

# Native Vegetation Field Day Handout - Thule Area



Western Murray  
Land Improvement Group Inc.

## INSIDE THIS ISSUE:

Building biodiversity in house garden 2-3

Benefits of native vegetation on farm 4

Enrich project—native forage shrubs 4

Lower Thule native vegetation and research 4-5

Native grasses overview 7-8

Irrigating native pastures 8

Direct drilling and weed management 9

## SPECIAL POINTS OF INTEREST:

- Enhance remnant native vegetation with local shrub species to enhance resilience
- Native vegetation does not mean lost production. It can improve farm viability
- Native grasses offer low input costs and you can take advantage of irrigation at times to increase productivity .
- Native grasses can increase fodder diversity and stock health and can outcompete weeds with good grazing management.

## OVERVIEW OF THE FIELD DAY

The Western Murray Land Improvement Group as host organisation in the Murray Catchment Landcare Facilitator Network has organised today's field trip. The day is part of a project to develop a biodiversity planting guide for our regions gardens and house paddocks. The day will demonstrate how to build on the habitat that exists in the traditional garden; discuss design and establishment of habitat plantings and the benefits of incorporating these in the farm or town garden.

The day starts at Moorookyle with hosts Neil and Bev Gorey on the house paddock vegetation site planted in 1997 to enhance existing remnant vegetation around the house. Following this we will travel to a research and development trial site on the property started in 2004. This will give the participants an idea of different species planted in heavier soils and an appreciation of age to

size classes of these species.

We will then travel through the regions key roadside vegetation stopping at a few significant points along the way, then to "Restdown". At Restdown we will have lunch with our hosts Don and Jo Hearn, followed by a tour of the irrigated native pasture sites.

Over the last seven years, the farm has been converted to native pastures, with the cattle performing substantially better and the heard health excellent.

We will be able to view the native pastures and an irrigated trial site that has provided additional feed for the cattle.

We then plan to do a wetland walk where people can learn about vegetation, indigenous sites and farming practices that work in harmony with conservation.

Last years rain has revived this 25 ha ephemeral wetland as

well as contributing to growth in paddock feed and an excellent spring budburst .

A handout also includes some earlier photo's of the Thule Lakes and farm environment that my grandmother , Jessie Fasham took with her "box brownie" camera in the early to mid 1900's. This has been provided to conjure up discussion about our pioneering days while we enjoy some locally made "Farmhouse" cheese varieties and a lovely regional wine from Restdown at the end of the day.

Thankyou to the Murray CMA for funding the day through the Western Murray Land Improvement Group Regional Landcare Network MoU.

Roger Knight

Regional Landcare Facilitator

Western Murray Land Improvement Group

## THE MOOROOKYLE STORY

The Western Murray land Improvement Group would like to thank Neil and Beverley Gorey and family for making there property available for the field day.

Moorookyle is a significant site because remnant vegetation was retained in many places on the farm. Neil has slowly enhanced these sites by incorporating more species in

with the remnant stands and providing corridors for fauna. For example the house vegetation extends to the Thule wetland system.

## BUILDING BIODIVERSITY IN THE GARDEN



Picture: Neil Gorey at Moorookyle house paddock native vegetation stand.

### Do gardens provide habitat?

All gardens provide habitat for some of our local species. E.g. magpies sheltering on a hot day, mud larks feeding on worms in the lawn and blue wrens sheltering and feeding around the rose bushes.

### Can we build on the habitat that already exists in the garden?

Yes we can by strategic plantings outside and close to the garden or by establishing local tree and shrub species in the garden itself.

### What are the advantages of planting indigenous tree, shrub and ground covers in and or around the garden?

The advantages are:-

- Climate moderation; creating shade and shelter for stock, the house and its residents
- Reducing energy consumption required for heating & cooling.
- The creation of habitat for more species of native fauna as the biodiversity is enhanced e.g. the introduction of native bird species such as honey eaters.
- Adding value to the property
- Wind control-climate moderation
- Fire protection
- Possibility of collecting indigenous seed for sale
- Drought proofing farms by planting indigenous plant that provides fodder e.g. salt bush and boree species
- Be seen as an “environment” friendly

## WHAT, SOME SPECIES OFFER FIRE PROTECTION?

**Although not totally protecting your property in high intensity fires, there are native species that can be selected that are naturally fire retardant, so you may wish to plant these species near your house and garden**

Many of our local plant species can be used to provide a degree of fire protection for our houses and farm infrastructure, good design and use of the plants can reduce the chances of being burnt out.

During extreme bushfire events however, neither these nor other plant types will totally protect your property.

Murray Catchment Native Fire Retardant Species:

### Trees

- Acacia implexa
- Hickory Wattle
- Allocasuarina verticillata
- Drooping She-oak
- Banksia marginata
- Silver Banksia, Honeysuckle

### Shrubs

- Bursaria spinosa
- Blackthorn
- Dodonaea viscosa ssp. angustissima
- Narrow-leaf Hop-bush
- Dodonaea viscosa ssp. cuneata
- Wedge-leaf Hop-bush
- Eremophila debilis (Myoporum debile)
- Winter Apple
- Senna (Cassia) artemisioides
- Silver Cassia
- Solanum aviculare
- Kangaroo Apple
- Atriplex nummularia

- Oldman Saltbush
- Rhagodia spinescens
- Thorny Saltbush

### Truffed Plants

- Dianella longifolia*
- Dianella revoluta*
- Lomandra longifolia*
- Lomandra effuse*

### Ground Covers

- Einadia (Rhagodia) hastata*
- Enchylaena tomentosa*
- Einadia mutans*
- Atriplex semibaccata*

### Grasses

- Themeda australis*



Senna is a fire retardant shrub species

## WHAT IS BIODIVERSITY?

Biodiversity describes the range of living things that surround you, everything from plants, animals, insect's right down to microbes and bacteria in the soil; even livestock and crops.

It includes the variety and combinations of species and how they interact.

Biodiversity provides services that benefit us all.

### Services provided by healthy waterways;

- Water filtration

- Recreation
- Food
- The maintenance of existing species for future generations to enjoy

- Insect control

### Services provided by planted and protected vegetation areas;

- Stabilisation of climate
- Pest control
- Pollination
- Regulation of the hydro-

logical cycle.

- Stabilising sand hills & river banks

### Services provided by soil based ecosystems;

- Food production
- Fibre production e.g. wool and cotton
- Building materials
- Medicines
- Bio-fuel production



Black box with understory vegetation



Sandhill mixed species plantings with remnant vegetation

## HOW DO YOU ESTABLISH BIODIVERSITY PLANTINGS?

There are 4 ways to establish these plantings:-

1. To hand plant tube stock; these plants can be purchased from local nurseries or grown yourself from seed that you have collected.
2. Mechanical direct seeding; this can be done by contract by the Western Murray Land Improvement Group and Murray Catchment Management Authority; direct seeding suits larger areas. A direct seeder can be viewed on site.
3. Hand direct seeding;
4. Removal of stock and pest species from an area of remnant vegetation to allow regeneration.

Mostly a combination of some of these methods is required to produce the best results.

Revegetation work is usually 100% tax deductible during

the year the work is carried out.

Generally the best results are achieved with approximately 80% of the area planted to be shrubs and ground covers and 20% of the area tree species

### How do these plantings provide habitat?

The shrub and ground cover species provide protection and specialised food for our smaller bird and insect species and some of our reptiles. This food can be in the form of nectar, fruit, leaves and fruit. The trees provide habitat shelter for a large range of species. They again provide food but also nesting sites for larger bird species.

### Should we include remnant trees in the plantings?

Older indigenous tree species whether dead or alive can

provide habitat for numerous species. About 20% of the native species in the Riverina depend on tree hollows for shelter and breeding. It takes 120 years for a hollow to form.

### Some facts and figures

A colony of a thousand small bats living on or around your farm will eat more than a tonne of insects in a single year

There are 3000 or more species of native bees in Australia, which pollinate plants and enable reproduction.

A colony of termites can move tonnes of plant matter in a year, releasing nutrients to the soil

When rice bays fill with water hundreds of tortoises enter the bays from irrigation channels to eat slugs, snails and bugs that thrive there .



1994 Wakool Landcare Group revegetation site on the sandhills north of Barham have been extremely successful .

## THE BENEFITS OF NATIVE VEGETATION TO THE FARMING SYSTEM



Salt bush planted for livestock fodder on a farm near Barham.



Native shrub mixed with perennial grasses provides many benefits on farm

### Economic Values:

Perennial native vegetation (trees, shrubs and ground cover) can provide benefits to stock in the form of shade, shelter and fodder (particularly in drought years). There is reported increases in milk production, increased fertility in ewes and lambs, increased wool production and meat production where stock have had access to shade and shelter.

In cropping areas native vegetation can reduce moisture loss around crops by acting as a wind

break increasing yields, while deep rooted perennial species help maintain low water tables. Native vegetation is also effectively used to control and reverse other forms of land degradation, such as erosion.

### Ecological Values:

Native vegetation can offer habitat for animals that is suitable as a food source, breeding site or refuge. Variation within an area of native vegetation (such as a site that includes native trees and shrubs and ground cover and woody debris) provides resources

for a greater number of wildlife species.

Native vegetation also improves the soil through nutrient cycling. Vegetation matter that falls from vegetation is broken down by soil organisms and other microbes, resulting in nutrients re-entering the soil to be used by other living plants.

Other ecological benefits include stabilizing bank streams, improving water quality, absorbing carbon dioxide and acting as carbon sinks.

**“The Enrich research project found that farms with 15% of their farm area with forage shrubs increased farm profit by 15-20%”**

The following is a summary of research done on native forage species. More information can be sourced from the DPI or search web on [www.Enrichproject](http://www.Enrichproject).

### Enrich™ – building better grazing systems through perennial shrubs

The Future Farm Industries project, Enrich™ focuses on the development of viable options for the livestock/cropping zone of southern Australia. The project aimed to explore the use of shrubs as a perennial feedbase for innovative and profitable grazing enterprises that are based on sound resource management principles.

### Why perennial shrubs?

Native perennial shrubs have the ability to grow in marginal, low-rainfall environments, which can increase a livestock enterprise's resilience during periods of drought and its ability to respond to unseasonal

## USING NATIVE FORAGE SHRUBS IN THE ENRICH™ PROJECT

rainfall. For the farmer there are multiple benefits including – a boost in productivity, improved stock health and environmental protection.

Specifically, benefits of perennial shrub based grazing systems are:

- Providing green feed and filling feed gaps.
- Making use of unseasonal rain by being ready to convert it to edible biomass
- Improving animal health through their nutritive and bioactive properties
- Providing shade and shelter for livestock
- Reducing salinity through more effective water use
- Reducing erosion and soil degradation through better land cover.

44% of annual rainfall occurs in Oct-Mar. Rainfall utilisation most suited to perennial grasses and shrubs rather than annual medic etc.

Animals / herbivores need diversity and a balanced diet - animals don't just want lucerne for exam-

ple. Edible shrub species offer diversity.

Around 120 species of native woody plants are palatable in Australia.

Some saltbush varieties prefer light soils and some suited to heavy. OMSB OK on all types of soil.

A number of species of forage shrubs in research had superior digestibility with higher energy content than OMSB. Shrubs have higher mineral content due to deep roots accessing minerals and nutrients that grasses don't access.

Some forage shrub species have superior digestibility over traditional fodder such as oats etc.

40% of species trialed showed that they were toxic to worms. 15 species reduced methane concentration.

No silver bullet even though a range of species are exciting and have potential, there is difference within a species and between species in palatability.

Research is trying to come up with strategies for selective grazing. Trials measured preference with increased exposure time of sheep. There was a preference for one

species in the first two days of grazing, then sheep went to other species. Everything got eaten down to complete defoliation after 4th exposure. Over time the animals learn and there is a period where the gut bacteria needs time to adjust. Stomach microbes change depending on what they are eating.

When sheep are first exposed to both pasture and forage shrubs, 90% of the pasture is eaten and 10% shrubs. After 4th exposure the ratio is 50/50 pasture to shrubs eaten.

Shrubs change the micro climatic conditions. Shade = more grass on the south side.

Bigger shrubs tend to be a harbourage site for pests. Think about densities. If too dense, it favours pests. Keep spaced to encourage pasture.

Q: what is DSE / ha rate on perennial shrubs in low rainfall areas compared to other systems?

A: No answer yet.

## LOWER THULE NATIVE VEGETATION

The Thule area has significant representation of the diversity of native vegetation in the area. The diversity of species compliments the range of landscape which include sandhill rises, rivers and flood plains intermixed with ephemeral creeks and wetlands. As you travel along the Lower Thule road you will see examples of the species change from the lighter sandy soils to the heavier clays. Vegetation has been preserved on road sides and

also into remnant pockets of vegetation on private property.

The idea of the Field Day is to view the different species to get an appreciation of the age structure and form (height, foliage cover etc. ) of different species and to ask questions of people experienced in direct seeding of native vegetation. The questions are designed to be fairly informal as we walk amongst the vegetation.

Some questions covered include;

- Species to plant when direct seeding?
- When is the best time to direct seed?
- What do I need to do for site preparation?
- What do I need to do for pest control?
- What is the minimum area recommended to be planted to ensure viability of the plantings?



Murray pine with hand planted native shrubs

## WESTERN MURRAY LAND IMPROVEMENT GROUP-DIRECT SEEDING

WMLIG was formed in March 2003, and has successfully conducted native plant direct seeding research which has led to an improved success of the germination and survival rates of native plants in this region. Large revegetation projects between Barham and Balranald have been completed on public and private land (approx. 500 Ha), and this work provides some funding for the group.

### Native Vegetation Trials done by the group

WMLIG together with Murray Irrigation Limited Land and Water Management Plan Research and Development Program produced a report "Research into Direct Seeding of Native Trees and Shrub Seeds" on local properties in 2004/2005;

Trials were undertaken to determine the best methods of direct seeding native trees and shrubs in the western area of the Murray Catchment, especially in areas with more difficult soil types such as non-self mulching clays (e.g. Niemer clays) and sodic soils.

The trials focused on increasing seed viability and success by researching the following;

- trialling different direct drilling machinery,
- conducting soil tests to determine known soil deficiencies and correcting with soil amendment products.
- using different rates and mixes of inoculant, fertilizer and herbicide treatments.

### Objectives / aims of proposed research was to:

- increase seed germination and survival rate of new plants in revegetation management sites.
- make revegetation works more cost effective (i.e. less labour, seed etc.)
- make direct seeding a more viable option on our more difficult soil types such as non-self mulching clays.
- plan and implement effective approaches to the on-

going management of revegetation works.

- control of pests and weeds (pre and post emergence) with integrated pest guidelines.

### Direct Seeding Project Results:

- variation in topsoil texture influences the success of seed treatment.
- weed and pest control pre and post seeding is critical.
- fallow in the spring prior to direct seeding
- discipline and patience is required to ensure appropriate machine adjustments are done when direct seeding in varying soil types and moisture (and stubble / grass density?).

### Contact:

For further information on direct seeding native tree and shrub species or for contracting the group for project work contact Rick Ellis on 0428 372 357.

**"Weed and pest control pre and post direct seeding is critical"**

## SPECIES LIST—LOWER THULE ROAD AREA



Significant remnant vegetation area sign at the start of the Lower Thule Road



Needle Wattle (*Acacia rigens*)



Mixed species planting at Moorookyle R&D site

- Gold-dust Wattle (*Acacia acinacea*)
- Grey Wattle (*Acacia brachybotrya*)
- Western Black Wattle (*Acacia hakeoides*)
- Hickory Wattle (*Acacia implexa*)
- Bulloak (*Allocasuarina luemannii*)
- Yarran (*Acacia melvillei*)
- Mallee Wattle (*Acacia montana*)
- Miljee (*Acacia oswaldii*)
- Myall / Boree (*Acacia pendula*)
- Golden Wattle (*Acacia pycnantha*) - Planted here.
- Needle wattle (*Acacia rigens*)
- Native Willow / Cooba (*Acacia salicina*)
- River Cooba (*Acacia stenophylla*)
- Old Man Saltbush (*Atriplex nummularia*)
- Bladder Saltbush (*Atriplex vesicaria*)
- Native Blackthorn (*Bursaria spinosa*)
- Belah (*Casuarina cristata*)
- White Cyprus Pine (*Callitris glaucophylla*)
- Murray Cyprus Pine (*Callitris gracilis*)
- Nitre Goosefoot (*Chenopodium nitriaceum*)
- Narrow Leaf Hop Bush (*Dodonaea attenuata*)
- Ruby Saltbush (*Enchylaena tomentosa*)
- Spreading Emubush (*Eremophila divericata*)
- Emubush (*Eremophila longifolia*)
- Black Box (*Eucalyptus largiflorens*)
- Yellow Box (*Eucalyptus melliodora*)
- Grey Box (*Eucalyptus microcarpa*)
- Showy Pea (*Eutaxia microphylla*)
- Leafless cherry (*Exocarpus aphyllus*)
- Dwarf Cherry (*Exocarpus strictus*)
- Needlewood (*Hakea leucoptera*)
- Hooked Needlewood (*Hakea tephrosperma*)
- Rosewood (*Heterodendrum oleifolius*)
- Cottonbush (*Maireana tomentosa*)
- Moonah (*Malaleuca lanceolata*)
- Sugarwood (*Myoporum platycarpum*)
- Butter Bush (*Pittosporum phyllireoides*)
- Thorny Saltbush (*Rhagodia spinescens*)
- Quondong (*Santalum acuminatum*)
- Desert Cassia (*Senna artemisioides* spp.)



*Senna artemisioides* spp *zygophylla*



Yarran (*Acacia melvillei*)



*Senna artemisioides* spp *coriacea*

Pam O'Neill has kindly supplied some plant photo's for the handouts. Can you spot these species on your walk and travels today?

## “Restdown” Property Native Grasses and Wetland Tour

### AGRICULTURAL VALUES OF NATIVE GRASSES

Well-managed native grasslands provide a range of benefits to the agricultural industries of NSW. These include the provision of high quality feed for livestock; a reduced need for supplementary feeding; low production costs; and production of finer, high tensile wool from sheep. Native grasslands also provide environmental services such as increased biodiversity, storage of carbon, nutrient cycling and regulation of water flow in the landscape.

#### Drought Tolerance

Native grasslands are naturally drought tolerant. They can be comprised of 30 or 40 native species, many of which are deep rooted. The combination of summer and winter perenni-

al and annual grass and herb species affords a range of responses to changes in rainfall and seasonality, greatly increasing the likelihood of maintaining a fodder supply year round, even in dry times.

#### Year Round Forage

Native grasslands have a high number of species, with a diversity of seasonal growth patterns, which increases the potential green feed throughout the year. Native perennial species, in particular, provide a year round source of fodder and will respond rapidly to rainfall. Providing nutritious green feed to livestock.

#### Low Input Production

Native pastures require less input from the land manager,

particularly fertilisers. Low input native pastures, which are diverse in species composition, are a lower risk and lower cost to land managers than exotic pastures.

#### Frost Tolerance

Native pastures containing C3 grasses (temperate grasses) are frost tolerant and can produce green foliage in winter.

#### Finer Wool

Although wool cuts and sheep live weight gains may be higher on improved, sown or fertilized pastures, fleece produced on native pastures can be finer and often has higher tensile strength due to the more even feed quality all year round.

**“The saying higher Production = higher profit is not necessarily true. - High yielding improved pastures require a time and financial cost to create and maintain and this might not be as profitable as native grasses due to the high input costs**

### BEST PRACTICE GRAZING MANAGEMENT WITH NATIVE GRASSES

Awareness of the integrated values of native grasslands has increased over recent decades. A key aim of best practice management is to maintain a diversity of native species. Non-continuous grazing, when properly applied and with knowledge of species behaviour, can be used to maintain and enhance grassland composition by resting paddocks when desirable spe-

cies are recovering from a major stress event such as a fire or drought, or when they are flowering and dispersing seeds.

Some general best practice concepts for native grassland management include:

- maintain appropriate stocking rates, that is, matching available feed with livestock requirements;
- Employ non-continuous grazing (e.g. rotational or tactical grazing) rather than continuous grazing;
- Ensure fertiliser use does not disadvantage native species; and
- Avoid immediate and dramatic changes to existing management at high quality sites.

**“Native grasses will naturally recolonize the landscape if best management practices are adopted. Native grass seeds naturally disperse and will assist in weed management over time.**

### GRAZING TO INCREASE DIVERSITY

Research has shown that grasslands require some form of disturbance to maintain species richness and health. Prior to European settlement, use of fire by Aboriginal people was the disturbance mechanism that stimulated diversity in grasslands. Fire is not often a practical modern day management tool, particularly on

actively grazed land. Research has demonstrated that stock grazing can achieve similar diversity, but sometimes a different species mix, if undertaken appropriately. Mowing and slashing can occasionally be effective.

Spelling grazed paddocks to allow plants to germinate, grow, flower and set seed assists maintenance of species diversity, especially favour-

ing the desirable, tall, long lived, deep rooted perennial species. Understanding when local species are at various stages of their lifecycle, and how they respond to rainfall, is important in determining when and when not to graze.

## MANAGING NATIVE PASTURES FOR AGRICULTURE AND CONSERVATION

**“There is no perfect grass or legume, all species have strengths and weaknesses for both livestock production and conservation. Native grasses are no exception”.**

### What are native pastures?

Native pastures is a common term used to describe a wide variety of pastures. Generally they are dominated by native perennial grasses together with a variable number of native herbs. They can also contain volunteer, introduced or naturalized grasses, legumes and broad-leafed weeds.

Native grasslands are defined as *vegetation dominated by grasses and forbs containing less than 10% woody plant cover.*

They are dynamic ecosystems, where species composition and structure can change from year to year and season to season in response to rainfall, temperature, fire, grazing pressure and management.

### What are C3 and C4 grasses?

C3 and C4 grasses refer to the chemical pathways used by the plants to convert solar energy into sugars. Broadly speaking, C4 grasses grow well and predominate in warmer and drier conditions and more tropical regions. C3 grasses are better suited to cooler, wetter, more temperate conditions.

The C4 pathway is more water and nutrient efficient, but requires more energy (sunlight) to drive photo synthesis, so these grasses are not very shade tolerant and frost off in winter. Common examples of C4 grasses are Kangaroo grass and Red grass (e.g. umbrella grass)

The C3 grasses are more shade

tolerant, but require more moisture and soil fertility. In southern Australia, they remain green and continue to grow through winter and at the same stage generally provide higher quality forage. Some examples of C3 grasses are Wallaby grass, Microlaena, Poa and Spear grass.

### Seed setting

As a guide, winter/spring active species flower and set seed in mid to late spring (e.g. Common wheat grass, annual grasses). Summer growing species flower and set seed in mid to late summer depending on rainfall (e.g. Kangaroo grass, Red grass). Some species can flower and set seed in both spring and autumn.

## NATIVE PASTURES AND WATER

**“Restdown has taken advantage of summer active native grasses by using irrigation”.**

Historically, the vegetation of southern Australia used little water during the winter and spring rainy season, which allowed soil water reserves to be replenished. Most species flowered, set seed and recruited seedlings in late spring and summer, and having water stored in the soil was essential

for the success of these strategies.

Water use during summer depletes the soil water store so that it has the maximum capacity to take up water in the following wet season.

The summer active grasses can also take advantage of high

intensity storms common in summer.

“Restdown” has basically replicated nature and taken advantage of the summer active C4 grasses with the use of irrigation water to fill the gaps between summer storm events.



Land prior to irrigation 2012



Watering of perennial grasses 2012



Native pasture after watering dominated by umbrella grass



Very content looking cattle

## DIRECT DRILLING INTO NATIVE PASTURES

One way to increase pasture production (particularly for the autumn / winter period) is to non-destructively over-sow by direct drilling.

Summer growing perennials become dormant after frost. Where there are only summer growing perennial na-

tives and no winter growing annual grasses, then using a narrow tined seeder after the first frosts will result in reasonable establishment without herbicide use.

When direct drilling cereals, "Restdown" found that most of the native pasture

settle into the grooves made by a direct drilling set up, as they are wind blown. For Restdown it's been more a case of a good way to encourage native plants coming into the paddock rather than actual direct drilling into a fully existing stand. That being said, the property will certainly

be looking at drying the native stand out in certain years, grazing it down then direct drilling possibly oats into it then watering it up if there hasn't been any follow up rain.

*Thank You to Don and Jo Hearn for making their property available for sustainable agriculture and NRM educational (and enjoyment) purposes and for contributions to the handout.*

## WEED MANAGEMENT

Although weed control has tended to rely heavily on the use of herbicides, a number of other methods such as strategic grazing, slashing, fodder conservation can be effective on their own or in combination with spot spraying of herbicides. Encouraging and maintaining a dense ground

cover of perennial native plants an litter that competes for light and space, is the best and cheapest method of resisting weed establishment.

Herbicides designed to kill broad - leaved species such as Pattersons Curse or Capeweed are also likely to harm the many native broad-leaved

herbs.

Spot spraying should be used in preference to boom spraying wherever possible. Good calibration of equipment and methods can greatly improve both the effectiveness and cost efficiency of spot spray operations.

**"The most effective protection against weed invasion is good ground cover"**

## GENERAL INFORMATION ON NATIVE GRASSES TO PONDER

Native grasses feed with associations with fungi. They need active decomposition by fungal hyphae (looks like a grey / white root mat in the soil).

Need to grow litter on the soil surface. Graze when there is litter which helps nutrient cycling – pulsing.

Good pastures have @ 5% legumes. Too many legumes will leach excessive nitrate and acidify the soil.

If underuse a pasture, it tends to go to woody plants eg. Blackberry, Rolley Polley. If

not utilised / grazed enough there will be grey and oxidising perennial grasses. If this happens carbon will be lost to the atmosphere and you will not be nutrient recycling, therefore need to graze.

The better perennial grasses have a softer seed that is designed to germinate in a compost bed. Hard seeds need bare ground and these are present on many weeds.

Farms struggle to hold introduced perennial grasses for 10-15 years. Maybe at Hamilton, not here.

Q: Can you claim carbon with perennial grasses?

A: The methodology is not out yet.

Q: If a farm has not had native perennials for 50-80 years will there still be viable seed?

A: Perennial grass seeds last a long time. They can spread from fence lines, animals etc. Sometimes people ask where do the perennials come from? This question can also be applied to weeds. Don't always know, but they appear.

**"Native perennial grasses are a bit like weeds. We don't always know where they come from, but they appear".**

References: Biodiversity in the Garden Handout by MCMA and RGA, 2011

Native Vegetation Guide for the Riverina, notes for land managers on its management and revegetation, Charles Sturt University, 2022

Managing Native Pastures for Agriculture and Conservation, NSW DPI, 2004.

Understanding Our Native Pastures - agricultural, environmental and indigenous values and management for the future, Natural Resources Advisory Council, State of NSW, October 2010.

**Western Murray Land Improvement Group**

**25 Noorong St. Barham NSW 2732**

Roger Knight  
Phone: 50 372 357  
M: 0428 372 357  
E-mail: roger.knight@wmlig.org

Rick Ellis  
Phone: 50 372 357  
M: 0428 372 357  
E-mail: rick.ellis@wmlig.org

**WMLIG Mission Statement:**  
***“Promote sustainable farm and land management practices to enhance our unique natural environment through innovation, education and strong community networks”.***



**Western Murray  
Land Improvement Group Inc.**

The WMLIG employs a Regional Landcare Facilitator (RLF) through funds from the Federal Government for its “Caring for Country” Program and the Murray Catchment Management Authority.

The Regional Landcare Facilitators role is to establish adaptable, self-reliant, and appropriately informed networks of community Landcare and production groups in each NRM region accessing funding, partnerships, training, and information and facilitating the adoption of land management practices that maintain for future generations, Australia’s capacity to sustainably produce food and fibre, and enhance the capacity of rural and related landscapes to deliver ecosystem services such as clean air and water, healthy soils and biodiversity conservation.



RICEGROWERS' ASSOCIATION  
OF AUSTRALIA INC



Environmental  
Champions  
Program



**Regional Landcare Facilitator**

Hosted by Western Murray Land Improvement Group  
in the Murray region



CARING  
FOR  
OUR  
COUNTRY

