

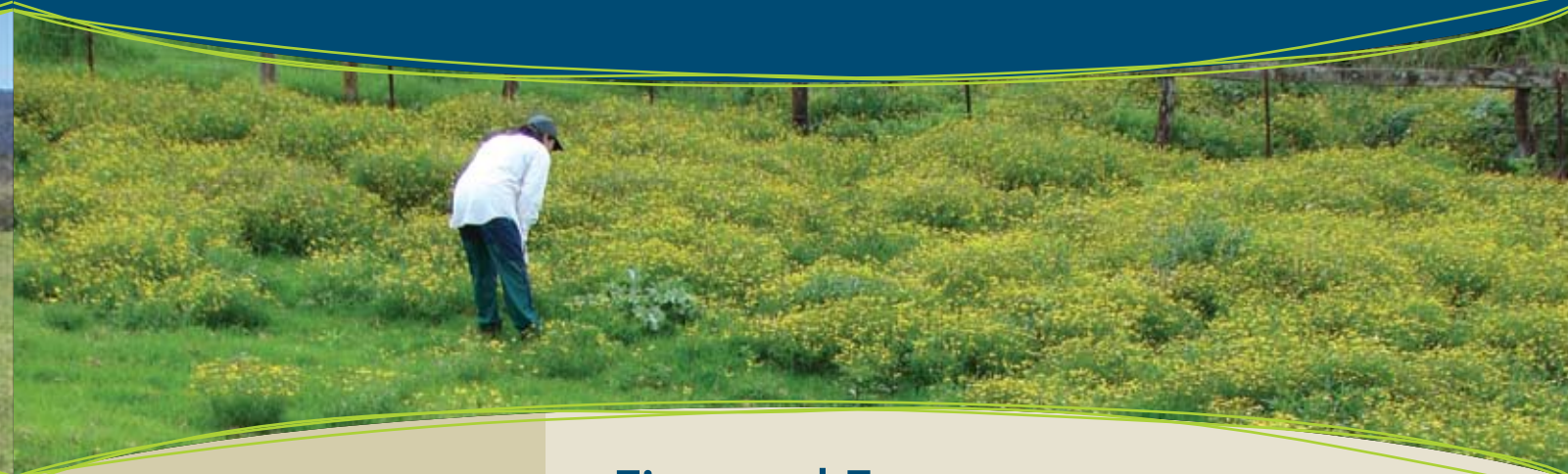
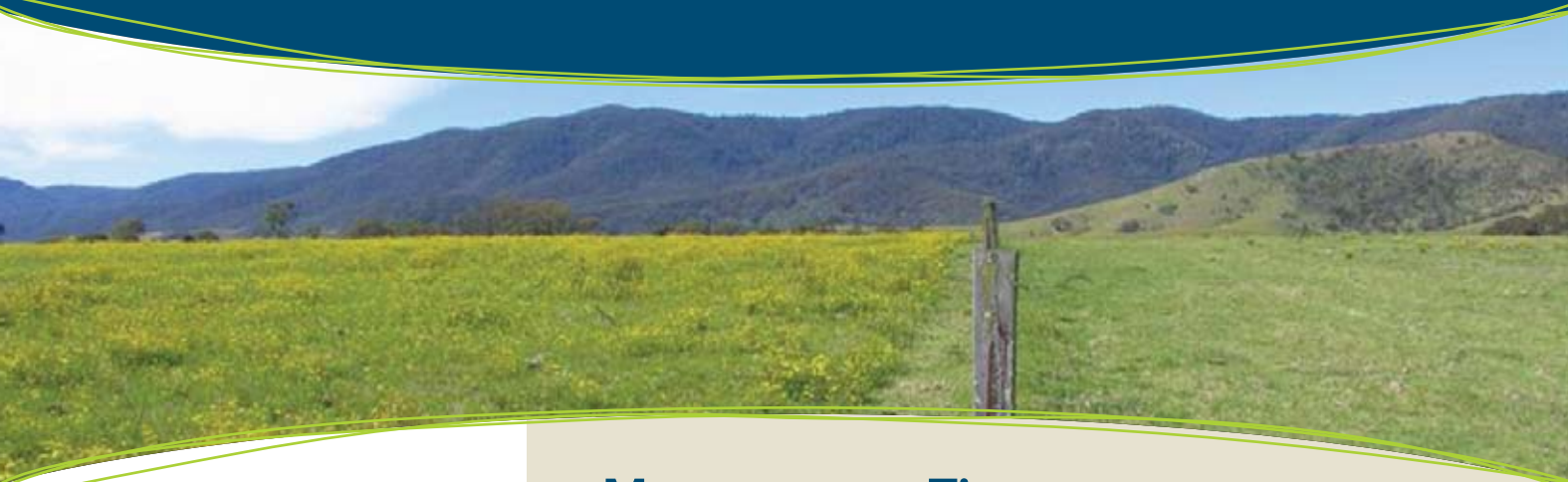


TIMELY, ACCURATE HERBICIDE USE CAN CONSIDERABLY REDUCE THE SEVERITY OF A FIREWEED PROBLEM.

## MANAGING WEEDS ON THE FAR SOUTH COAST OF NSW



# Fireweed



This guide has been compiled by the Southern Rivers CMA with assistance from the Bega Valley Shire Council, Eurobodalla Shire Council, Dr Bill Johnston and the Farming For Weeds Suppression Project Steering Group September 2009.



Funded by:



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### For further information phone:

Bega Valley Shire Weed Officers: 02 6499 2222  
Eurobodalla Shire Weed Officers: 02 4474 1000  
Department of Primary Industries: 02 6492 1733

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## Management Tips

### Develop a plan

- Work with your local Shire Council's weeds officers, Department of Primary Industry staff and agronomic advisors to develop strategies for control.
- Develop a 3-year rolling plan for managing fireweed on a paddock-by-paddock basis.
- Aim to control known infestations and reduce the likelihood or rate of spread to clean areas.
- Ensure that broad-leafed weed control is costed into pasture and crop sowing budgets.
- Don't over-stretch yourself – prioritise actions and only do what can be done well in a single year.

### Manage livestock

- Areas where livestock congregate such as laneways, yards and holding paddocks, should be kept clean.
- Practise good grazing management and maintain late-summer ground cover to reduce fireweed establishment.
- Don't heavily graze paddocks containing fireweed with cattle or horses, and always ensure that cattle and horses have sufficient pasture so they are not forced to graze fireweed.

- Slashing mixes fireweed with the grass and makes it impossible for cattle to avoid some consumption; late spraying makes fireweed more palatable. Neither practice can be recommended in grazed paddocks.
- Sheep or goats can be a highly effective part of a long-term management strategy.

### Take Action!

- Coordinate action with neighbours. Maintain a 50m 'fireweed break' around your property boundaries, especially if neighbours have undertaken control measures.
- Control isolated and scattered infestations early – this will avoid bigger problems.
- Target seedlings in autumn.
- Care for your health – wear approved personal protective equipment when handling and applying herbicides, use gloves when hand-pulling, wash hands carefully after handling fireweed and avoid inhaling smoke from burning fireweed.



Fireweed is a member of the daisy family. It is widespread in NSW coastal pastures, where it can form dense stands in favourable years.



Recognised by its dagger-shaped leaves and golden-yellow flowers with 13 petals, fireweed may flower and set seed continuously.



Although some plants may live for 2 seasons, most germinate in late summer and autumn and may die from insect and disease attack the following summer.



Fireweed contains Pyrrolizidine Alkaloids (PAs), which are poisonous to susceptible livestock. Cattle and horses avoid grazing fireweed. However, if they are forced to graze fireweed they may suffer cumulative liver damage, which can be fatal. Sheep and goats tolerate PAs and find fireweed moderately palatable.

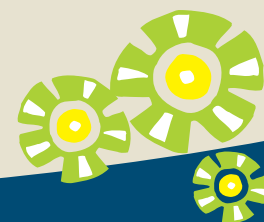
## Fireweed Facts

### Working against you

- Highest seedling numbers establish in autumn after significant rainfall (more than 20mm).
- High seedling numbers result from a late summer to autumn dry period, followed by autumn rain and then follow-on rain.
- Seedling survival is highest in years where soil moisture builds up and lasts through winter.
- Bare ground (cultivated paddocks, earthworks, etc) is where fireweed establishes best.
- Lack of ground cover (especially in the autumn) and bare patches in pastures caused by over-grazing or insect damage, will increase fireweed establishment.
- Late herbicide application, slashing or grazing can rejuvenate adult plants, which may continue to grow and flower for a second season.
- Grazing with cattle only can increase establishment as cattle will selectively avoid eating fireweed wherever possible.
- More than 10 flowering plants/m<sup>2</sup> in spring indicates a major problem for the following year. Therefore control small infestations early!

### Working for you

- Seeds germinate in waves (cohorts), and this gives a good chance of control with timely herbicide applications.
- Seedlings are weak, frost-susceptible, drought-prone and uncompetitive. This results in a high seedling attrition rate.
- Following flowering and seeding, older fireweed plants may eventually succumb to attack by fungus, moulds, and root and stem eating insects.
- High pasture mass and shading reduces establishment.
- Maintaining healthy pastures through good grazing and soil management will suppress germination.
- Sheep and goats find fireweed palatable, and over time will reduce its presence.
- Removal of isolated plants by hand can be effective in low-density stands (always wear approved personal protective equipment).





Management Calendar

KEY POINTS	AVOID HERBICIDE USE		Target seedlings after Autumn rainfall. May and June are the best months for control.				Low prospect of herbicide success		This is the on-farm planning window			
GROWTH STAGE	Dead	Increasing germination >>>>>				Establishment and early growth (slow growth in July)		Flowering and senescence		Death		
MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ACTIONS	CRITICAL TO AVOID HERBICIDE USE  MAINTAIN GOOD GROUNDCOVER		Bromoxynil + Diflufenican (various trade names) most useful and cost-effective.				Bromoxynil herbicides may be effective up to early August, but at increasing rate, cost and potential damage to non-target species.		Avoid broadacre herbicide use; success and evaluation period; plan implementation strategies for next year.  Spot spraying flowering plants may be effective with herbicides registered for that use.			

REMEMBER!

Read the label. Heed the label. Seek expert advice if unsure.

Only use herbicides registered for use in NSW for the purpose intended.

Follow all regulations and guidelines for using and storing herbicides.

Legal Obligations  
(Noxious Weeds Act 1993)

Fireweed is listed as a Class 4 noxious weed in all southeast NSW Shires. Landholders have a responsibility to control fireweed as detailed under their relevant Shire's Fireweed Management Plan. Failure to do so may result in Shire Councils taking legal action to ensure effective controls are carried out.

(The SRCMA, BVSC or ESC do not endorse any particular product or company).

Keys to Success

- May and June are the most successful months for herbicide application. Effectiveness of control is greatly reduced after the end of July.
- Target seedlings. The boom-spraying window opens 2 to 3 weeks after the first major autumn rainfall and is best before 10% of the first of the seedlings open their flowers. Boom-spraying may not be successful at other times and costs of control can increase greatly.
- For each particular situation, always use rates of herbicide and water as recommended on product labels.
- Apply known volumes of herbicide and water. This can only be achieved using equipment that is calibrated to the speed of the spray vehicle.
- Use a foam marker as it is very difficult to follow wheel tracks in pasture.

Commonly used herbicides

- Seedlings are killed by low rates of Bromoxynil alone (various trade names) or Bromoxynil + Diflufenican (various trade names).
- One-off application of Bromoxynil + Diflufenican 2 to 3 weeks after the first major rainfall in autumn can significantly reduce plant numbers for up to 3 years.
- Grazon Extra® can be used for spot-spraying flowering plants.
- Hotshot® can be used for spot-spraying flowering plants to 30cm.
- Metsulfuron-methyl can be used for boom or spot spraying.
- Nufarm Amicide 625® can be used for boom spraying.
- The herbicides listed above are registered in NSW for use on fireweed. Approvals and conditions for using herbicides can change – check out the latest at [www.apvma.gov.au](http://www.apvma.gov.au)



- 1 Fireweed germinates in waves following rainfall of more than 20mm over a couple of days in autumn.  
  
Seedling density is highest in bare patches.
- 2 Seedlings have distinctly red stems with colouration extending to the underside of cotyledons and juvenile leaves.
- 3 Seedlings emerge 12-24 hours after rain.
- 4 Cotyledons are followed by the first 'true' leaf.  
  
Note the red stem and undersides of the leaves.
- 5 Subsequent leaves are produced alternately on the elongating stem.
- 6 The best time to spray Bromoxynil-based herbicides is when the first autumn-germinated cohort reaches the 8 to 10 true-leaf stage. Cohorts younger than this will also be killed. Plants become increasingly difficult to kill once they flower and their stems become woody.
- 7 Slashing or late application of herbicides may reinvigorate plants that otherwise would die.
- 8 This is the same plant, 2 weeks after slashing.