or grain is exempt from section 177(2) if at the time of the sale the person believes on reasonable grounds that the purchaser will remove the plant from the wool or grain before any re-sale.

The following sections of the Act apply to fireweed throughout each of the NRM regions noted below:

Sections of Act	Region							
	AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE
175(1) Prohibiting entry to area	X	X	X	X	X	X	X	X
175(2) Prohibiting movement on public roads	X	X	X	X	X	X	X	X
177(1) Prohibiting sale of the plant	X	X	X	X	X	X	X	X
177(2) Prohibiting sale of contaminated goods	X	X	X	X	X	X	X	X
180 Requiring notification of infestations								
182(1) Landowners to destroy the plant on their properties	X		X	X	X		X	X
182(2) Landowners to control the plant on their properties								
185 Recovery of control costs on adjoining road reserves	X		X	X	X		X	X

Review

This policy is to be reviewed by 2020, or in the event of fireweed becoming established in South Australia or a change in its status as a Weed of National Significance.

Weed Risk

Invasiveness

Fireweed can invade a range of pasture types, including those growing on highly fertile soils, but is rarely a weed in irrigated pastures or crops, probably due to competition from more intensively managed vegetation. It is not a strong competitor, and gains entry to pasture through patches with poor density and vigour due to drought, stock camps or heavy grazing.

Individual plants start to produce bear seeds at 6-10 weeks, and may produce up to 18,000 seeds in a season. Seed is dispersed over medium distances by wind, and can be carried by road in hay and other goods.

Most of the seed is ready to germinate immediately in autumn, and there may be several flushes of germination during the winter.

Impacts

Fireweed is a short-lived perennial that would grow as a winter annual in South Australia. Even in the existing under climates with higher summer rainfall, most plants die off in late spring and summer.

Its major impact has been on pastures dominated by summer-growing grasses such as kikuyu and paspalum, as it competes effectively when their productivity and growth rate are low. This type of pasture is not widespread in South Australia.

Fireweed contains pyrolizidine alkaloids, which make it toxic to most livestock and especially to horses, although it can be tolerated by goats. Sheep will only eat it if there is no better fodder. Its presence makes paddocks unsuitable for cattle production.

Potential distribution

Fireweed is adapted to summer-rainfall subtropical conditions. In South Australia, it is most likely to occupy permanent pastures in the high-rainfall areas of the South East, Kangaroo Island and Adelaide and Mount Lofty Ranges. The most vulnerable pastures are in the lower South East.

Feasibility of Containment

Control costs

Control by herbicides and improved pasture management may take several years to clear paddocks of fireweed. Grazing by goats or sheep is an effective means of reducing infestations.

The potential for biological control has been investigated, but problems of host specificity are a barrier since it is very closely related to some native *Senecio* species.

Persistence

Although most seed germinates rapidly, a small proportion have inherent dormancy and form a seed bank in the soil for several years.

Fireweed is difficult to detect as it looks very similar to the common native *Senecio lautus* and may hybridise with this and other native species.

Current distribution

Fireweed is not known to be present in South Australia. It is most abundant in New South Wales where it is distributed in suitable habitats along the whole coast. Other infestations occur inland including the Riverina, in south-east Queensland and eastern Victoria.

State Level Risk Assessment

Assessment using the Biosecurity SA Weed Risk Management System gave the following comparative weed risk and feasibility of containment scores by land use:

Land use	Weed Risk	Feasibility of control	Response at State Level
Grazing - southern	medium 42	very high 0	contain spread alert

Considerations

This strain of *Senecio madagascariensis* in Australia originated from the KwaZulu-Natal region of South Africa, and was first detected in the Hunter Valley region of NSW around 1918. By 1990 it had slowly spread along coastal New South Wales and southern Queensland.

Risk assessment indicates containment as a management action; since the species is absent from South Australia, containment is best implemented by preventing its entry to the State or establishment. Due to its medium weed risk and absence from the State, fireweed is a State Alert Weed and a high priority surveillance target to increase the likelihood of early the detection of any incursion.

Fireweed is one of the Weeds of National Significance, which are subject to prohibition on sale in all jurisdictions as agreed by the Natural Resource Management Ministerial Council. In line with the draft national strategy on fireweed, sale of the plant and contaminated produce is prohibited in South Australia as in other jurisdictions.

Synonymy

Senecio madagascariensis Poir., Encycl. Suppl. 5. 130 (1817).

Taxonomic synonyms

Senecio bakeri Scott-Elliot, J. Linn. Soc. Bot. 29: 39 (1891).

Senecio junodianus O.Hoffm., Mem. Herb. Boiss. 10: 74 (1900).

Senecio ruderalis Harv., Fl. Cap. (Harvey) 3: 355 (1864).

In South Australia, the common name fireweed is applied to several *Senecio* species and other native annuals that are conspicuous in the first stages of regeneration after a bushfire. One of these, *Senecio lautus*, is very closely related to *Senecio madagascariensis*.

References

Sindel, B. & Coleman, M. (2012) *Fireweed: A Best Practice Management Guide for Australian Landholders*. (University of New England: Armidale).

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