

**Declared Plant Policy**  
under the Natural Resources Management Act 2004

creeping knapweed (*Rhaponticum repens*)



Government  
of South Australia

Creeping knapweed is a deep-rooted perennial with extensive rhizomes and is a weed of broad acre agriculture in most temperate regions of the world.

**Management Plan for creeping knapweed**

**Outcomes**

- Prevent creeping knapweed establishing as a weed of agriculture and horticulture on properties free of the plant.

**Objectives**

- Destroy high priority creeping knapweed infestations.
- Contain larger infestations.
- Increase landholder recognition of creeping knapweed.
- Prevent the movement of contaminated seed, hay or grain from infested areas.

**Implementation**

- Landowners to control infestations on their lands.
- NRM authorities to control infestations on road reserves.
- NRM authorities to enforce control where necessary to protect agricultural land from local spread of creeping knapweed
- To assist local control programs, the sale and movement of creeping knapweed is prohibited.

**Regional Implementation**

Refer to regional management plans for further details.

NRM Region	Actions
Adelaide and Mount Lofty Ranges	Destroy infestations
Alinytjara Wilurara	Limited action
Eyre Peninsula	Contain spread
Kangaroo Island	Eradicate – regional alert
Northern and Yorke	Destroy infestations
South Australian Arid Lands	Limited action
South Australian Murray Darling Basin	Destroy infestations
South East	Contain spread

## Declaration

To implement this policy, creeping knapweed is declared under the *Natural Resources Management Act, 2004* throughout the whole of the State of South Australia. The movement or transport of the plant on a public road, by itself or as a contaminant, or the sale by itself or as a contaminant is prohibited. NRM authorities may require land owners to control creeping knapweed plants growing on their land. NRM authorities are responsible for the control of infestations on road reserves and may recover costs from the adjoining land owners. In the Adelaide and Mount Lofty Ranges, Kangaroo Island, Northern and Yorke, South Australian Murray Darling Basin and South East NRM regions land owners are required to report infestations found on their land.

Creeping knapweed 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 creeping knapweed 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								
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	X			X	X		X	X
182(1) Landowners to destroy the plant on their properties								
182(2) Landowners to control the plant on their properties	X	X	X	X	X	X	X	X
185 Recovery of control costs on adjoining road reserves	X	X	X	X	X	X	X	X

## Review

This policy is to be reviewed by 2020, or in the event of a change in one or more regional management plans for creeping knapweed.

## Weed Risk

### Invasiveness

Creeping knapweed spreads by root and rhizome extension, forming slowly widening round patches around an initial point infestation. Fragments of this root system very readily produce new plants and may be spread within paddocks by cultivation and between properties by movement of vehicles and machinery.

## creeping knapweed policy

Creeping knapweed is an obligate outcrosser dependent on bees for pollination. It may also spread as seed, which normally falls within about a metre of the parent plant. The fruiting heads, containing several seeds, remains closed and are dispersed as a unit by water, contaminated seed and machinery, and animals (both internally and externally). Seed dispersal is of minor importance compared to vegetative spread, as seedlings of creeping knapweed are rarely found; possibly seed viability is low, or the conditions for successful seedling establishment are rarely fulfilled.

### Impacts

Creeping knapweed is a strong competitor with crops for water and nutrients due to its root system. It is grazed in pastures, but is known to be toxic to livestock including sheep in some circumstances. It does not readily dominate pastures, spreading slowly within a paddock and taking up to 20 years to become dominant after its introduction.

It grows during summer as it originated in summer-rainfall climates. Due to its root system which can extend to 5 metres deep, once established it relies on subsoil moisture and can live in our winter-rainfall climate. It can take advantage of the lack of competition in summer fallows, as its rate of growth is proportional to light intensity. As it has this long start over the crop, it remains very competitive in the following cropping season. Due to its deeper and more efficient root system, in dry years a heavy infestation can kill the cereal crop by water stress. It also suppresses the growth of other plants by allelochemicals.

### Potential distribution

Creeping knapweed grows in areas receiving between 300 to 600 mm annual rainfall, on a range of soil types from deep sands to mallee clay loams. Its potential range includes most of the broad acre farming and horticulture zones of South Australia. However, it requires disturbance, e.g. by cultivation, erosion or earth movement, to establish. Its growth rate declines under shading and it does not compete well under a heavy canopy, and is weakened by dense shade.

## **Feasibility of Containment**

### Control costs

Creeping knapweed cannot be destroyed by most selective herbicides or cultivation but is suppressed by phenoxyacid herbicides and consequently may not be evident in a crop routinely treated with these, apart from reduced production in the infested patches. Small incursions on a property can be destroyed by prompt spot spraying.

### Persistence

As a deep-rooted perennial, creeping knapweed will persist indefinitely in crop/pasture paddocks unless it is systematically controlled. It tolerates moderate flooding and drought. The seeds are known to survive in soil for at least 5 years,

### Current distribution

Creeping knapweed is scattered in the Eyre Peninsula, Kangaroo Island, Northern and Yorke, South Australian Murray Darling Basin Adelaide and Mount Lofty Ranges regions but is absent from most land in these regions.

### 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
Crop/pasture rotation	high 152	medium 32	contain spread
Grazing - southern	medium 84	very high 7	contain spread
Grazing - rangeland	negligible 6	very high 2	monitor
Irrigated pastures	high 180	very high 1	destroy infestations
Vegetables	low 21	very high 11	monitor
Perennial horticulture	low 20	very high 11	monitor

### Considerations

Creeping knapweed was first found in SA in 1929, apparently after having entered Australia as a contaminant of lucerne seed from Turkestan. It was rapidly targeted under weed legislation and extension programs due to its reputation as a weed overseas.

Risk assessment indicates containment as the action in rotational cropping and southern permanent pastures, and destruction of infestations in irrigated pasture. While sale and movement are prohibited uniformly across the State, regional actions vary according to the land uses in each region.

In the Adelaide and Mount Lofty Ranges, Northern and Yorke and South Australian Murray Darling Basin regions, infestations are destroyed. In the Eyre Peninsula, Kangaroo Island and South East regions, the aim is to contain spread; on Kangaroo Island creeping knapweed is an alert species to be eradicated. Only limited action is required in the Alinytjara Wilurara and South Australian Arid Lands regions where there are no suitable habitats for this weed.

### Synonymy

*Rhaponticum repens* (L.) Hidalgo, Ann. Bot. (Oxford) 97: 714 (2006)

Basionym: *Centaurea repens* L., Sp. Pl. edn 2, 2: 1293 (1763)

Nomenclatural synonym:

*Acroptilon repens* (L.) DC., Prodr. 6: 663 (1838)

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Taxonomic synonyms:

*Centaurea picris* Pall. ex Willd., Sp. Pl. 3: 2302 (1803)

*Acroptilon picris* (Pall. ex Willd.) C.A.Mey., Verz. Pfl. Casp. Meer. 67 (1831)

*Acroptilon angustifolium* Cass., Dict. Sci. Nat., ed. 2., 50: 466 (1827)

*Acroptilon obtusifolium* Cass., Dict. Sci. Nat., ed. 2. [F. Cuvier] 50: 465 (1827)

*Acroptilon serratum* Cass., Dict. Sci. Nat., ed. 2. [F. Cuvier] 50: 466 (1827)

Other common names include hardhead thistle, hardheads and Russian knapweed.

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Minister for Sustainability, Environment and  
Conservation

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