

# Weeds following floods

## Summary

- Floods can kill and weaken pasture grasses and create bare areas. This produces ideal conditions for many weed species to germinate and thrive
- Flood waters often transport weed seeds into previously un-infested areas
- Early identification of new or suspicious plants can highlight emerging problems
- Implementing control measures as soon as practical and applying ongoing monitoring and treatment can prevent weed outbreaks
- Control of weeds will assist pasture recovery by reducing competition. This can be done by:
  - Herbicide application
  - Suitable grazing management including crash grazing and spelling
  - Strategic use of fire
- Awareness of potentially toxic plants and implementing appropriate action can prevent stock losses

## Introduction

Floods often have a severe impact on pastures with prolonged inundation killing key perennial grasses such as buffel grass. The force of flood waters often leaves large areas of bare soil and pastures that remain are often weakened.

Death or weakening of useful pasture species, together with increased bare soil areas and plenty of soil moisture creates ideal conditions for the germination and rapid growth of weed species—both herbaceous

and woody. Weeds often gain the competitive edge by germinating and growing rapidly ahead of desirable perennial pasture plants.



*Parthenium emerging in bare areas after floods*


## Observation and identification of weeds and toxic plants

Early checking for weeds and identification of suspicious plants is critical. Early control of weeds will save money and prevent production losses in years to come. Many weed seeds can be lying in the soil just waiting for these ideal conditions. Flood waters often transport weed seeds into previously uninfested areas.

Weeds normally found in other areas or land types have strong potential to create new populations under these conditions. Outbreaks of problem weeds such as parthenium, rubber vine, cat's claw and giant rat's tail grass are common after extensive flooding.

The high watermark is an important area to check as weed seeds are often deposited there and in debris. It is also important to check along roadsides and around areas where purchased feed has been fed or





stored. Weed seeds are likely to germinate and flourish with extra moisture especially in disturbed areas.

A useful website to assist in identifying weeds is [weeds.org.au/identify](http://weeds.org.au/identify).

Alternatively, producers can contact their local DAF extension officer or send pressed plant samples to the Queensland Herbarium. (Refer to [Botanical Specimens for Identification](#) from the Queensland Herbarium).

Awareness of plants that are potentially toxic can also help reduce stock losses as animals can be removed from these areas. Plants such as Noogoora burr, thornapple, crownbeard, and caltrop often flourish after flooding and can cause poisonings.

Native annuals, such as native couch, button grass and pigweed, can be toxic under certain conditions even though they are normally nutritious as part of a mixed diet. Do not allow hungry animals into paddocks where these plants may form a large part of the diet.

## Control of weeds

Control of weeds to reduce competition and allow pasture recovery after flooding needs careful consideration and the strategies used will depend on the weed species and property situation.

### Use of herbicides

Herbicides are especially useful against aggressive colonising weeds like parthenium. The aim is to reduce the competition posed by weeds against establishing pastures and prevent noxious weeds getting a foothold. Choosing whether to use either a residual or knockdown herbicide will depend on the weeds involved and their location. For example, residual selective herbicides are effective with parthenium infestations found

on roadsides or around areas where stock have been fed.

Herbicide use is limited in areas where desirable plants may be indiscriminately eliminated along with the weeds. The large size of some paddocks may also discourage the use of herbicides and it is obviously not suitable to use chemicals on those properties that are organically certified.

### Grazing management

Grazing management is critical to the recovery of flood damaged plants and the germination and establishment of desirable species.

Spelling enables pastures to grow, set seed and re-establish root reserves. It also allows seedlings to reach a stage where they will not be pulled out by grazing animals.


Short duration/crash grazing (where pastures are grazed for a few days only and then destocked) can reduce the dominance of annual weeds in some flooded pastures. Newly established sown pastures, such as buffel and Rhodes grass, respond favourably to short sharp grazing where tillering of perennial grass is encouraged and weeds are eaten. While short duration grazing can be an effective form of weed control, the health and growth stage of the perennial plants must be assessed and given first priority in stock management decisions.

It is also necessary to avoid over grazing along watercourses and in other areas favoured by stock.

Animal health must also be considered. Areas that are being crash grazed must not be stocked with hungry animals. These stock are much more susceptible to poisoning from such plants as button grass (nitrates), downs couch (cyanide), pigweed (oxalates) and crownbeard (galegine). Where Noogoora burr is present in an area, it is important that







grazing be avoided until the plant is well past its toxic two-leaf stage.

If suitable land is available, sowing forage crops can provide short term feed and allow spelling of permanent pastures. Forage sorghums are very useful, but young sorghum that becomes moisture-stressed can cause prussic acid poisoning. Be careful to watch for signs of poisoning in stock if forage crops become stressed. (Refer to [Cyanide and nitrate poisoning from sorghum crops](https://business.qld.gov.au) at [business.qld.gov.au](https://business.qld.gov.au)).

## Woody weeds

The combination of weakened pastures, bare areas and wet soil provides ideal conditions for the germination and establishment of introduced and native trees and shrubs which then have the potential to form thickets. High densities of coolabah and parkinsonia along the high watermarks of previous floods are a familiar demonstration of this.



*Woody weed growth on bare areas after flooding*

Favourable growing conditions mean that woody weeds are also more likely to establish in non-flooded areas in periods of above average rainfall.

As small seedlings, many woody plants are palatable to stock, and subsequently, grazing often keeps them in check. In very wet years, woody weed seedlings experience less grazing pressure and are more likely to survive and reach a stage where grazing no longer kills them. As the plants age, most of them become less palatable and the situation is exacerbated.

One good thing about mass germination is that many of the seeds in the soil will have germinated, thus significantly reducing the seed bank. Early control of seedlings also prevents them from reaching maturity and producing more seed.

### Use of herbicides

Specific herbicides are highly effective on most introduced woody weed species, especially when they are young. The amount of chemical required is obviously much less than when the plants are larger, and the plants can often be overall sprayed as opposed to the more labour-intensive basal bark spraying.


### Fire

Woody weeds are most vulnerable to fire as seedlings. Wet years usually produce good grass growth so timely use of fire can be an important strategy. This is particularly useful in areas where the seedlings are encroaching into open grassland areas.

It would be prudent, in most cases, to leave burning until later in the year (spring after the flood) since fire earlier in the year is likely to hamper the recovery of pasture plants. Obviously, each situation and weed being targeted will be different and advice should be sought on individual cases.

Because fuel loads can be very high after good seasons it is imperative that appropriate preparations be made, precautions taken and a permit obtained.





While fire may be a useful once-off control measure for some species, it needs to be recognised that for other plants (e.g. some wattles) provision needs to be made for follow-up fires in subsequent years. This is because, for some species, fire will kill the seedlings and, at the same time, can encourage another mass germination of seedlings. Follow up fire/s may be needed to complete the control process in these areas.

For general pastures information visit [daf.qld.gov.au/business-priorities/agriculture/plants/crops-pastures/pastures](http://daf.qld.gov.au/business-priorities/agriculture/plants/crops-pastures/pastures)

For Northern Australia beef and land management information visit FutureBeef at [futurebeef.com.au](http://futurebeef.com.au)

## Further Information

Contact the Department of Agriculture and Fisheries on 13 25 23 or visit [daf.qld.gov.au](http://daf.qld.gov.au).



*Gidgee seedlings commonly establish in years of above average rainfall*

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