



GRASSLAND SOCIETY OF NSW INC.

Newsletter

Well we are nearly half way through the year already, and for many the seasonal conditions haven't improved and have actually got worse. For information on the drought support that is available please visit the NSW DPI Drought Hub (<https://www.dpi.nsw.gov.au/climate-and-emergencies/drouthub>), your Local Land Services office or the Rural Assistance Authority (<https://www.raa.nsw.gov.au/>).

I recently read a poem that summed up the drought for me by Colleen Wright called Drought in Australia - I have shared the poem on page 10 (of the newsletter).

All GS NSW attention at the moment is on the upcoming conference "Renewed focus on livestock systems for resilience

– the swing back to forages" in Gunnedah July 03-04. Program and registration details are available on page 2.

Also in this issue of the newsletter is a report on the Pasture Update held at Crookwell in March (page 3), an interesting article by Richard Simpson and Cameron Gourley on determining soil P test benchmarks for legume-based pastures as well as two articles that are part of a continuing series modified from the Temperate perennial pasture establishment guide - steps to ensure success published by the NSW Department of Primary Industries.

As we come to the end of a financial year we must also say a big thank you to our sponsors for the past two

years. The support of these sponsors allows the GS NSW to deliver services such as the conference and proceedings, and the quarterly newsletters to our members. The 2017–18 and 2018–2019 sponsors were; *Premier sponsors:* Local Land Services Central Tablelands, NSW Department of Primary Industries and Meat and Livestock Australia. *Major sponsors:* Heritage Seeds and Agropow. *Corporate sponsors:* Auswest Seeds, Dow AgroSciences, Incitec Pivot Ltd, Lachlan Fertilisers Rural, Local Land Services - Lucerne Management Online, Nufarm, Pasture Genetics, Upper Murray Seeds, Valley Seeds and Wengfu Australia.

Carol Harris,
Editor

Grassland Society of NSW Inc.

31st Conference

Renewed focus on livestock systems for resilience – the swing back to forages

3–4 July 2019
Town Hall, Gunnedah

PROGRAM INSIDE

www.grasslandnsw.com.au

In this newsletter

It's Conference Time	2
Crookwell Pasture Update	3
Phosphorus soil test benchmarks for productive legume-based pastures	4
Research Update	7
Post sowing weed, disease and pest control	8
The drought in Australia	10
Assessing species composition and ground cover	10
From the President	11

It's conference time!

“Renewed focus on livestock systems for resilience – the swing back to forages”



Date: 3 – 4 July 2019 **Venue:** Gunnedah Town Hall

All the details for the Grassland Society of NSW Conference to be held in July at the Town Hall Gunnedah have been announced - check out the program and tour details below. Make sure you register early to secure your spot on your tour of choice. Program and registration details are below.

Program

WEDNESDAY 3 JULY –
SMITHHURST THEATRE,
TOWN HALL, GUNNEDAH

8.00 am Registrations

Welcome and Welcome to Country -
David Harbison, President, Grassland Society of NSW and Wade Natty, representing the Gunnedah Aboriginal Community

Conference opening - *Jock Laurie, Land & Water Commissioner, NSW Drought Coordinator*

SESSION 1– Overview

- Climate Change and Variability – *Professor Mark Howden, Director, Climate Change Institute, Australian National University – by Skype*

SESSION 2 – Economics – Producers Changing – the swing to forages

- Pathways to a profitable grazing business - *Simon Fritsch, Director, AgriPath, Tamworth*

- Producers changing – \$ Rationale – *Nathan Kruidinier, Producer and Agribusiness Consultant*

- Producer perspective – *David Maxwell, Producer, Spring Plains.*

12.30–5.45 pm

Bus Tours Depart Town Hall to visit farms in the following localities:

Tour A – Carroll / Manilla district
Stuart Swain, Carroll – Beef;
Tamworth Water Re-use farm -
Westdale.

Tour B – Boggabri / Narrabri district
Alastair Donaldson, Boggabri –
Silage; Guy Roth, Narrabri – Sydney
University

6.15pm Grassland Society of NSW
Annual General Meeting Baxter Room,
Gunnedah Services & Bowling Club,
313 Conadilly Street, Gunnedah

7.00 pm Conference Dinner &
Entertainment, Gunnedah Services &
Bowling Club, Auditorium,

Social License to Operate - *Greg Mills, General Manager, GoAhead Business Solutions.*

THURSDAY 4 JULY – SMITHHURST
THEATRE, TOWN HALL, GUNNEDAH

8.30 am – SESSION 3 – Livestock
Production Systems

- Dairy cut and carry – *Hayden Hollis, Economic Consultant, Landmark*

- Beef systems – *Jason Catts, Stud and Commercial Producer, Kenebri*

- Sheep systems – *Justin and Lorroi Kirkby, Stud and Commercial Producers, Gravesend*

SESSION 4 – Livestock Nutrition and Genetics

- Plant genetics – The Pipeline for Improvement - *Professor German Spangenberg, Executive Director, AgriBio, La Trobe University*

- Balancing livestock genetics and nutrition – *Dr Jason Trompf, Livestock Consultant and Producer*

- Drought opportunities – Producer Panel: Q&A.

1.45–2.15 pm Conference Close and Lunch

Registration and payment

The program and registration form are available <https://grasslandnsw.com.au/news/wp-content/uploads/2019/05/2019-Grassland-Conference-Flyer-web-version.pdf>

Conference registrations close Wednesday 26 June 2019

Cancellations must be received in writing before Wednesday 26 June 2019

Either register at Try Booking – <https://www.trybooking.com/BCMTG>
OR send a copy of the registration and /or membership form with payment to:

The Secretary
Grassland Society of NSW
PO Box 471 Orange NSW 2800
ABN: 35 754 835 122

(The Grassland Society of NSW is exempt from GST)

If you have any queries or dietary requirements, please email secretary@grasslandnsw.com.au

The various conference packages available are listed below;

1. Full conference package - includes conference sessions on both days, conference proceedings, lunches, satchel, morning and afternoon teas, bus tours and conference dinner.

2. Single day rate (Wednesday) includes proceedings, satchel, conference sessions, bus tour, lunch, morning and afternoon teas. Rate does not include conference dinner.

3 Single day rate (Thursday) includes proceedings, satchel, conference sessions, lunch and morning tea.

4. Conference dinner includes pre-dinner drinks (beer, wine and soft drink only), two course meal and tea and coffee. An additional delegate should be associated with a full paying conference delegate.

5. Bus tour (includes tour booklet, lunch and afternoon tea). Group bookings (>8 Persons) by negotiation.

For further information please call George Truman for conference program and presentations 0427 505 040.

The Grassland Society of NSW gratefully acknowledges the financial support provided by the following organisations and thanks them for their support of the 31st Conference and 2019–20 Financial Year.

Premier sponsors: Local Land Services, NSW Department of Primary Industries, Meat and Livestock Australia, Landmark.

Major sponsors: Heritage Seeds, Valley Seeds, Corteva agrisciences, Progardes Agrimix Pastures.

Corporate Sponsors: Auswest Seeds, Pasture Genetics, Sumitomo Australia Pty Ltd, Upper Murray Seeds, Wengfu Australia Ltd

Local Sponsors: Rabobank

① For information on Gunnedah including accommodation options contact -Visit Gunnedah at <http://www.visitgunnedah.com.au>



Crookwell Pasture Update

The MLA funded Pasture Update held at Binda near Crookwell on 5th March 2019 was a huge success. Five speakers covered a range of topics for the 95 attendees. The feedback on the day was very positive.

Helen Burns from NSW DPI Wagga Wagga was the first speaker of the day. She discussed the importance of lime in a pasture system. Of most interest was the re-evaluation of the data from 20 years ago. In the 90s, research demonstrated a low return to lime inputs. With the recent increase in gross margins and the static cost of lime, the payback period of applying lime has reduced from 10 years to about 4. Helen also presented some more recent data from the MASTER lime programme, again highlighting the need to monitor pH and maintain it in the plant friendly range.

The second speaker, NSW DPI researcher Richard Hayes, explained how to improve pastures in the region by including the perennial legume white clover. He highlighted the

importance of a perennial legume to improve digestibility and provide nitrogen to grasses. Richard also presented details on the water use efficiency of limed and fertilised pastures. The conclusion is that perennial pastures can access an extra 25 mm of water from the soil when adequately fertilised.

Next to speak was Adam Little from Pasture Genetics discussed how to improve the survival and productivity of pastures. Adam gave a graphic demonstration of root development of a pasture that is rotationally grazed compared to one that is set stocked. He also discussed the importance of leaf regrowth to maximise productivity of pastures.

Gordon Refshauge from NSW DPI, Cowra was the first to speak after lunch. He provided an in-depth discussion of maximising lamb growth rates for lambs grazing pasture with and without feed supplements. He also highlighted the need to provide mineral supplements to ewes in late

pregnancy and early lactation when grazing crops and pastures. His take home message was that supplements containing lime, causmag and salt should be supplied to ewes grazing pastures and crops.

The final speaker, Hutton Oddy, from NSW DPI Armidale showed that there has been increased growth rates and body weights of Angus cattle over the last 20 years. He highlighted the need to consider the nutritional requirement and stocking rate of the modern style of cattle. He also discussed ways that producers can alter the growth pattern of cattle to meet specific markets.

A further highlight of the day was the pasture inspections at the beef cattle property Cadfor, owned by Rod Hoare and Helena Warren and the neighbouring sheep property The Ponds owned by Brian and Noelle Taylor.

A big thank you goes to Fertsread, Cadfor Murray Greys, Crookwell Vet Hospital, Arcus Adventures and JDs Rural and Hardware for their generous support providing the lucky door prizes.



◀ Richard Hayes NSW DPI addressing the crowd at the Crookwell Pasture Update on improving pastures, the role of legumes and the role lime may play in increasing the water use efficiency of perennial pastures. Photo credit: Clare McCabe, Crookwell Gazette.

Phosphorus soil test benchmarks for productive legume-based pastures

Richard Simpson¹ and Cameron Gourley²

¹ CSIRO Agriculture and Food, Canberra, ACT

² Agriculture Research Victoria, DEDJTR, Ellinbank, Vic.

Since 2007, livestock producers have had access to critical soil test phosphorus (STP), extractable potassium and extractable sulphur benchmarks for managing clover-based pastures (<http://www.asris.csiro.au/downloads/BFD/Making%20Better%20Fertiliser%20Decisions%20for%20Grazed%20Pastures%20in%20Australia.pdf>). The soil test benchmarks were developed as part of industry-supported research known as the Better Fertiliser Decisions for Pastures (BFDP) project and are based on the analysis of pasture yield response assessments held in a database of ~650 fertiliser experiments conducted in Australia over a 50-year period (Gourley *et al.* 2019).

Critical soil test values represent the soil fertility level at which a pasture is expected to achieve 95% of its maximum potential yield and, as such, provide targets for fertiliser use, and soil fertility improvement. Adding fertiliser in amounts that cause soil nutrient levels to consistently exceed these benchmarks is unlikely to achieve more pasture growth.

The STP benchmarks were a substantial breakthrough for fertiliser management of pastures in Australia. Before soil P tests became generally available in the 1970s, fertiliser recommendations were mostly based on generalised district level advice with no capacity to adjust fertiliser rates to the specific needs of each paddock. Even when soil tests became more available, soil test targets for fertiliser use were not generally promoted. In part, this was because critical STP concentrations were known to differ with soil type.

The breakthrough came when it was shown in the BFDP project that the critical Colwell P concentration of a soil could be predicted from the Phosphorus Buffering Index (PBI) measurement of a soil (Fig. 1). The

study also concluded that the critical Olsen P concentration was 15 mg P/kg (0-10 cm depth) and independent of soil type.

The critical P requirements of subterranean and white clover-based pastures reflect the P requirements of their legume component because N-fixation by these legumes ultimately drives the overall production of the pasture system and the clovers have similar, but relatively high P requirements. Their P requirements are higher than the grasses with which they are grown.

Since the late 1990s numerous alternative pasture legumes have been developed in Australia, mainly to provide legume options for farming systems where subterranean clover cannot be used reliably (Nichols *et al.* 2007; 2012). Little has been known about the P requirements of the alternative legumes.

However, in recent years, pasture legume varieties were grown in any one year at up to four sites near Yass and Wagga Wagga (PBI range: 40-80) over a three-year period (in total, seven site-year experiments) to measure herbage growth responses in spring to increased soil P availability (Sandral *et al.* 2019). A critical STP concentration (corresponding with 95% maximum yield) was estimated for 15 alternative legumes and two perennial grasses (Fig. 2). Subterranean clover was grown at all sites as a reference species.

The critical STP requirements of most of the legumes did not differ consistently from that of subterranean clover, indicating P fertiliser use for most pasture legumes can be guided by the current STP guidelines for temperate Australian pastures.

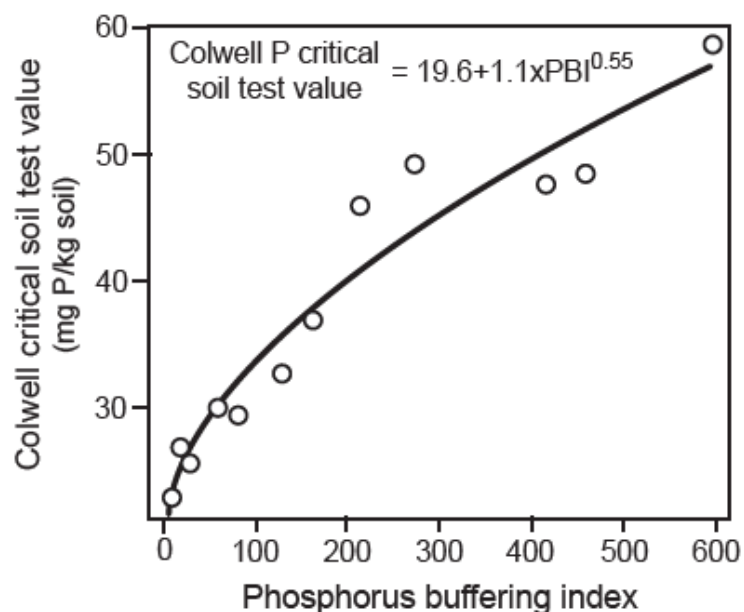


Figure 1: Relationship between critical Colwell P and the Phosphorus Buffering Index values of soil as derived from experiments collated nationally. Redrawn from Gourley *et al.* (2019). The critical Colwell P value is the soil test value predicted to achieve 95% of pasture yield when other nutrients are non-limiting.

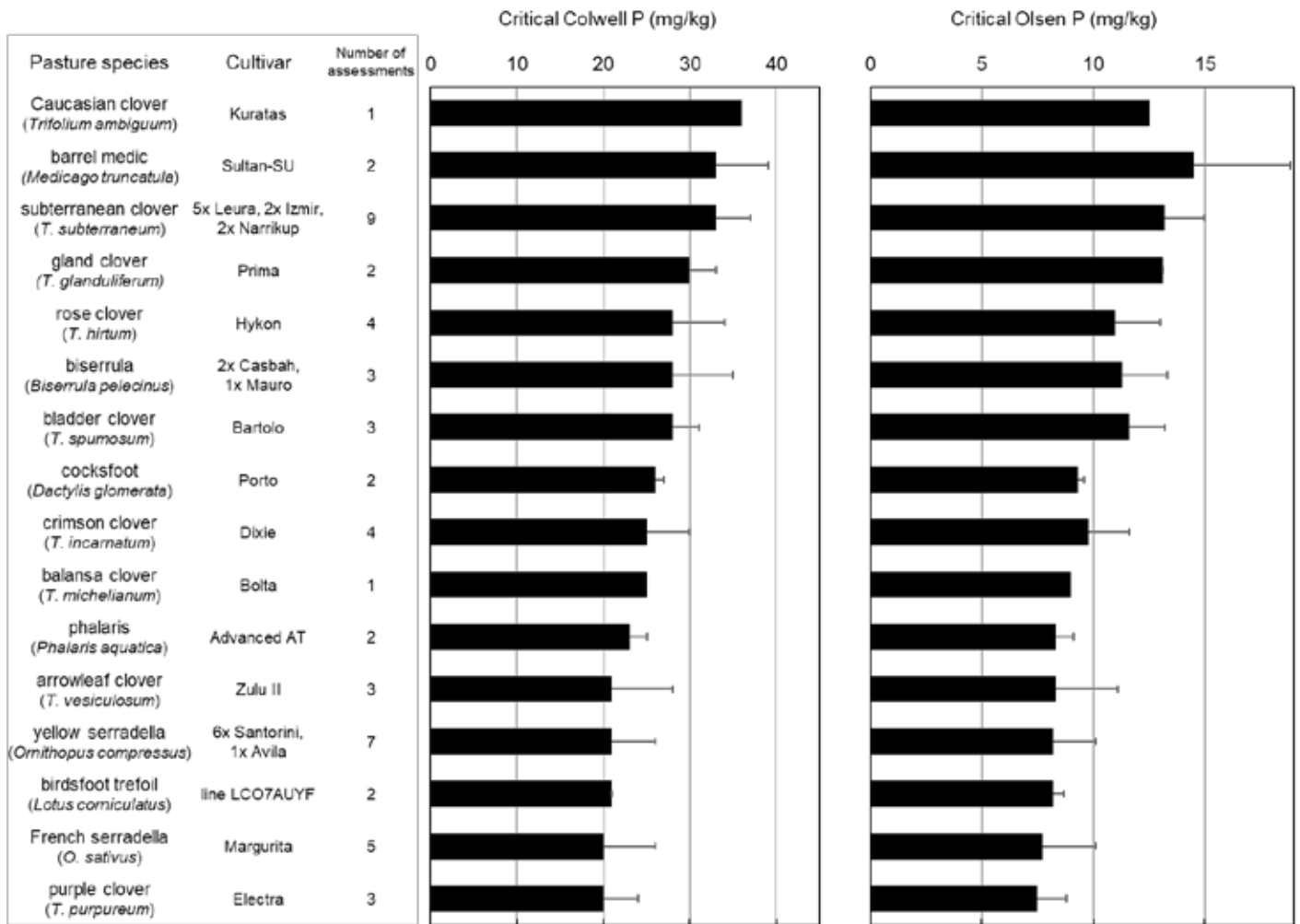


Figure 2: The critical soil test P concentration (corresponding to 95% of maximum yield) of various pasture legume and two perennial grass varieties grown at up to four sites (PBI range: 40-80) over a three-year period (in total, seven site-year experiments). Herbage growth responses to increased soil P availability were measured in spring. There were no significant differences in the critical P requirements among cultivars from a single species. Bars indicate 1x standard deviation. They provide a measure of the repeatability of the critical P estimate. If error bars are not shown the variety was evaluated only once. Lucerne (cv. SARDI 10) as also assessed on 6 occasions, but its critical P requirement often exceeded the highest P levels in the experiments. On this basis it is suspected that its critical P requirement was greater than Colwell P 45-50, or Olsen P 15.5-21.4. The graphs are drawn using data from Sandral et al. (2019).

The critical P requirement of lucerne was higher than that of subterranean clover. Unfortunately, the critical STP concentration for lucerne remains ill-defined because it often exceeded the highest soil P levels in the experiments.

Three forage crop legumes (crimson, purple and arrowleaf clovers) and two pasture legumes (yellow and French (aka pink) serradella) often had lower critical STP concentrations than subterranean clover. In soils (with PBI between 40-80) where subterranean clover and many of the alternative legumes

need to be fertilised to 30-35 mg Colwell P/kg soil (or 15 mg Olsen P/kg), these P-efficient alternatives could be fertilised to 20-25 mg Colwell P/kg soil (or 7.5-10 mg Olsen P/kg) to achieve near-maximum herbage yield.

Further reading:

Gourley CJP, Weaver DM, Simpson RJ, et al. (2019) The development and application of functions describing pasture yield responses to phosphorus, potassium and sulphur fertiliser in Australia using meta-data analysis and derived soil-

test calibration relationships. *Crop & Pasture Science* (accepted for publication later this year).

Nichols PGH, Loi A, Nutt BJ, et al. (2007) New annual and short-lived perennial pasture legumes for Australian agriculture - 15 years of revolution. *Field Crops Research* **104**, 10-23.

Nichols PGH, Revell CK, Humphries AW, et al. (2012) Temperate pasture legumes in Australia - their history, current use, and future prospects. *Crop & Pasture Science* **63**, 691-725.

Sandral GA, Price A, Hildebrand SM, *et al.* (2019) Field benchmarking of the critical external phosphorus requirements of pasture legumes for southern Australia. *Crop & Pasture Science* (accepted for publication later this year).

Simpson R, Graham P, Davies L, Zurcher E (2009) Five easy steps to ensure you are making money

from superphosphate. CSIRO & Industry and Investment NSW, Australia, Farm Advisory Booklet and Computer Decision-support Tool. Available at: <https://www.mla.com.au/extension-training-and-tools/tools-calculators/phosphorus-tool/>

Acknowledgements: Richard Simpson is presently researching ways to increase the effectiveness

of phosphorus fertiliser use in the "RnD4P-15-02-016 Phosphorus Efficient Pastures" project. This project is supported by funding from the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit program, Meat and Livestock Australia, Dairy Australia, Australian Wool Innovations Ltd.



Figure 3: Pasture yield assessments underway in spring 2014 at one of the experiments (near Yass, NSW) to determine critical STP benchmarks for pasture legumes.

NEW MEMBERS

The Grassland Society of NSW welcomes new members

Heydon Miller,
Holbrook Landcare Network (Dale Stringer representative),
Harry Rose;
Laurie Chaffey;
Leone de Ferranti;
Larissa Hofstede; and
Patrick Eagar.

Grassland Society of NSW membership subscriptions are due now

Annual subscriptions of \$60 for 2019/2020 are due 1 July 2019.

Payment can be made either by cheque or electronically. Account Name: Grassland Society of NSW, BSB: 032 833, Account No: 421 690, Bank: Westpac, Reference: 'Surname' and then 'first name'

You can also go to www.grasslandnsw.com.au and access the payment page via the green "JOIN NOW" button.

Payments are processed through PayPal, but you don't need a PayPal account - simply choose the option to "Pay with a credit or debit card" which is below the login area on the PayPal page. Don't forget to add your name to the comments box so we know you have paid.

Research Update

Keeping you up-to-date with pasture and grassland research in Australia. Abstracts of recently published research papers will be reprinted as well as the citation and author details in you wish to follow up the full paper.

Performance and weed-suppressive potential of selected pasture legumes against annual weeds in south-eastern Australia

Sajid Latif^{ABE}, Saliya Gurusinghe^A, Paul A. Weston^{AC}, William B. Brown^{AC}, Jane C. Quinn^{AB}, John W. Piltz^{AD} and Leslie A. Weston^{AC}

^A Graham Centre for Agricultural Innovation (NSW Department of Primary Industries), Locked Bag 588, Wagga Wagga, NSW 2678, Australia.

^B School of Animal and Veterinary Sciences, Charles Sturt University, Wagga Wagga, NSW 2678, Australia.

^C School of Agriculture and Wine Sciences, Charles Sturt University, Wagga Wagga, NSW 2678, Australia.

^D NSW Department of Primary Industries, Agricultural Institute, Wagga Wagga, NSW 2650, Australia.

^E Corresponding author. Email: slatif@csu.edu.au

Abstract: Mixed farming systems have traditionally incorporated subterranean clover (*Trifolium subterraneum* L.) and lucerne (*Medicago sativa* L.) as key components of the pasture phase across south-eastern Australia. However, poor adaptation of subterranean clover to acidic soils, insufficient and inconsistent rainfall, high input costs, soil acidification and the emergence of herbicide-resistant weeds have reduced efficacy of some traditional clover species in recent years. To overcome these challenges, numerous novel pasture species have been selectively improved and released for establishment in Australia. Despite their suitability to Australian climate and soils, limited knowledge exists regarding their weed-suppressive ability in relation to establishment and regeneration. Field trials were therefore conducted over 3 years in New South Wales to evaluate the suppressive potential of selected pasture legume species and cultivars as monocultures and in mixed stands against dominant annual pasture weeds. Pasture and weed biomass varied significantly between pasture species when sown as

monocultures, but mixtures of several species did not differ with regard to establishment and subsequent weed infestation. Arrowleaf clover (*T. vesiculosum* Savi.) and biserrula (*Biserrula pelecinus* L.) cv. Casbah showed improved stand establishment, with higher biomass and reduced weed infestation compared with other pasture species. Generally, weed suppression was positively correlated with pasture biomass; however, yellow serradella (*Ornithopus compressus* L.) cv. Santorini exhibited greater weed suppression than other pasture legumes while producing lower biomass, thereby suggesting a mechanism other than competition for resources affecting weed-suppressive ability. Over the period 2015–17, arrowleaf clover and biserrula cv. Casbah were generally the most consistent annual pasture legumes with respect to yearly regeneration and suppression of annual pasture weed species.

Crop and Pasture Science 70(2) 147–158. <https://doi.org/10.1071/CP18458>

Rotational grazing management achieves similar plant diversity outcomes to areas managed for conservation in a semi-arid rangeland

Sarah E. McDonald^{ABD}, Nick Reid^A, Rhiannon Smith^A, Cathleen M. Waters^C, John Hunter^A and Romina Rader^A

^A Ecosystem Management, School of Environmental and Rural Science, University of New England, Armidale, NSW 2351, Australia.

^B NSW Department of Primary Industries, Trangie Agricultural Research Centre, PMB 19, 7878 Mitchell Highway, Trangie, NSW 2823, Australia.

^C NSW Department of Primary Industries, Orange Agricultural Institute, 1447 Forest Road, Orange, NSW 2800, Australia.

^D Corresponding author: Email: sarahmcdonald18@outlook.com

Abstract: Despite the increasing extent of protected areas throughout the world, biodiversity decline continues. Grazing management that promotes both biodiversity and production outcomes has the potential to improve broad-scale conservation and complement the protected area network. In this study we explored the potential to integrate commercial livestock grazing and conservation in a semi-arid rangeland in south-eastern Australia. Understorey floristic composition and diversity were compared at different spatial scales across three grazing management treatments: (1) continuous commercial grazing management where paddocks were grazed for the majority of the year (≥ 8 months per annum); (2) rotational commercial grazing management where livestock are frequently rotated and paddocks rested for > 4 months per annum; and (3) protected areas managed for conservation with domestic livestock excluded and grazed only by native and feral herbivores. The season of sampling, rainfall, soil characteristics and the spatial location of sites were the dominant

drivers of variability in understorey plant species composition; the effect of grazing treatment on understorey plant species composition was relatively minor. However, areas managed for conservation and under rotational forms of commercial grazing management generally had greater floristic richness and diversity than continuously grazed areas, the results varying with season (spring/autumn) and soil type (clay/sandy-loam), particularly at fine scale (1-m² quadrats). These findings indicate that rotational grazing management on commercial properties has the potential to improve biodiversity conservation outside the reserve system compared to conventional grazing management.

The Rangeland Journal 41(2) 135–145 <https://doi.org/10.1071/RJ18090>

Post sowing weed, disease and pest control

Editors Note: This article "Post sowing weed, disease and pest control" is a continuation of a series of articles modified from the Temperate perennial pasture establishment guide - steps to ensure success published by the NSW Department of Primary Industries.

The Temperate perennial pasture establishment guide is available at www.dpi.nsw.gov.au/tppeg

It is essential that new pastures are monitored to minimise the impact of weeds, disease and pests. Weed and pest infestations are the main reasons that emerging seedlings fail to establish.

Weed control in seedling and established pastures

Weeds cause more pasture establishment failures than any other factor. Regular, thorough paddock inspections are critical to ensure any weed problems are identified and addressed early.

Weed control in seedling grass-legume pastures

There is no herbicide available that will control grass weeds in a seedling grass pasture. Grass weeds must be controlled before sowing the pasture. Broadleaf weed seedlings can be controlled using selective herbicides with minimal impact on pasture species if the principles below are followed:

- Use only herbicides registered for the target weed in the current situation;
- Use the registered rate;
- Control is most effective while the weeds are young and actively growing;
- Ensure legume seedlings are at least at the third trifoliate leaf stage, but before the eighth trifoliate leaf for some herbicides – check label recommendations;

- Ensure the temperature is appropriate for the herbicide used. For some herbicides there is increased risk of damage to legumes if used when temperatures are greater than 18 °C, e.g. bromoxynil and flumetsulam; and

- Herbicide applications late in the season will significantly reduce seed production of annual legumes.

Weed control in established grass-legume pastures

While there is a range of selective herbicides registered for broadleaf weed control in pastures, the options for grass control in grass-legume pastures are limited. Spray topping of annual weeds such as capeweed, annual ryegrass, barley grass and vulpia with glyphosate or paraquat in Year 2 will prevent set seed and slow the build-up of these invasive weeds. Always read the herbicide label and follow all directions and precautions to minimise any damage to the young pasture. Check and follow label recommendations for stock withholding periods.

Disease control post sowing

Identification of diseases is essential to determine appropriate treatments or strategies. Chemical control of disease of pastures is often expensive and is usually only used in specialist pastures, e.g. seed crops. The only option for many pasture situations is to minimise disease risk by selecting resistant or tolerant varieties, if available.

The impact of disease on can be reduced by techniques including the following:

- Maintain plant vigour and avoid stress by ensuring adequate moisture and nutrients;
- Avoid conditions that favour disease development. For example, tall, rank growth will increase humidity within the canopy and favour fungal diseases such as rust in ryegrass and phalaris;
- Grazing or harvesting slightly early can open up a canopy and remove

diseased material. However, do not risk the spread of disease by moving stock from infected to disease-free areas; and

- Practise good hygiene with farm equipment when travelling from diseased areas.

Pest control post sowing

Monitor your new pasture for signs of pest attack. Identify and treat early, if required.

Pest monitoring

Pest infestation can occur at any time, but plants are particularly susceptible during emergence and the seedling stages. Pastures should be checked for pests and signs of damage frequently, throughout the growing season. Commencing 2 to 3 days after sowing, newly sown pasture should be checked at least weekly in the first 3 to 4 weeks.

Beneficial insects in pastures

Beneficial insects occur naturally in pastures. These natural enemy species are mobile and move freely across the landscape. They can be very effective in reducing pest populations.

Pesticides can be used to rapidly, reliably and, in most cases, to economically control a wide range of pests. However, they can have a negative impact on beneficial insect populations, and may result in the development of pesticide resistance and outbreaks of secondary pests. However, even when beneficial populations are present and resistant cultivars have been used, there are situations where pesticides provide the best option to suppress pest populations.

It is important to reduce reliance on pesticides and minimise adverse effects on populations of beneficial insects by adopting an integrated pest management approach.

Spiders: Spiders are opportunistic predators that target many species of insect, including heliothis,

cicadellids and aphids. Although they are commonly found in pastures, the populations are slow to build up and so have limited capacity to respond to pest outbreaks. Spiders are sensitive to most commonly used pesticides.

Predatory beetles: Beetles dominate the ground layer of pastures. The most important families are ground beetles (*Carabidae*), rove beetles (*Staphylinidae*) and ladybirds (*Coccinellidae*). The majority of species in these three families are predators of pasture pests. Ground beetles are very susceptible to pesticides and other environmental pollutants.

Ladybirds (*Coccinellids*) - The adult and larval stages of ladybirds are voracious predators. Many species are recognised for their ability to regulate aphid populations in lucerne and have been shown to keep spotted alfalfa aphid and pea aphid populations well below economic thresholds. Some ladybird species are also predators of thrips, pest moths and butterflies. Ladybird species appear to be more tolerant of pesticides than other predatory insects.

Damsel Bug (*Nabis kinbergii*) - Damsel bugs are slender insects with grasping front legs. Both the nymphs and adult forms are predators. They feed on insects such as aphids, leafhoppers and small caterpillars, but favour the eggs and larvae of moth and butterfly pests.

Brown lacewing (*Micromus spp.*) - Brown lacewing larvae are important predators of aphids. Brown lacewing attacking an aphid.

Care when using pesticides

The negative impacts of pesticides can be moderated by their judicious use including:

- use of selective 'soft' pesticides when available;
- attention to timing, method and rate of application.

Pest control thresholds

Before undertaking a pesticide spray program consider whether control of the pest is necessary and if removal will have an economic benefit.

Thresholds fluctuate depending upon a number of factors. Consider the following when making the decision to use pesticides:

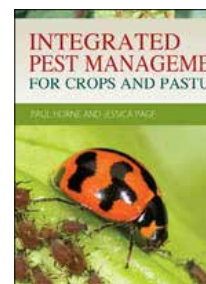
- environmental conditions and the 'condition' of the pasture;
- the extent and severity of the pest infestation and how quickly the population is increasing;
- prevalence of natural control agents such as parasitic wasps, predatory shield bugs, ladybirds and diseases;
- type and location of pest damage and whether it affects pasture yield indirectly or directly;

- stage in the life cycle of the pest and the potential for further damage;
- growth stage and capacity of the pasture to compensate for damage; and
- the amount of damage which has already occurred and the potential for further damage if a pesticide is not used.

Want to know more about insect pest control?

Check out "Integrated Pest Management for Crops and Pastures" by Paul Horne and Jessica Page.

The book describes in straightforward language what is required to successfully implement Integrated Pest Management (IPM) in cropping and grazing operations. It explains the differences between conventional pesticide-based controls and IPM, and demonstrates the advantages of IPM. The book is available from CSIRO <https://www.publish.csiro.au/books>



Grassland Society of NSW Annual General Meeting Notice

Date: Wednesday, 3 July 2019

Venue: Baxter Room, Gunnedah Services & Bowling Club, 313 Conadilly Street, Gunnedah NSW

Time: 6.15pm

Notice is hereby given that the Annual General Meeting of the Grassland Society of NSW Inc will be held on Wednesday, 3 July 2019 at 6.15pm.

The business of the meeting will be:

- . Receive and accept the Minutes of the Annual General Meeting held 17 July 2018.
- . Receive and accept President's Report.
- . Receive and accept Treasurer's Report.
- . Election of Management Committee members.
- . General Business.

Please RSVP to the Secretary, Janelle Witschi, either by mobile 0408 612 235 or by email: secretary@grasslandnsw.com.au if you are attending.

Drought in Australia.

The Khaki 'strides' upheld only by the leather plaited belt,
the colours in the checked cotton shirt and the Akubra felt
are accentuated by the brown of the elastic sided R. M.W. Boots
of the man from the bush – he loves his country, Australia, his roots.

This solitary independent unassuming and yet self assured man
falls sideways into his driver's seat of his Holden, as only he can.
Ignition on – car gathering speed as he reaches for the door,
then struggles to correct the seat belt – then foot to the floor.

With right hand only on the wheel – the two turn sharply right
and quickly whisks into the drought stricken west – out of sight.
Red dust, black dust, gray dust, bull dust – it all is a must
when a working man speeds to help his mate 'make a crust'.

Ewes, wethers, lambs, rams, heifers, and steers – they have the lot.
Struggling to survive the economy - the drought on their dry plot.
The battle is on to grin and bare it – to be strong and positive,
to fight in this drought of droughts, to live, be cheerful, and strive.

Men and women of our sunburned land negotiable to buy and sell
their future breeding stock today – or tomorrow they must kill.
There is not water - there is not grass - there is not grain
what's left is debts - strain - anguish – sorrow and pain.

The shrill of the telephones echo from room to room
as country folk communicate and discuss their gloom.
No luxuries enjoyed this decade, barely the necessities
affordable for man, woman and child – all ill at ease.

Surely the heavens will open up soon and replenish
the land, the animals, the peoples needs, and wish.
Prayers are being prayed – hope at it's highest pitch
in reaching out to survive, theres' no poor, and no rich.

Some clouds appear from a direction which is not the best
they come, they tease, they flaunt, they tease, and then rest
into the horizon for another destination – but not here
where thirst is at it's worst, and men beg for a Aussie beer.

The beauty of the country folk comes again to the fore -
they smile, they love, they welcome, always open a door.
The struggle goes on as they aim to live – in the usual way
they sacrifice, do without, for love, but always say, 'G day'.

Yes life goes on – the children pad the dusty roads to school
good wives and mothers smile, and keep their families cool,
as the menfolk – young and old, do their best to stay on top
of this dire situation and hope for much rain, grain and stock.

Dust storms roll in as the weary farmers curse the sifting sand
as billowing brown clouds rolling through their homes and land.
Then when least expected the thick clouds gather and do burst
and quench and wash the land until finally - no more thirst.

Colleen Wright. T.G. © 1.09.2006

Assessing species composition and ground cover

The two methods recommended for measuring the species composition and/or ground cover percentage of your pasture are the step point method and the pointed stick method.

Step point method for species composition

This method involves making observations and recording plant species at points at specified intervals along a straight path.

Make a mark on the toe of each of your boots. Next, take 200 equally spaced steps through the pasture, along a fixed bearing or towards a landmark to ensure a straight line. At each point, look at what the mark on your boot is touching and record desirable perennial plants, legumes, annual grasses, weeds, litter, bare ground or other. The process is repeated 50–100 times throughout the paddock. For large paddocks, this should be done in several locations to ensure that you get a representative assessment.

The pointed stick method for species composition

The method is undertaken using a 1 cm thick dowel about 30 cm long with pointed ends – or a nail can be driven into each end of the stick. It is randomly thrown across the paddock and the plants that are nearest the ends of the stick are recorded.

The process is repeated 50–100 times throughout the paddock. Fifty observations of a double-ended stick will give you 100 observations (hits) and the composition can be easily recorded as a percentage.

The total hits for each pasture component, divided by the total number of hits, indicate the percentage of each species in the pasture. Note that this method is not suitable in pastures of varying height as the stick will bounce off tall plants and you will not get a representative assessment.

The recording sheet on the next page may be used to determine pasture composition and ground cover.

In this example, 100 observations were made across the paddock. The number of times each plant species is encountered is recorded by making a mark next to the appropriate category and the percentage of each category can then be calculated based on the total number of observations.

You may want to categorise species or look at them individually. For example, you may wish to group all undesirable species as 'weeds', group all perennial grasses (introduced and native species) together, and group annual grasses together.

The Grassland Society of NSW Inc is a unique blend of people with a common interest in developing our most important resource - our Grasslands

The Grassland Society of NSW was formed in March 1985. The Society now has approximately 500 members and associates, 75% of whom are farmers and graziers. The balance of membership is made up of agricultural scientists, farm advisers, consultants, and or executives or representatives of organisations concerned with fertilisers, seeds, chemicals and machinery.

The aims of the Society are to advance the investigation of problems affecting grassland husbandry and to encourage the adoption into practice of results of research and practical experience. The Society holds an annual conference, publishes a quarterly newsletter, holds field days and is establishing regional branches throughout the state.

Membership is open to any person or company interested in grassland management and the aims of the Society. For membership details go to www.grasslandnsw.com.au or contact the Secretary at secretary@grasslandnsw.com.au or at PO Box 471 Orange 2800

Office Bearers of the Grassland Society of NSW – 2018-19

State Executive

David Harbison (President)
Peter Wilson (Vice President)
Janelle Witschi (Secretary)
Frank McRae (Treasurer)
Mick Duncan (Immediate Past President)
Carol Harris (Editor)

Committee: Amanda Britton, Helen Burns, Nathan Ferguson, Keith Garlick, John Ive, Jeff McCormick, Lester McCormick and Stuart Tait.

Branch Representatives

Lester McCormick (North West Slopes)
Frank McRae (Central)
John Ive (Southern Tablelands)
Mick Duncan (Northern Tablelands)
David Harbison (Central West Slopes and Plains)
Nathan Ferguson & Helen Burns (South Western Slopes & Riverina)

If you are interested in reactivating an old branch or forming a new branch please contact the Secretary at secretary@grasslandnsw.com.au or by mail at PO Box 471 Orange NSW 2800

Grassland Society of NSW Snippets



Next Newsletter: The next edition of the newsletter will be circulated in September 2019. If you wish to submit an article, short item, a letter to the Editor or a photo please send your contribution to the Editor - Carol Harris at carol.harris@dpi.nsw.gov.au or DPI NSW 444 Strathbogie Road Glen Innes 2370. The deadline for submissions for the next newsletter is August 9 2019.



Electronic newsletter: Don't forget you can receive the Grassland Society of NSW newsletter electronically. Just email your details to Janelle (secretary@grasslandnsw.com.au) and you will be added to the list. Next newsletter you will receive an email notification with a link to the newsletter on the website.



Fan of Facebook - make sure you check out the Grassland Society of NSW Facebook page. You can either search for GrasslandNSW or access the Facebook page through our web site. Pasture Update details will be posted on the Facebook page as well as the website. Please feel free to Like Us, as well as post photos of pasture and/or related topics in your area.

Grassland Society of NSW – PO BOX 471 Orange NSW 2800, www.grasslandnsw.com.au

This publication is prepared by the Grassland Society of NSW Inc and printed by GK Craig Printers, Orange on recycled paper