



Department of
Primary Industries

Evolution not revolution

Better community engagement for invasive
species management in NSW

The team: Jodie Bartlett-Taylor, Birgitte Verbeek,
Elissa van Oosterhout, Wendy Gibney, Lynette McLeod



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The Candle Problem



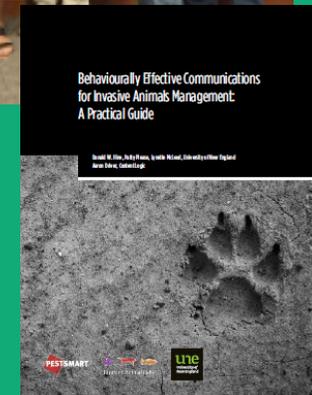
Influences



Dr Doug McKenzie-Mohr
Founder and trainer,
CBSM Framework



Program 4 and Project 4E11
VET Courses on strategic
pest management of the
Invasive Animals CRC



Influences



Bruce Howie
Agricultural Extension Consultant
C-Qual Agritelligence Consulting Services



Dan Kaufman
Communications Consultant
Media Survival

Community Engagement – Moving people towards action









Authority
Interests
Political
Politics
Influences
Relationships

IGNORANCE
AWARENESS

Relationships
What matters
- practical
What motivates

"I'm working
to protect our
lifestyle."

I LOVE MY
LIFESTYLE

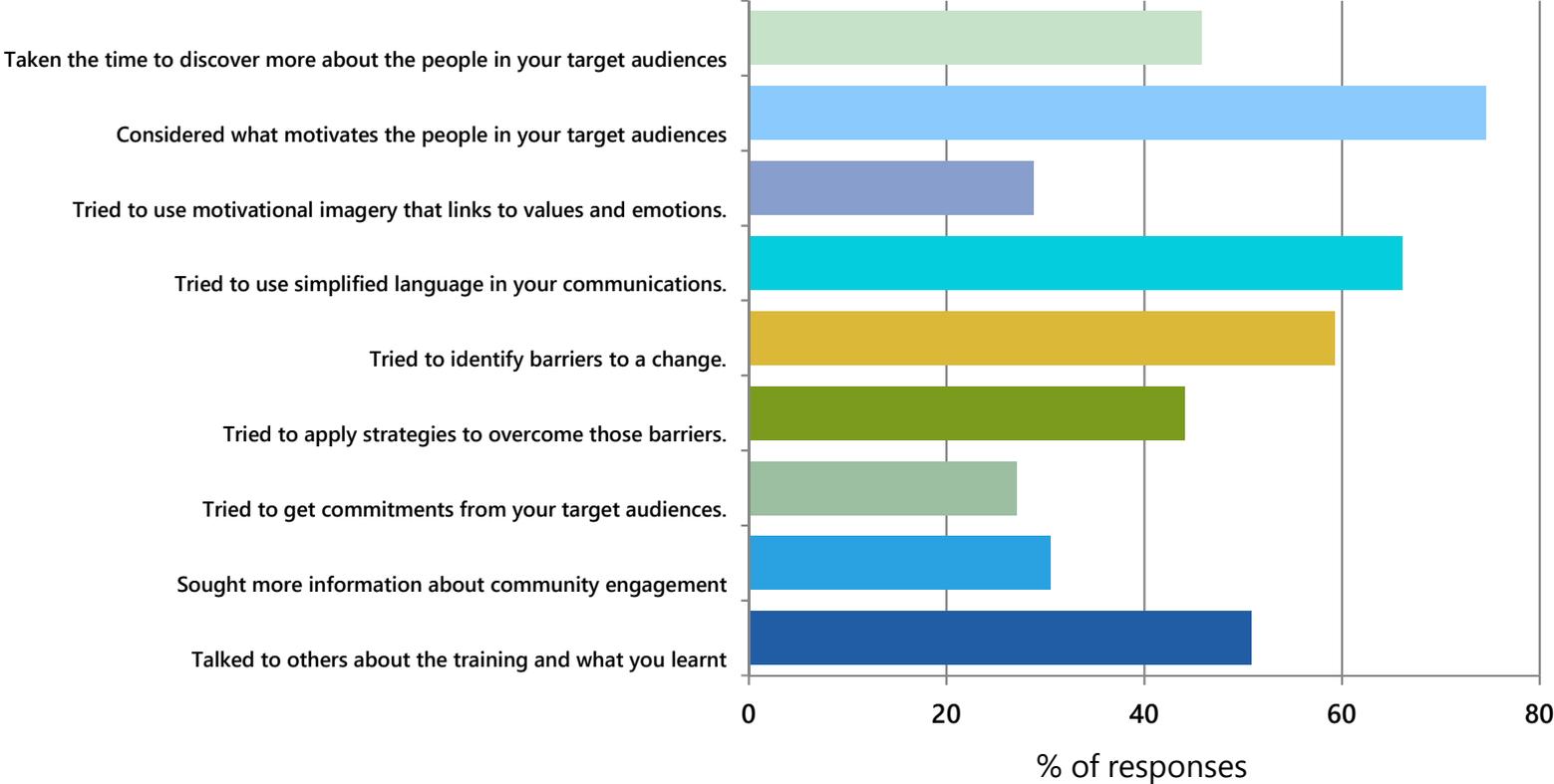


biosecurity encompasses pests, weeds
these are RISKS to our

Biosecurity encompasses
pests, weeds & disease.
these are RISKS to our lifestyle
To find out how to protect
your place, contact mil

Have people evolved in their work?

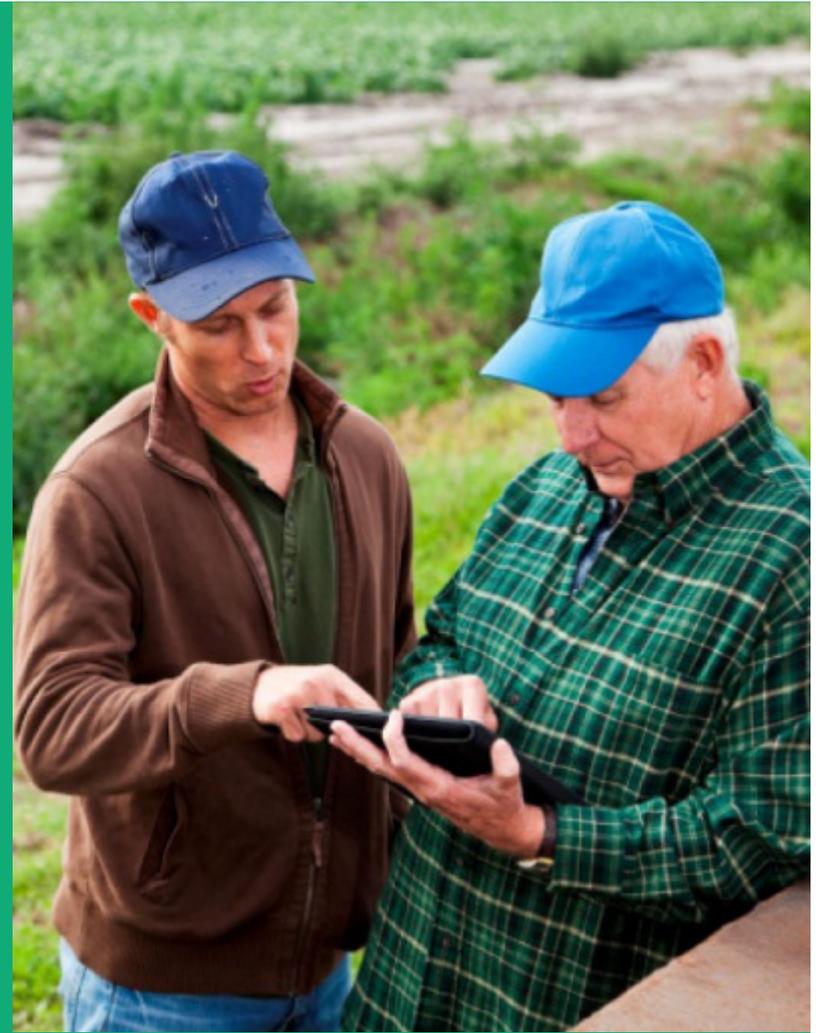
Since attending the Community Engagement - moving people towards action training, have you done any of the following? (61 responses)



Motivational messaging

Getting people to do what you want them to do by:

- Making a positive connection between the audience and the issue
- Triggering a values-driven response
- Proven to be more effective for long-term behaviour change than issue/threat-based messaging





Department of
Primary Industries

Noxious and environmental weed control handbook

a guide to weed control in non-crop,
aquatic and bushland situations

NSW DPI MANAGEMENT GUIDE, SIXTH EDITION



Invasive Plants and Animals Branch

www.dpi.nsw.gov.au



Department of
Primary Industries

New South Wales Weed Control Handbook

A guide to weed control in non-crop,
aquatic and bushland situations

NSW DPI MANAGEMENT GUIDE, SEVENTH EDITION



Biosecurity matters...

Invasive Plants & Animals Branch

www.dpi.nsw.gov.au

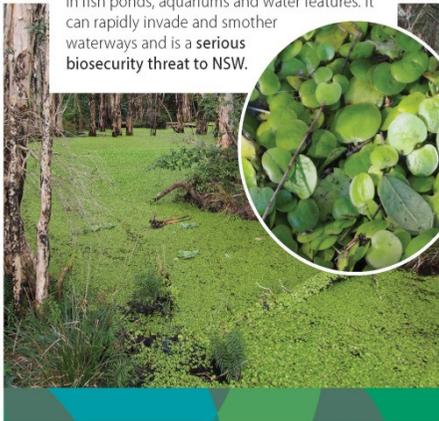


Department of
Primary Industries

Watch out for and report **FROGBIT**

HAVE YOU SEEN THIS ILLEGAL WATER PLANT?

Frogbit (*Limnobium laevigatum*) is a floating freshwater plant from Central and South America that has been kept and traded for use in fish ponds, aquariums and water features. It can rapidly invade and smother waterways and is a **serious** biosecurity threat to NSW.



www.dpi.nsw.gov.au

Watch out for and report **FROGBIT**

Frogbit is **Prohibited Matter** under the *Biosecurity Act 2015*, and dealing with it in NSW is an offence.

The first known occurrences of frogbit in NSW were found recently in a natural waterway in a bushland reserve and in fish ponds on private property at Green Point near Forster. It has also been found advertised for sale by online sellers near Sydney.

LOOK FOR: plants floating on the water surface with smooth, rounded, fleshy green leaves up to 4 cm across, with sponge-like sections on their undersides

CHECK: fish ponds, aquariums, fish tanks, water features, dams and local waterways

REPORT IT: by calling the MidCoast Council Weed Biosecurity Officer on (02) 6591 7222 or the NSW Invasive Plants and Animals Enquiry Line on 1800 680 244

In order to find and eliminate this plant from NSW, an amnesty period has been announced until the 31 August 2017, during which time people dealing with the plant will not be fined or prosecuted, and reports will be treated confidentially.



www.dpi.nsw.gov.au



"So glad we reported it!"

We noticed these plants covering the lake that weren't there before...

...we called Council and it turned out to be frogbit, a new weed that ruins waterways! They acted fast and our call helped save the lake."



Always contact your local council weeds officer if you notice unusual plants, or call the NSW Invasive Plants and Animals Enquiry Line **1800 680 244**

For more information search 'frogbit' in NSW WeedWise at weeds.dpi.nsw.gov.au

NSW WeedWise

BIOSECURITY ACT 2015



Biosecurity Regulation 2017

WEEDS

The financial impact of weeds on agriculture alone is approximately \$2.6 billion in lost production and \$1.8 billion in control activities every year. Effects on social and environmental values include a decline in native biodiversity due to competition and human health impacts such as triggering hay fever and allergies.

The biosecurity framework and tools safeguard our economy, environment and community.

This factsheet provides a summary of management arrangements for weed biosecurity risks in NSW.

More detailed information is available in the **Biosecurity Regulation 2017, Biosecurity Order (Permitted Activities) 2017 and other documents at dpi.nsw.gov.au/biosecurityact**



GENERAL BIOSECURITY DUTY

OUTCOME IS TO PREVENT, ELIMINATE AND MINIMISE RISKS

- Any land managers and users of land have a responsibility for managing weed biosecurity risks that they know about or could reasonably be expected to know about.
- Applies to all land within NSW and all waters within the limits of the State.
- Your local strategic weed management plan will provide guidance on the outcomes expected to discharge your duty for the weeds in that plan.

CONTROL ORDER

OUTCOME IS TO PREVENT, ELIMINATE, MINIMISE OR OTHERWISE MANAGE

- Duty to notify the presence or suspected presence, certain movement controls and destruction requirements for tropical soda apple, boneseed and parthenium.

NOTIFYING

1130 to the National Herbarium of New South Wales to see if the plant is present within NSW, at nswherb@dpi.nsw.gov.au

2011 the species is considered absent from NSW, you need to notify the Invasive Plant and Animals Emergency Hotline on 1300 680 244 or by email to spis@dpi.nsw.gov.au

MANDATORY MEASURES

OUTCOME IS TO PREVENT, ELIMINATE OR CONTROL THE RISK

- A person cannot import into the State or sell any plant listed in Schedule 2 of the Biosecurity Regulation.
- A person cannot import into the State, a species of vascular plant if that species is not present in the State, unless 20 days prior notification has been provided to NSW DPI of the plant and its proposed location.
- A person cannot import into the State from Queensland, certain machinery or equipment unless certain conditions are met to remove the risk of parthenium weed.

BIOSECURITY ZONE

OUTCOME IS TO PREVENT, ELIMINATE, MINIMISE OR OTHERWISE MANAGE

- Three zones established to manage high priority weeds - where a person must notify their local control authority within one working day of the presence or suspected presence of a new infestation of the weed, and take action to eradicate those weeds, or destroy as much as practicable and suppress its spread.

Alligator weed

- Zone established for all land within the State with exception of the Greater Sydney and parts of Hunter Local Land Services regions.

Biosecurity Act 2015



By law biosecurity is everybody's business. Weeds threaten our biosecurity and come under the new Biosecurity Act in NSW

Every person and organisation needs to do their bit to protect the economy, environment and community from the risks posed by weeds. This is now part of your "general biosecurity duty"

WHAT CAN YOU DO?

- use NSW WeedWise to find out about the biosecurity duties for weeds in your area (go to weeds.dpi.nsw.gov.au or get the app)
- talk to your local council weeds officer about weeds on your property
- control and prevent weeds spreading on and from your property



For more information about the *Biosecurity Act 2015* visit www.dpi.nsw.gov.au/biosecuritylegislation or email biosecuritylegislation@dpi.nsw.gov.au



1080 in Australia: why and how it is used

April 2018, Primefact 1636, First edition

Invasive Plants and Animals Unit

Coordinated broad-scale baiting with 1080 helps keep pest animal populations low. Large numbers of pest animals in the landscape can impact profitability – and even viability – of farming, damage the environment and lead to extinction of native animals and plants. Keeping pest animal numbers low means we need to control less of them in the future.

The facts:

- Only a small amount of 1080 is needed to kill wild rabbits, feral pigs, foxes, feral cats and wild dogs. It works by stopping the function of vital organs leading to death.
- 1080 is a naturally occurring chemical found in over 40 Australia plants. It is naturally broken down in the soil and water by microbes, fungi, bacteria and plants so there is very little or no impact on the environment.
- Native marsupials are less sensitive to 1080 than dogs, foxes, cats, pigs and rabbits. That's one reason why it is such a good poison to use in Australia. People and birds are the most tolerant to 1080 followed by reptiles, amphibians and fish.
- The use of 1080 is highly regulated in NSW. Only Authorised Control Officers can prepare and supply poison baits. People that use the baits must also complete training and provide proof of training before baits will be supplied.
- 1080 has been thoroughly tested in many different environments over many years to ensure it will kill pest animals in a safe and effective way. This includes studies on the best bait material to use for the target pest animals and to reduce the risk to non-target animals. The placement of baits is recorded and baits are generally spaced out over long distances to reduce the risk of animals taking multiple baits.
- 1080 has been assessed as causing mild to moderate suffering of affected animals, but when this happens the animal may have already become unconscious and unable to feel pain. Time to death can range from 5-48 hours after eating a lethal amount of 1080.
- Domestic animals such as dogs, like their wild cousins, will be killed by 1080 so you need to ensure you keep them away during a baiting program which will be identified by appropriate signage.
- Seasonal conditions affect how long baits will remain toxic after being put out. Things like the time of year, the amount of rain and the type of bait will all have an influence.

www.dpi.nsw.gov.au



1080 in Australia: why and how it is used

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- 1080 doesn't stay in the environment – it is naturally broken down in the soil and water by microbes, fungi, bacteria and plants. Only small amounts (micrograms) of 1080 are used in poison baits as there is very little or no impact on the environment. The placement of baits is recorded and baits are generally spaced out long distances to reduce the risk of animals taking multiple baits.
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NSW Department of Primary Industries, May 2018



Answers to frequently asked question about 1080

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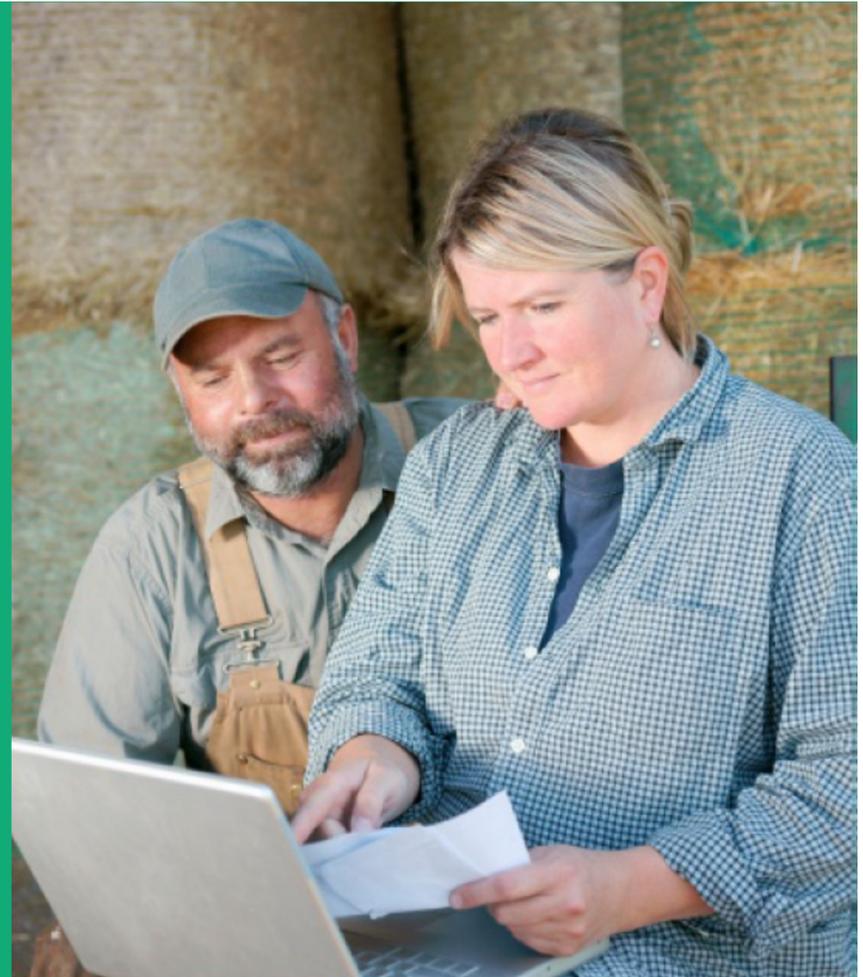
Plain language

"Every word should be simple enough to understand without picking up a dictionary or google-ing it"

"Technical terms are OK when no simpler words can be used AND if those terms are essential"

"Complicated terms should never be used when simpler terms can be used instead"

Now required under NSW Parliamentary Counsel's Office Plain Language Policy
https://www.legislation.nsw.gov.au/dp2-pco_plain_language_policy.pdf



Confusing terms.....

seed bank

ground cover

competition

scouring

taproot

eradicate

monoculture

palatable

integrated control

program

translocation

biomass

provision of harbour for vermin

senescence

noxious

acting as vectors

visual amenity

submerged rosette

abscission

noxious

flow regime

morphological

sucker

moisture stress

false break

head pressing

eradicate

There was comedy...

river control structures

– what are these? Bridges? Dams?

illegally-propagated

– sounds like the plant is breaking the law by reproducing

It was romantic...

senescence of winter pastures

– sounds poetic, but I have no idea what it means

an ill-thrift condition

– sounds like something from a Jane Austen novel

Tears were shed...

This sentence made Dan cry:

Furthermore, there are a number of native *Rubus* species in Australia that are not part of the *R. fruticosus* aggregate with *R. pavifolius* growing most commonly in association with *R. fruticosus* agg. species.

Here's one close to home.....

integrated control program

– if this means using a number of different techniques,
then it's more behaviourally effective to say so

Applications of CBSM

34 weeds-related projects have commenced (over 4 years) in partnership with weeds professionals at local and regional levels.

2 projects have informed interventions that have successfully changed behaviours
(tropical soda apple and lantana)

Change in tropical soda apple control

Instances of landholders (n=21) in the Tallawudjah Creek Valley, NSW doing nothing and doing as advised (in terms of 7 desired control behaviours) before (2015) and after (2017) implementation of a community-based social marketing (CBSM) strategy



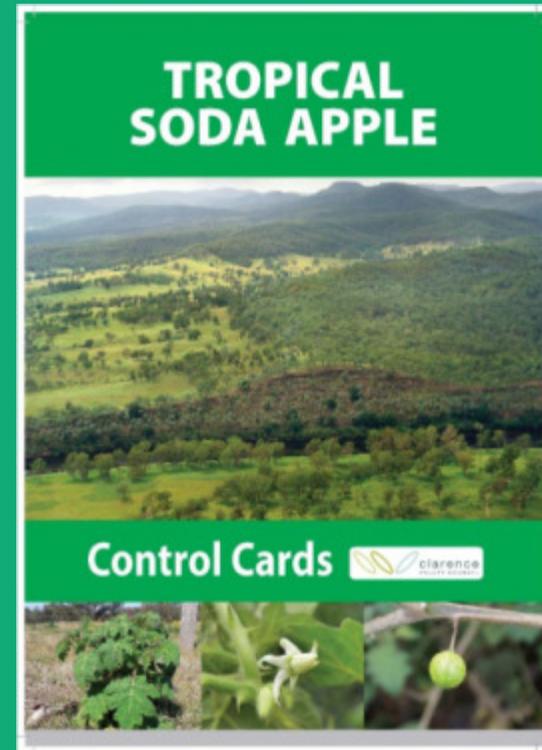
Change in lantana infestations

	Infestation levels (ha) June 2016 – July 2017		
	June 2016	July 2017	Reduction
Pilot area	68.95	24.45	44.5
Control area	3.35	3.35	0

Control cards

- Part of a strategy to increase control by landholders
- Informed by behaviour selection and barrier and benefit research (CBSM Steps 1 and 2)
- Plain language
- Motivational framing

75% of landholders found the Control Cards made a difference to their control efforts



- sets of 8 laminated A4 cards on a ring clip
- 1 behaviour per card
- taken to property meeting by the weeds officer and shown to the landholder
- offered to landholder to keep and use

1 *"Make it worthwhile... finish the job"*

Check control sites for regrowth

- Plan to check control sites, and allocate time to do it
- Treat regrowth early and eradication will be possible
- Find control sites by marking them on a map or with a physical marker

Checking for regrowth is necessary after all tropical soda apple control treatments

2 *"We got on top of TSA by not letting our cattle anywhere near it"*

Restrict grazing

- Keep cattle away from plants even if you have not seen any fruit
- Restrict access until plants have been controlled and regrowth or new plants have not been found
- Move cattle or fence off areas where plants are present
- Hold cattle for 6 days if they have had access to plants

Cattle smell fruit hidden in pasture. One animal can spread hundreds of seeds by eating one fruit

3 *"We just hold them for six days and then they're clean"*

Hold cattle for 6 days

- Hold new cattle and any that have been in paddocks with tropical soda apple
- Keep cattle in clean paddocks for at least 6 days before sale
- Hold cattle in an area that can be closely inspected for seedlings. Rotational paddocks, holding yards, quarantine paddocks or electric-fenced areas are all suitable
- Check holding areas regularly for seedlings

TSA seeds become ready to sprout when they are eaten by cattle and passed within 6 days. Seeds passed after that won't sprout

4 *"Find them before they get out of hand"*

Check for new plants

- Check cattle camps, yards, feed-out areas and holding paddocks
- Check waterways, drains, gullies, floodplains, flats and flood debris
- Check fence lines, forested areas, tracks, roads and feral animal haunts
- Check as often as possible during spring and summer

Tropical soda apple plants are brought in by cattle and water

Structure

Local, personal motivational image →

Landholder quote reflecting Benefit 1 →

Clearly stated action →

Dot points addressing main barriers →

Why care/technical issue →

Instructional images →



“Make it worthwhile... finish the job”

Check control sites for regrowth

- Plan to check control sites, and allocate time to do it
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Checking for regrowth is necessary after all tropical soda apple control treatments



CHECK

ERADICATE TROPICAL SODA APPLE

Spray > Remove and dispose of fruit



“You cover a bigger area, but you have to get them before they fruit”

Spraying kills plants, but doesn't kill the seeds inside the fruit. Fruit must be removed.

- Non-chemical methods (digging, pulling) and low-volume chemical methods (cut-stump) are equally effective
- In a backpack or handheld sprayer use 50 mL Grazon Extra® in 10 L water, with a wetter
- In a spray tank, use 500 mL Grazon Extra® in 100 L water, with a wetter
- If spraying within 5 metres of a waterway, use 20 mL Roundup Biactive® and 1 g Brush-off® in 10 L water (in a backpack or handheld sprayer)
- Read the product labels and permit PER12942 (Expiry 30 June 2017)



Contact Clarence Valley Council if you find this Prohibited Plant (02) 6643 0200



“You cover a bigger area spraying, but you have to get them before they fruit”

Spray > Remove and dispose of fruit

- Non-chemical methods (digging, pulling) and low-volume chemical methods (cut-stump) are equally effective
- In a backpack or handheld sprayer use 50 mL Grazon Extra® in 10 L water, with a wetter
- In a spray tank, use 500 mL Grazon Extra® in 100 L water, with a wetter
- If spraying within 5 metres of a waterway, use 200 mL Roundup Biactive® and 1 g Brush-off® in 10 L water (in a backpack or handheld sprayer) Read the product labels and permit PER12942 (Expiry 30 June 2017)

Spraying kills tropical soda apple plants, but doesn't kill the seeds inside the fruit. Fruit must be removed



CONTROL

Landholder' response:

Landholders: what do you think about the **control cards**?



Landholders: have the **control cards** made any difference?



Weeds officers response:

"they helped give consistent messages and information"

"landholders appreciated the quotes made by others dealing with the same problem"

"I found the cards an excellent resource. As the landholder asked questions I could flick to the relevant card and there was the answer plain as day. It made it easy and consistent"



**Change what people do
– not just what they know**

Cathy Moore

Thank you.