Managing weed risks associated with drought conditions

In addition to the immediate impacts of a drought on production and farm income, there can be unexpected side effects after the drought breaks. The long-term impact of droughts may include increased abundance of existing weeds on a property and the arrival of new weed species.

Increased abundance of weeds can cause additional production losses to an already drought-impacted farming enterprise. Prevention and control measures should be planned in advance to head off these impacts.

Drought conditions can favour weed species in the following ways:

- Reduced competition for light, nutrients, moisture and space allows opportunistic weed species to establish and grow rapidly.
- Dry soil conditions plus reduced soil fauna and fungi may favour weed seeds, which maintain their viability ready to germinate after drought breaking rains.
- Soil drifting between paddocks may carry weed seeds, extending the range of established weeds within a property or between neighbouring properties.
- Drought causes mineralisation of nitrogen in the soil, and weeds take advantage of this nitrogen for rapid growth.
- Contaminated fodder and grain used to feed livestock can introduce various weed seeds, including herbicide resistant weed seeds (e.g. annual ryegrass).

When significant rainfall is received following a period of drought, there can be an increased incidence of livestock poisoning from weeds that dominate pastures. Stock losses can be due to direct plant poisoning and photosensitisation (where the skin becomes abnormally sensitive to sunlight after stock have eaten certain toxic plants).

There are also the issues of weeds outcompeting more desirable pasture and cropping species, further reducing farm productivity and increasing management costs.
How weeds reach your property

Supplementary feed

Drought often results in the importation of fodder and grain from both local and international suppliers, and this can bring new weeds on to a property. Weeds already established in South Australia that are likely to cause concern include:

- African rue (*Peganum harmala*)
- Bathurst burr (*Xanthium spinosum*)
- Caltrop (*Tribulus terrestris*)
- Noogoora burr (*Xanthium strumarium*)
- Silverleaf nightshade (*Solanum elaeagnifolium*)
- Skeleton weed (*Chondrilla juncea*)
- Yellow burrweed (*Amsinckia* species)

Another class of weeds to watch for are the Alert Weeds (e.g. serrate tussock), which are not yet established in South Australia but may be present in fodder imported from interstate. Information on Alert Weeds is available at: [www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa/alert_weeds](http://www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa/alert_weeds).

Movement of weeds in drought fodder is usually inadvertent, and may occur when farmers are forced to obtain fodder from wherever they can practically source it. It is important to consider weed risks to prevent future management problems.

Livestock movements

New weeds can also be introduced after a drought as herd numbers are increased by a restocking program or when returning from agistment.

Seeds of many weeds such as silverleaf nightshade can pass through the digestive systems of livestock, and remain viable inside the animal for weeks.
Seed and machinery imports

Weeds can be introduced to pasture and cropping land with contaminated seed during sowing and on contaminated machinery or vehicles throughout the year. Sourcing seed from certified suppliers, machinery/vehicle weed hygiene procedures, and designated wash down areas reduces the risk of spread.

Planning to reduce weed spread during and after a drought

Drought recovery planning for integrated weed management needs to begin before rain breaks arrive and may include a combination of expert advice, grazing management, herbicide programs, cultivation, biosecurity planning and record keeping.

Farm Biosecurity

Farm biosecurity is a set of measures designed to protect a property from the entry and spread of pests and diseases. It is an advantage to have a property plan in place for reducing biosecurity risks. Resources to develop property plans are available at: www.farmbiosecurity.com.au.

As part of drought preparedness, this plan should include strategies such as sourcing certified seed and fodder, inspecting fodder prior to feeding, restricting the areas where feed is stored or fed out, and monitoring for new weed species to allow for early detection and control.

Sourcing and inspection of grain and fodder

When sourcing grain and fodder, always obtain as much detail as possible about the source and quality of any grain and fodder being brought to the property.

Feed from interstate and overseas poses the greatest risk of introducing new weeds to a property. Check with Biosecurity SA before importing any plant material for advice regarding import restrictions and on any weeds or other pests prevalent in the source state.

State legislation offers protection to land owners against vendors who knowingly supply fodder or other produce contaminated with a declared weed.
Please remember:

- It is an offence to bring fodder or other produce containing a declared weed into a control area, which may be the whole state or particular regions.
- It is an offence to transport on a public road, fodder or other produce containing a declared weed without written approval by an Authorised Officer, or a permit from the Chief Officer.
- It is an offence to sell fodder or other produce containing a declared weed.

If fodder that appears to contain a declared weed has been delivered to your property, seek advice immediately from regional offices listed at www.naturalresources.sa.gov.au/home

Ideally, all seed and fodder brought into a property should be free from weed seeds. Certification of seed for sowing does not guarantee that it is free from weed seeds.

Seed or fodder should be inspected for any sign of contamination by weeds. These may be visible as plant fragments that differ from the dominant feed type (e.g. broadleaf plant material in a cereal hay). Some weed seeds may be evident as large burrs, but others will be more difficult to detect. If seed cleaning facilities are available, these could be used to clean seed from suspect sources.

**Monitoring of feed-out areas and paddocks**

Consider where the grain and fodder will be fed out. Ideally, feed-out areas should be restricted to one or two paddocks on a property, chosen for accessibility for making regular checks after each rainfall event for up to two years after the drought.

Flat, arable areas will allow easy access for weed control actions such as spot spraying. Keep detailed records of drought feeding of stock for each paddock.

Stock watering points should also be monitored for two years after a drought. Native and feral animals may also access livestock feed and stock water, increasing the possibility of weed spread.

Introduced or returning livestock should be quarantined, ideally by restricting their movement to a holding paddock for at least two weeks. Check the holding paddock for weed seedlings in the next season and control these promptly.
Identify and control weeds quickly after germination

The most important strategies to control newly introduced weeds are early detection and identification, followed by early control.

When rain occurs and weeds have germinated, keep a close watch for unknown plants.

Weeds should be identified and controlled as soon as possible, and well before they establish and set seed. If possible, delay sowing crops for up to a week to allow the first germination of weeds to be fully controlled. Fallow weeds can be controlled by herbicide spraying or tillage as appropriate.


Advice and assistance with identifying potential weeds is available from the regional offices listed at: [www.naturalresources.sa.gov.au/home](http://www.naturalresources.sa.gov.au/home)

**Additional Resources**

Additional Drought Management Fact Sheets exist on the following topics and can be found at [www.pir.sa.gov.au/drought](http://www.pir.sa.gov.au/drought):

- Managing GM risk
- Managing chemical residue risks
- Feeding/dry time programs and calculators
- Soil erosion management