

Friends of Grasslands
supporting native grassy ecosystems

Identifying & Managing Weeds

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Presentation to Bellarine GIG 25 August 2021

Identifying & managing weeds:

to restore remnant grassy vegetation - FOG's experience?

- Our focus “restoring remnant grassy vegetation” - weeding is a big component. Approach differs from that of “regenerative agriculture”.
- What needs to be learnt?
 - plant identification
 - plant life cycles
 - coming up with a plan
 - what methods to use
 - if using equipment & herbicide, what training is required?
 - collateral damage
 - avoiding weed successions – followup treatment, add native seed or plants into bare ground
- Two case studies.

start with a vision

what is the long term objective?

- Is the weeding focus on a landscape, site, or patch within a site?
- Is the focus on a single weed (e.g a weed with capacity to transform the area - newly established or widely established e.g ALG) OR multiple species?
- Is the focus to manage habitat for a particular, or groups of, species?
- Or is the focus more educational/aesthetic?
- What is your time scale?

This is the beginning of your weed strategy plan!

Plan your weeding activity by season and species

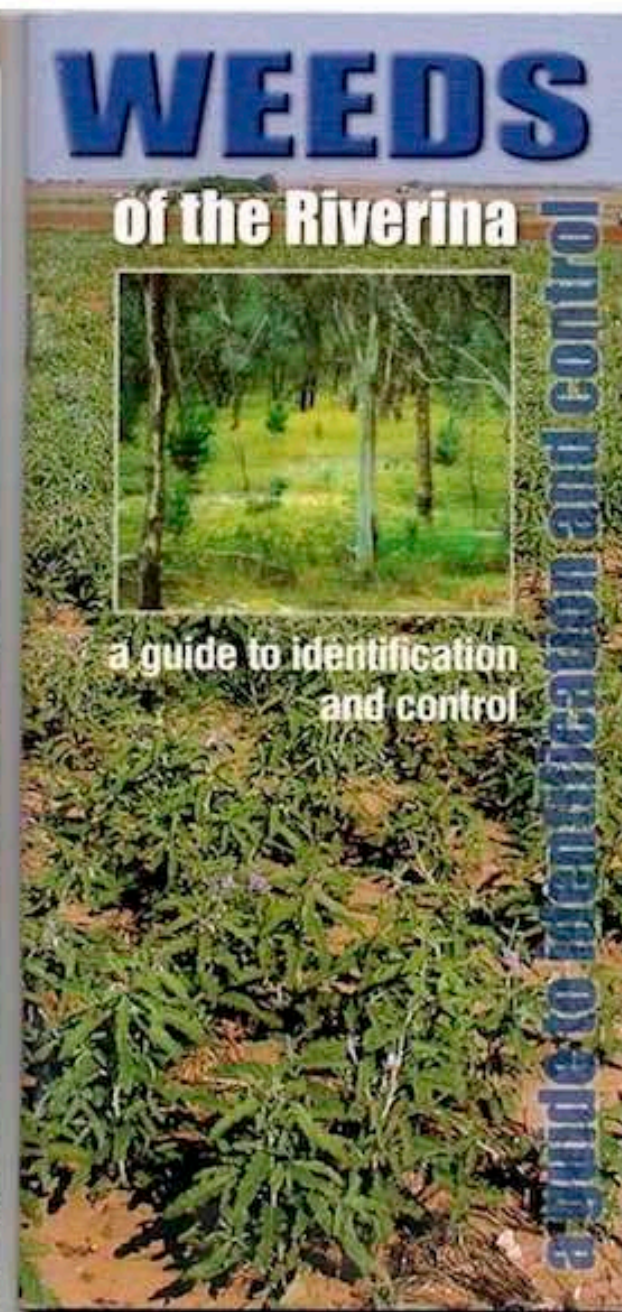
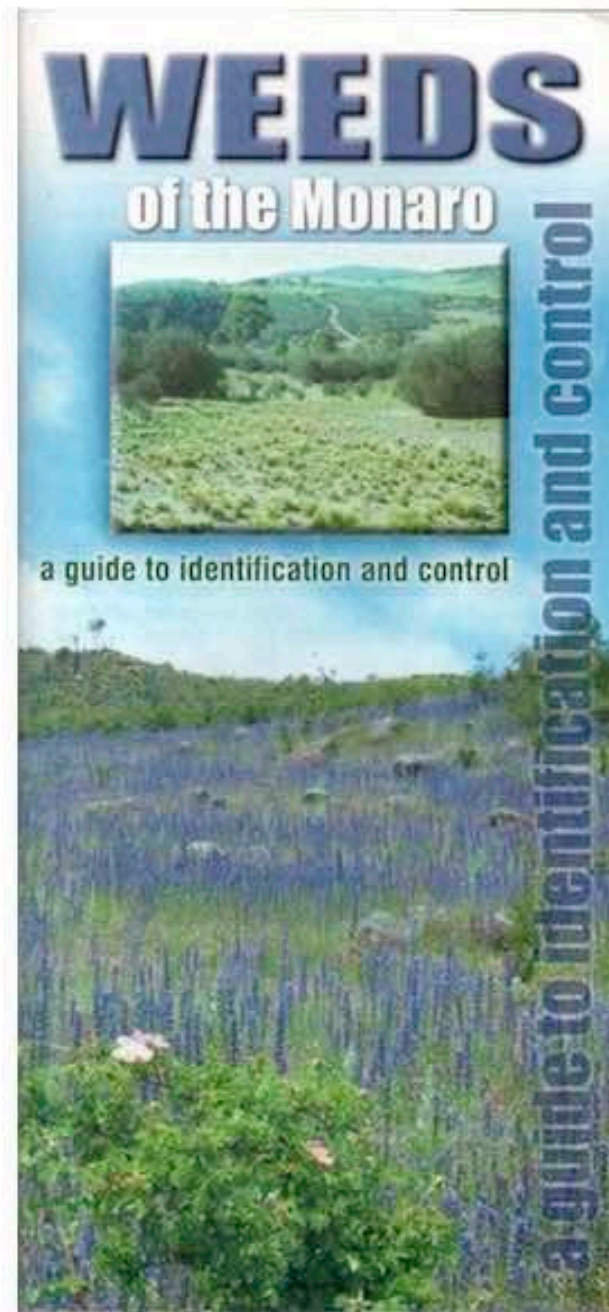
Consult resources, such as weed calendars specific to your region, to help you focus on the highest priority tasks

Common Name	CONTROL METHODS																	
	Summer									Autumn								
	Hand pull	Dig	Cut (no chemicals)	Grazing	Competitive Pasture	Cut & paint	Drill & fill	Spray	Biological	Hand pull	Dig	Cut (no chemicals)	Grazing	Competitive Pasture	Cut & paint	Drill & fill	Spray	Biological
African boxthorn																		
African lovegrass																		
Blackberry																		
Broom spp (Cape/Montpellier & Scotch/English)																		

Molonglo Catchment Group Weed Information Pack																		
WEED CONTROL CALENDAR																		
The following calendar provides a seasonal overview of the control options available for each species in the Molonglo Catchment Priority Weeds List. It can be used as a quick reference guide to plan your management activities throughout the year. Refer to the individual weed fact sheets for detailed information about how to implement controls. If you require assistance in weed management planning contact your local council or Parks, Conservation and Lands ACT.																		
Common Name	CONTROL METHODS/SEASON																	
	Summer				Autumn				Winter				Spring					
	Hand pull	Dig	Cut (no chemicals)	Competitive Pasture	Cut & paint	Drill & fill	Spray	Biological	Hand pull	Dig	Cut (no chemicals)	Competitive Pasture	Cut & paint	Drill & fill	Spray	Biological	Hand pull	Dig
African boxthorn																		
African lovegrass																		
Blackberry																		
Broom spp (Cape/ Montpellier & Scotch/English)																		
Burs (Neopoma & Bathurst)																		
Chilean needle grass																		
Cootamundra wattle																		
False acacia / Black locust																		
Fireweed																		
Gorse																		
Hawthorn																		
Horseweed																		
Peterson's curse & viper's bugloss																		
Pine (Monterey / Radiata)																		
Poplars (White & Lombardy)																		
Privet																		
Serrated tussock																		
St John's wort																		
Sweet briar / briar rose																		
Thistles (Scotch / Illlyrian & Nodding)																		
Tree of heaven																		
Willows (except weeping (Salix babingtonii) and two types of pussy willow (S. v. richardsonii and S. v. cuneifolia))																		

plant identification & life cycle

- to begin, how to distinguish one plant from another!
 - advice to beginners - learn and target one species at the time
 - after a while, learning multiple species becomes easier
- plants have a life cycle
 - seed, seedling, plant, flowering, seed set and seed dispersal
 - annual or perennial
- knowing the life cycle -
 - helps to know when & how to intervene, e.g.
 - bagging and removing seeds
 - leaving spent (annual) plants
 - best time to use herbicide, to chip, to mow,



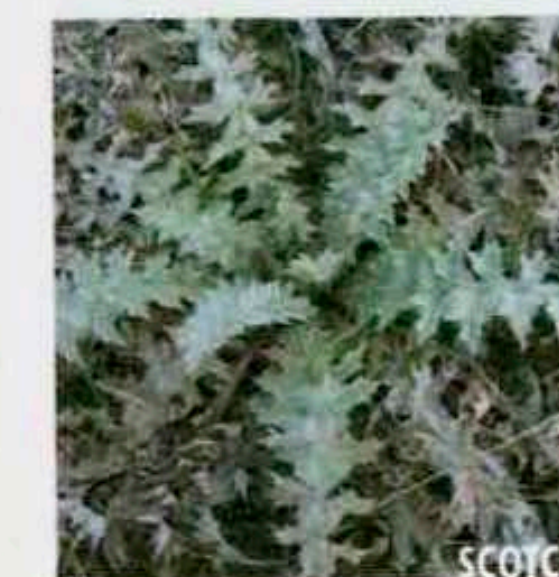
HERRACEOUS

THISTLES



HERRACEOUS

THISTLE ROSETTES



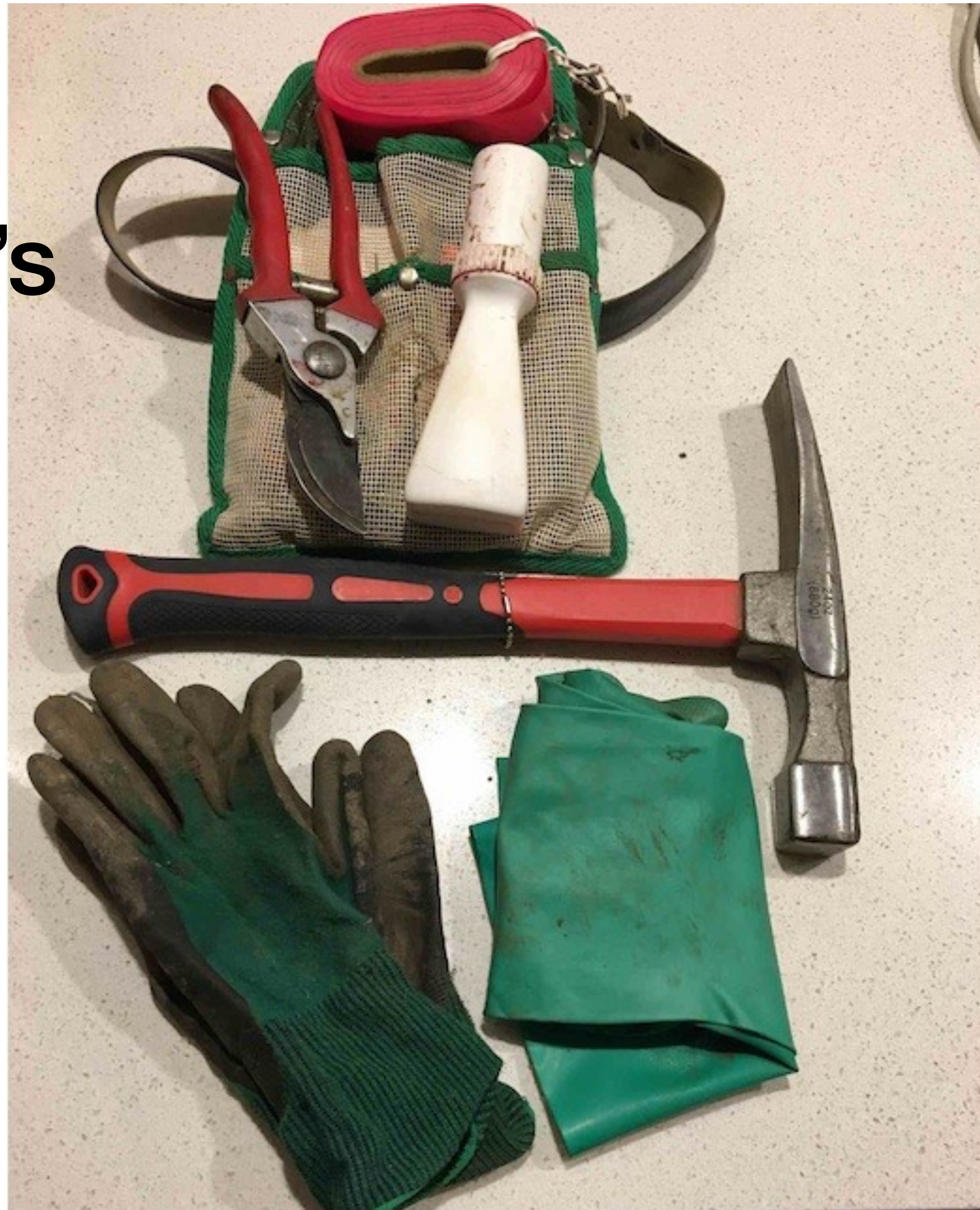
methods & equipment

- **simpler methods** (non herbicide) - hand pulling, removing and bagging seeds, chipping, Fiskars tool
- **herbicide**
 - weeding wand, cutting & daubing, knock-down v selective (choice of herbicide), spot & boom spraying
 - chem. cert. (learn labels, safety & storage).
 - spray conditions – dry, still.
 - plants in active growth – otherwise maybe need to be trimmed or burnt first if foliage dry/senescent?
 - surfactant, penetrant for many ‘tough’, waxy or hairy plants.
- SLASHER, an organic alternative to poisons - good against annuals – non residual, fast acting, not cheap however
- slashing, trimming, burning, grazing, steam and flame weeding, planting, raking, scrape & sowing, biocontrol, holistic management, regenerative agriculture all have a role to play.

Note: prevent or minimise collateral damage



Margaret's toolkit



Burning and mowing



SCRAPE AND SOW Mini-Demonstration at Yarramundi Grassland 2018-19

1. 5 cm of topsoil scraped off and removed – took away nutrients and removed weed plants and seeds.
Oct 2018
2. Herbicide required (several times) to defeat resprouting weeds e.g. Plantain. Apr 2019. Soon after, native species grass + forb were sown as seed into scrape
3. Only sparse growth on sandy bed after very dry season.
FOG visit Dec 2019
4. Good summer rain made a world of difference – lush plants in flower
Apr 2020



Weed management & monitoring

- So many things to learn - join a group
- Maintain, review & adapt vision
- Start slowly, plan (skills, resources, equipment), keep paper and photo records & monitor
- Bradley method of bush regeneration is a fine place to begin
- Integrated (with other objectives) weed management plan - suitable to your situation
- Seek grants and assistance
- Share experience with others & be relaxed

What else is out there to help - 1?

- Harry Rose and DPI team - *Grasses of the NSW Tablelands* and other NSW regions
- Richardson, Richardson, Shepherd - *Weeds of the South East*
- Adam Muyt - *Bush Invaders of South-east Australia*
- Sindel and Coleman – *Weed Detection and Control on Small Farms*
www.ruralfutures.une.edu.au
- Molonglo Catchment Group – *Weed Information Pack*
- Web search often informative for specific weed problems
- Canberra Nature Map - <https://canberra.naturemapr.org/>

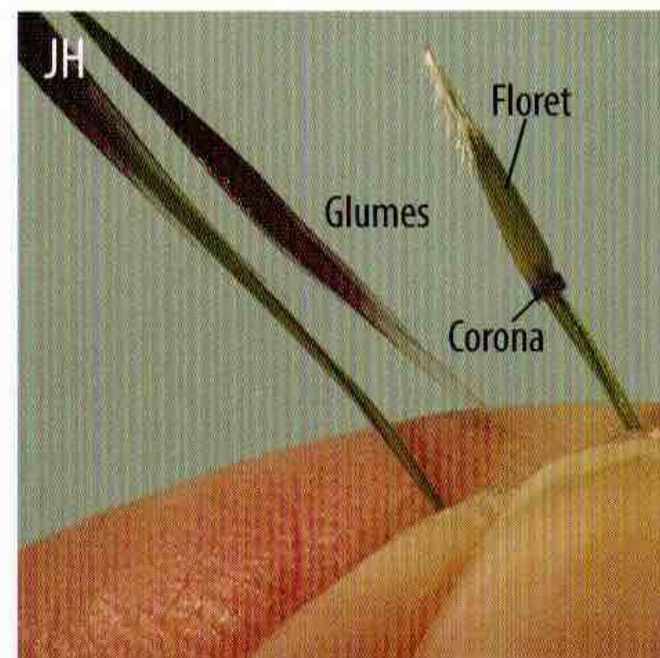
Key ID criteria for some transformative grass weeds – Rose *et al.*



CHILEAN NEEDLEGRASS

**Nassella neesiana*

» Introduced cool-season perennial



Description:

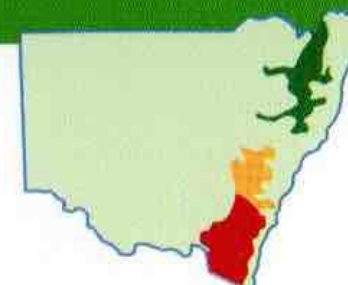
- Tufted grass to 80 cm tall. Stem nodes are covered in short hairs.
- Leaves are to 5 mm wide, with a strongly ribbed and hairy upper surface.
- Flowerheads are contracted to loosely open panicles to 40 cm long. Spikelets are 1-flowered and have 2 purplish glumes. Lemmas (6–10 mm long) are hairy in the lower half and have a ring of tissue (corona) at the base of the 4–9 cm long, bent and twisted awn. Spikelets are also formed at the base of the plant and at nodes along the flowering stems.
- Flowers in spring and early summer.

Distribution:

- A native of South America, it is found on roadsides and in native and sown pastures.
- Occurs on most soil types, but prefers more fertile soils.

Importance and Management:

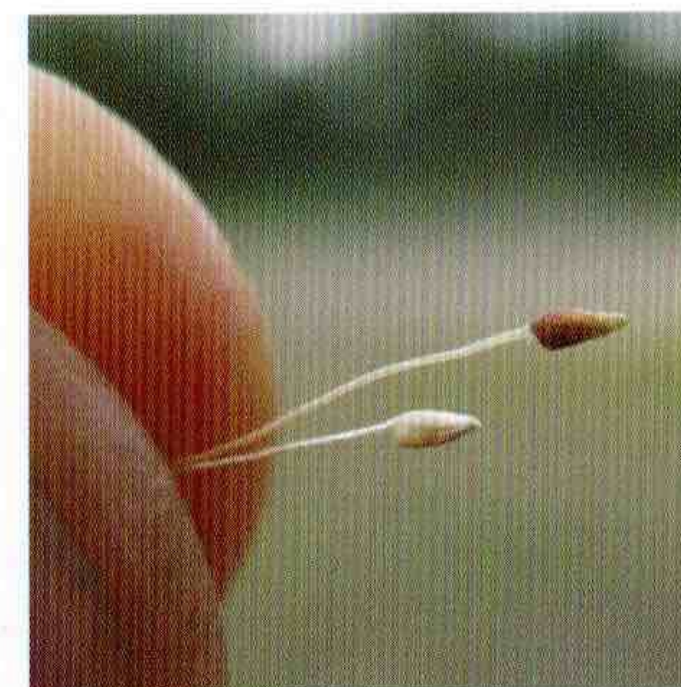
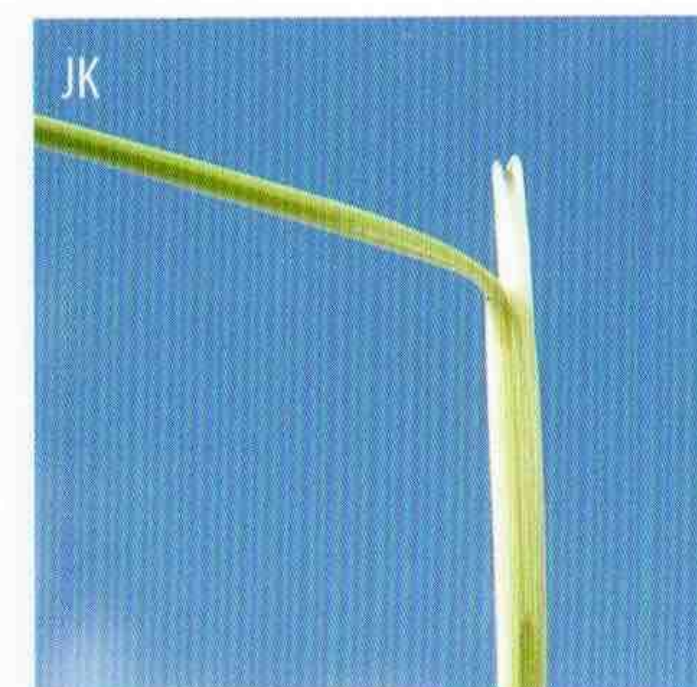
- A Weed of National Significance, it is highly invasive and produces large persistent seed banks. Its seeds injure stock and downgrade wool, skins and hides.
- A palatable and reasonable quality feed in winter,



SERRATED TUSOCK

**Nassella trichotoma*

» Introduced cool-season perennial



Description:

- Dense, tussocky grass to 60 cm tall and with softly hairy nodes.
- Leaves are bright green, very fine and rough to the touch; erect when young, but drooping in larger plants. Ligules are short, white membranes.
- Flowerheads are open panicles to 25 cm long; they break off at maturity and blow along. Spikelets are 1-flowered and have 2 purplish glumes. Lemmas are 1.5–2 mm long and about as broad, with a nearly straight 2–3.5 cm long awn attached off-centre.
- Flowers in spring.

Distribution:

- A native of South America, it is mostly found on light soils in areas of disturbance (e.g. roadsides and overgrazed pastures), low productivity and/or ground cover.

Importance and Management:

- A Weed of National Significance, it readily invades any sort of grassy vegetation.
- Extremely poor feed value; animals forced to graze it may eventually starve to death. Plants and seed banks are long lived, but seedlings are susceptible

We were asked particularly for tips about ID for CNG, ST and ALG – resources like these help, but field sessions are more efficient

.... to help - 2?

- PlantNet - <https://plantnet.rbgsyd.nsw.gov.au>
- Australian Association of Bush Regenerators' - <https://www.aabr.org.au>
 - https://www.aabr.org.au/portfolio_category/appropriate-approaches/
 - https://www.youtube.com/watch?v=WmOA_qIAiPA&t=321s
 - Dispose of weeds on site - 5.21m
 - <https://www.youtube.com/watch?v=GoBTqQYuau0&t=26s>
 - Minimise disturbance when walking and weeding - 4.48m
 - <https://www.youtube.com/watch?v=PWjHYsBVQHM&t=611s> -
 - Get to know the six main weeding techniques - 10.12m
 - https://www.youtube.com/watch?v=WmOA_qIAiPA&t=321s -
 - Get good at telling the difference between natives and weeds, even at early stages- 6.32m

Weeds at Franklin grasslands

- considerations:
 - recreational reserve putting grasslands, woodlands & wetlands first - access and people management;
 - six threatened and many rare species;
 - restoring grasslands, ground and mid woodland species, and wetlands & improving habitat.
 - **major grasses** - Phalaris (ma), Wild Oats (w), CNG (mi), ST (mi), ALG (mi), Pigeon Grass (mi), Couch (w)
 - **main woody weeds** - Blackberry (w), Briar Rose (m)
 - **herbaceous weeds** - St John's Wort (w), Spear Thistle (w), Fleabane (w), Flat weed (w), Sow Thistle (w), Prickly Lettuce (w), Cleavers (w), Fumitory (w)
- ma - major, w - widespread & mi - minor.

Case study: Franklin Grassland Reserve

- so where to start?
- Ranger Craig had been spraying Blackberry for a long time, creating a handful of bare patches, within which seedling natives and exotics were emerging - weed them & expand the areas (rangers also continued to spray the Phalaris & expand the areas)
- there are also many high quality patches of native veg which invariably had exotics interspersed amongst them. These were micro weeded or whacked.
- the 'don't go past' list includes Patersons Curse, Spear Thistles, Salsify, Fleabane,
- we generally map, but leave the SJW, CNG and ALG to the rangers



Franklin Grasslands - always something to do!

- then one volunteer germinated 400 Wallaby Grass seedlings. Roughly half were planted in the largest 'bare' patch
- other tasks emerged: raking the slash created by fire abatement mowers; removing seedheads of Curled Dock (ephemeral wetland); cutting & daubing Mallow, Prickly Lettuce (NE woodland)

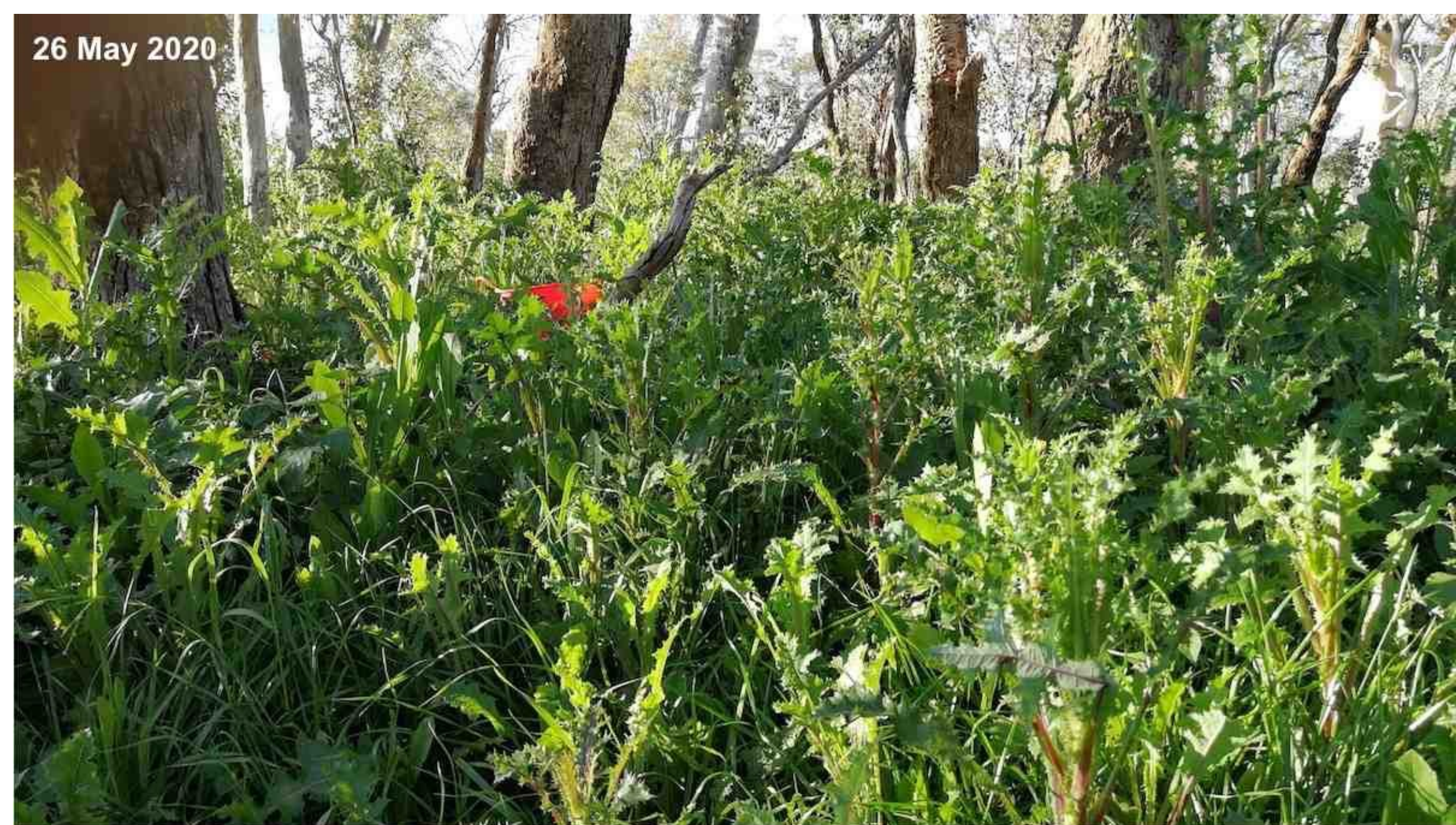


Hall Cemetery Woodland

A wall of tall Sowthistle on the brink of flowering and setting seed – top image

It was controlled firstly by plucking and bagging flowers to buy time, then some trials with snapping and herbiciding, but finally the solution for this patch was brute force – pull up the shallow rooted plants. Some of the leaf+stem mass was hung up to dry but most was removed from site to avoid a large composting pile

The lower image was taken 9 months later – shows that a serious invasion can be beaten. Patch still has unwanted exotics (incl Bromes, Phalaris and Spear Thistle) but also a healthy presence of Microlaena. It did require days of hard labour by volunteers - Jenny and Graeme in particular



Case study: Hall Cemetery woodland

- At the beginning of 2020 with good rains, FOG vols were met by a wall of growing Sowthistle and Prickly Lettuce, and smaller invasive problems festering in the ground layer
- Was really very easy to prioritise - the immediate need to stop the Sow Thistle fluffies that had begun to fly, these were plucked and bagged; Blackberry Nightshade, Cleavers, Capeweed and Fumitory were flowering, also whacked and bagged;
- 'don't go past' list included Nodding, Variegated, Spear & Scotch Thistle, Patersons Curse, Cinquefoil, Capeweed, Salsify, Fleabane
- we trialled shears, long-handled shears, sickle, whipper snipper, weeding wand,
- Chief Minister's grant allowed us to break the back of the Sowthistles which we were able to leave to a professional sprayer.
- SLASHER, nonselective, an organic-acid alternative to poisons – best against annuals - Cleavers, Fumitory, Sowthistle, Spear Thistle & Prickly Lettuce, new germinants of other species
- New safety considerations - falling trees

Sowthistle

Slasher response tested June

Note Plantain did not burn



Contractor spot spraying August

Slasher applied to Cleavers at Hall Cem (April)
Warm, sunny, dry, annual plant.
Care needed with new germination from seedbank.



Slasher applied to Spear Thistle at Hall Cem (April)

Warm, sunny, dry, short-lived perennial plant with starchy roots.



If Slasher weedkiller can be applied when plants are small enough, it can probably control almost anything.

Example below of *Verbascum virgatum*: before, after, roots of live plants



A few of the questions in advance that came back from participants at our previous session:

- How best to ID some of the worst grass weeds – ALG, CNG, ST?
- Do all daisies in flower continue to develop seeds after they have been cut or pulled?
- How to deal in your 'patch' with seeds (eg ALG) from plants that have been treated – mainly by chipping or digging, but spray also worthy of discussion?
- Is it best to remove plants and stems from the site after weeding?

Discussion and questions?