

Newsletter

Number 46

August 2011



Communities in Landscapes, Humula group monitoring native grassland function at Humula

www.stipa.com.au



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STIPA is not an acronym. The association was named after the *Stipa* genus of grasses, now *Austrostipa*. One of the *Stipas* is commonly known as spear grass. At its inception in 1997, the association aimed to spearhead a change in attitude to native grasses. As that change is occurring, Stipa continues to promote the use of native grasses to achieve profit from a healthy landscape.

Stipa Native Grasses Association (ABN 42 300 161 459)

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From the Chair

Annabel Walsh

With the great debate raging over climate change, carbon tax and emissions trading, as farmers, we must look beyond this rhetoric and discover that building high carbon soils in our grazing and cropping systems will build healthy resilient farms.

A very important component of building carbon in our soils is to have green vegetation in our pastures for as many days as possible.

How? Increasing the composition and condition of perennial native grasses through management decisions. Managing our animal plant interaction (grazing/resting impact) to create the right amount of disturbance which increase water and mineral cycle function, and this will promote native grasses that have been lost through our monoculture farming systems.

By having a good spread of winter and summer grasses in



our pastures, our farms will be productive 12 months of the year, this will give our livestock an even plane of nutrition and go a long way in eliminating those Autumn and early Winter pasture droughts in southern areas and late Winter in northern areas.

Problems? Putting the right grazing and cropping management principles in place to facilitate this function is not always easy. We are dealing with a complex system and we need to understand the "principles and basic natural functions" to be able to manipulate the right management on a paddock to paddock basis.

Solution? Our Stipa committee invites you to our bi

- annual conference in Holbrook this November, we have put together a group of presentations that will be of great interest to anyone who is looking to build resilience into their farming system, through increasing water holding capacity, plant composition and condition and healthy functioning soils and dare I say we might even sequester some carbon.

We look forward to your attendance and value relevant contributions.

Warmly

Annabel Walsh

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From the CEO

Graeme Hand

In this report:

- details on the Holbrook conference
- staff changes
- current projects
- future projects
- Stipa in Tasmania



Photo By Lucy Hand

Holbrook Conference

The planning for the 7th National Native Grasslands Conference, Holbrook NSW 9-10th November 2011 is well underway. The theme of the conference is Managing Native Grasslands for Soil and Animal Health. We have been lucky to get great speakers to present on the Stipa view of the world that farming and grazing that regenerates natives grasses also restores ecosystem function and biodiversity. Please see details and an article on the keynote speaker Dr. Fred Provenza in this issue.

On the Friday 11th November following the conference Fred Provenza will be presenting a detailed workshop on “The Web of

Life—How behavior links humans and animals to Landscapes.”

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Staff Changes

Kristine Mibus who has been working part time for Stipa has secured a full time position in Hamilton. Kristine did a great job and we wish her the best in her new role. Debbie Milne who has great skills with running her own business and organizing conferences has begun working part time for Stipa. Debbie will be the point of contact for all membership and conference details and can be reached on stipa7@bigpond.com

Current Projects

The Communities in Landscapes Project is really getting to the performing stage and we are actively working with the 6 groups (2 x Central West CMA, 2 x



Col Seis presenting on pasture cropping in Tasmania

Lachlan CMA & 2 x Murrumbidgee CMA) on developing trials exploring farming practices that regenerate perennial native grasslands. For more details contact Graeme.

The Bengworden Landcare Project (near Bairnsdale, Vic) - Regenerating Perennial Grasslands Workshop Series and Farm Grazing Project (funded by Caring for our Country) is halfway through and going well with great turn up and trial sites being installed to determine plant recoveries and animal impact required on individual farms. Part of the focus has also been on developing management practices that control African lovegrass

(*Eragrostis curvula*) and promote highly functioning perennial pastures

Future Projects

Some of the project areas that have been developed are:

- perennial grass weed control such as Chilean needle grass, Serrated tussock and African lovegrass
- woody weed control through management
- native grasses as stock shelter
- pasture pests/ grub control
- improving soil health through management

- native grasses ability to improve animal health

Let me know if you have any groups that would be interested in participating in a project

Stipa in Tasmania

On Friday 4th March, Annabel Walsh, Col Seis and myself in Partnership with NRM South presented to a group of farmers at Brett and Ruth Hall's property "Montlea" Oatlands, Tasmania.

This was a great day and really enjoyable for all apart from the

very cold conditions. Col & I knew we were in trouble when all the locals turned up in beanies and gloves.

The day involved discussion on the benefits of being a member of Stipa and included discussion on management practices that regenerate perennial native grasslands.

The day finished with a field walk and discussion on monitoring and native grass identification. Thanks to all the staff at NRM South for organizing and facilitating the day



Field walk at the Stipa/ NRM South workshop March 2011

7th National Native Grasslands Conference

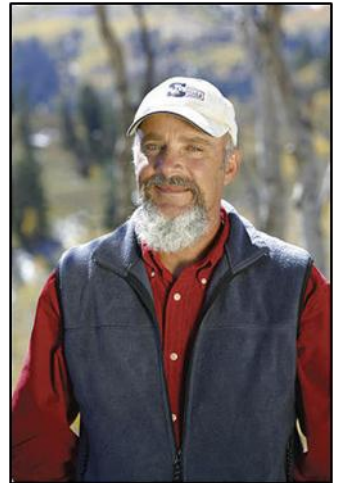
Managing Native Grasslands for Soil and Animal Health

Holbrook Town Hall,
Holbrook, NSW, Australia
9th and 10th November 2011

Day 1

- **Dr Fred Provenza, Professor, Emeritus, Utah State University USA . Animal nutritional wisdom and feeding behaviour – how this impacts on human health.**

Dr Provenza is a leading authority on animal feeding behaviour and management. He has co-authored over 230 scientific peer reviewed papers and spoken at numerous international conferences . He has also conducted over 41 workshops for scientists and land managers in 6 different countries including the USA and Australia. He established the consortium BEHAVE (Behavioural Education for Human, Animal, Vegetation and Ecosystem Management) in 2001.



Dr Fred Provenza

- **Dr Dean Revell, Principal Scientist, CSIRO – The Australian Perspective**
- **Bruce Maynard, Narromine NSW – Animal Handling / Management**
- **Holbrook region field tours**

Day 2

- **Soil Health**

Walter Jehne, Healthy Soils Australia

Declan McDonald

- **Pasture Cropping and Livestock Systems**—Building natural capital and biological resilience with low inputs

Graziers, Colin Seis and Graham Strong

Jim Virgona, CSU

Nathan Heath, Murray CMA

- **Native pasture composition and condition**—The role of animals.

Dr Magali Wright, NRM South Tasmania

Graeme Hand, CEO Stipa

Peter Ampt, Sydney University

Rebecca Cross,, Sydney University

- **Healthy People**

Dr Fred Provenza, Professor Emeritus, Utah State University, USA



Mosely's "Etwanda", Cobar

For Sponsorship and Trade Display Opportunities as well as Full Conference program and registration form, go to

www.stipa.com.au

Conference contact: Graeme Hand, Stipa CEO

Ph 0418 532130 or email

graeme.hand@bigpond.com



Accommodation - Visitor Information Centre Ph 02 6036 2422 or

www.greaterhume.nsw.gov.au

Mosely's "Etiwanda", Cobar

Invasive native scrub management guide launched

Landholders in Western NSW affected by invasive native scrub (INS) now have another arrow in their quiver with the release of a best management guide on the issue.

The comprehensive 144 page publication gives landholders information, case studies and the latest science to help manage INS and rehabilitate native pastures and open woodlands.

The publication is the result of the three year INS research program run by the Central West and Western Catchment Management Authorities (CMAs).

To find out more about the research program and get a copy of the publication *Managing INS to rehabilitate pastures and open woodlands* contact Rod Campbell on 6881 3430 or

rodney.campbell@cma.nsw.gov.au.



Tom Gavel (Central West CMA Chairman), Terry Pitkin (Hermidale landholder) and Andrew Mosely (Western CMA Board) in a treated INS site.

Promoting seedlings or tillering of native perennial grasses?

Graeme Hand

Key Points:

- *Confusion exists on whether it is better to focus on more perennial grass plants through seedlings or managing current plants for more tillers*
- *To regenerate native grasslands it is necessary to promote seedling germination and establishment*
- *Massive seedling germination and establishment is possible by managing soil surface disturbance through high animal impact and long recovery periods.*
- *Recipe based land management does not work. Monitoring of outcomes is required to regenerate native perennial grasses*

At a recent talk I was at with Dr Christine Jones and Nicole Masters (NZ) a question was asked about why experts seem to be in conflict over different practices. Much of this confusion, I believe, is that understanding and management predetermines

outcomes.

An example of this confusion is the number of times when we are talking about increasing native perennial grasses both in density and diversity as well increasing ground cover by producing litter and making sure it is composting/ decomposing to provide water infiltration, nutrient cycling and reduced erosion that the question along the lines of “but you will not get any tillering or seedlings” comes up.

This is in direct conflict with what we see where people set up native grass regeneration trials (see Stipa Newsletter, Number 45, December 2010 page 7) and photo Regenerating Seedlings. This photo is from a property in Tasmania and is typical of what we see in the majority of the trial areas. Mark Gardner from Dubbo has extensive monitoring results showing that this occurs in paddock as well



overtime the perennial grasses are weakened by overuse creating the conditions that these plants need to germinate and establish. This type of management does not promote seedling germination and establishment as it does not

Regenerating Seedlings (Photo Dr Magali Wright)

as in trial areas. Recent research from Sydney University also confirms that management drives perennial grass density at a paddock scale. (Ampt et al, 2011)

The opposite argument is that too much biomass and ground cover will inhibit both tillering and seedling recruitment. This argument is based on the idea that we need to reduce shading to stimulate the grasses by grazing early and lightly (Manske et al, 2004). The usual outcome I see from this management is a shift to annual forbs such as thistles, Bathurst burr, Patterson's curse, capeweed etc as

provide enough impact and disturbance to promote germination and recoveries generally too short for establishment. This has been confirmed scientifically by Roshan Thapa (see Stipa Newsletter, Number 44, August 2010 page 14).

The management that promotes recruitment of perennial grass seedlings is one that produces litter (long recovery) and then ensures that this litter is decomposing and that sufficient disturbance of the soil surface is provided to create germination sites and soil to seed contact through animal impact.

Recipe based management will not work as recovery changes with season (leaf emergence is only impacted by temperature and moisture – increasing fertility only increases leaf size www.evergraze.com.au) and animal impact needs to change with the amount of litter present. Arguing about how long the recovery needs to be or how high the density of the animals is missing the point that it is creating the conditions or outcome that initiates germination and establishment.

Starting points are generally greater than 6 month recoveries and stock densities at least 100 times stocking rate (see Stipa Newsletter, Number 45, December 2010 page 7).

References:

Thapa R., Kemp D., Michalk D., Badgery W., Simmons A., (2011) Seedling recruitment of native perennial grasses within existing swards, *CSIRO Crop & Pasture Science*, 62, 591–602

Manske L., Kraus A., Jirik T,

(2004), *Deferred-Type Grazing Systems Reduce Grass Plant Density and Animal Performance*, Range Research Concise Communications 2001–2004 North Dakota State University

Ampt P., Doornbos S., (2011) *Communities in Landscapes project, Benchmark Study of Innovators, DRAFT Report, August 2011, Sydney University (not yet published)*

Photo below is of Weeping Grass (*Microlaena stipoides*) germinating and establishing through silver grass (*Vulpia* spp.) litter. This occurred after animal impact to promote germination and establishment and litter contact with the soil.





Dr Fred Provenza

Workshop

The Web of Life: How behaviour links humans and animals to landscapes

Friday 11th November 2011

(following the 7th National Native Grasslands Conference)

Holbrook CTC, Holbrook NSW

9.00am to 3.00pm

This workshop will continue the theme of the conference

“Managing Native Grasslands for soil and animal health.”

Dr Provenza is a leading authority on animal feeding behaviour and management. He established the consortium “*BEHAVE*” with the Utah State University in 2001.

“The BEHAVE program focuses on livestock behavior and understanding how animals learn what to eat and where to live. Understanding how animals learn may enable us to train our animals to fit our landscapes rather than needing to manipulate our landscapes to fit our animals. Managers can change the behavior of animals because behavior is flexible and depends on its consequences. Furthermore, behavioral remedies to land management problems tend to be environmentally and animal friendly. Using grazing to sustain and improve rangelands will reduce our reliance on expensive machinery, fossil fuels and toxic herbicides.”

Source <http://extension.usu.edu/behave/htm/principles>

***Workshop registration form, go to
www.stipa.com.au***

Biography

Dr Fred Provenza is originally from Colorado USA, where he began his career working on a ranch near Salida. He worked on the ranch while earning his BSc Degree in Wildlife Biology from Colorado State University, and upon receiving the degree in 1973 he became Ranch Manager.

Later, as a research assistant and technician at Utah State University, he earned his MSc and PhD Degrees in Range Science. He joined the Faculty there in 1982 and was a Professor in the Wildland Resources Department.

His research and teaching focus is on understanding behavioural processes and using that understanding to better provide management. For the past two decades, he has studied how learning affects food and habitat selection by herbivores.

He has been author and co-author of over 200 publications in peer reviewed journals and books, and a key note speaker at numerous national and international meetings.

He has been recognised for his endeavours in research and teaching. In 1994 he received the Outstanding Achievement Award, and in 1999 he received the W.R. Chapline Research Award, both from the Society for Range Management for exceptional accomplishments in research.

In 2001 Dr Provenza in conjunction with the Utah State University established the consortium "BEHAVE".

Sources: University of Western Australia website http://www.uwa.edu.au/data/assets/pdf_file/0020/123167/Biography_Fred_Provenza.pdf

Workshop

The Web of life:

How behaviour links humans and animals to landscapes

Dr Fred Provenza

Friday 11/11/11

Holbrook CTC

What Does It Mean to Be Locally Adapted and Who Cares Anyway?

Provenza, F. D. (2008). What does it mean to be locally adapted and who cares anyway? *Journal of Animal Science*, 86(14_suppl), E271-284. doi:10.2527/jas.2007-0468

Abstract

The availability of fossil fuels will likely decline dramatically during the first half of the twenty-first century, and the massive deficits probably will not be alleviated by alternative sources of energy. This seeming catastrophe will create opportunities for communities to benefit from foods produced locally in ways that nurture relationships among soil, water, plants, herbivores and people to sustain their collective well beings. Agriculture will be much more at the heart of communities than it is currently, but by necessity, it will no longer be so dependent on fossil fuels to power machinery or to produce fertilizers, herbicides and insecticides to grow and protect plants in monocultures, antibiotics and anthelmintics to maintain the health of herbivores, or nutritional supplements and pharmaceuticals to sustain humans. Rather, from soils and plants to herbivores and people, we will have to learn once again what it means to be locally adapted to the landscapes we inhabit. In the process of re-learning

these skills, plants will become more important as nutrition centers and pharmacies, their vast arrays of primary (nutrients) and secondary (pharmaceuticals) compounds useful in nutrition and health. There also will be a need, as in times past before our heavy reliance on fossil fuels, to produce livestock in easy-care systems that match seasonally-available forages with production needs, and that match animals anatomically, physiologically and behaviorally to local landscapes. This will mean reducing inputs of fossil fuels to increase profitability by: 1) matching animal needs to forage resources; 2) selecting for animals that are adapted anatomically, physiologically, and behaviorally to local environments; 3) culling animals unable to reproduce with minimal help from humans, and 4) creating grazing systems that enhance the well-being of soils, plants, herbivores, and people.

Publishers full text available at <http://digitalcommons.usu.edu/behave/70/>

Book Review—Graeme Hand David's Mason Jones new book - Should meat be on the menu? (ISBN 9780646531373)

In April 2010, David completed research on, and published, an 85,000 word book titled 'Should meat be on the menu?'

The book deals with the issue of the global warming gases emitted from farm animals. It points out that, far from being net emitters of carbon, sheep, cattle and other livestock only emit the same amount of carbon as they source via plants. The plants, in turn, source their carbon from carbon dioxide in the atmosphere through photosynthesis. The net result is, carbon-in equals carbon-out. There is no net gain.

David's book points out that, not only are farm animals neutral with

respect to the atmospheric carbon cycle, they can actually be the agents of significant carbon dioxide draw down from the atmosphere and its long term sequestration in the soil.

David's ability to simplify arguments and provide clear evidence makes for a great resource for discussing the relationship between animals, plants and healthy ecosystems. Even though I did get stuck on a few details for example that horses are selective grazers and cause weeds when this is a result of poor management such as set stocking of horses I would recommend this book.

Some of this review has been taken from David's website www.journalist.com.au . This book is available for purchase on his website

Winona Native Seeds FOR SALE

- Warrego seed—*Paspalidium distans*(graded)
- Armgrass Millet—*Brachiaria milliiformis*(graded)
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 - Red Grass—*Bothriochloa macra*

Contact: Colin Seis on 02 6375 9256 or colin@winona.net.au

Never eat the weed and always let it seed

Graeme Hand

Key Points:

- *Long term control of weeds requires management that creates healthy, perennial, suppressive grasslands*
- *The key to creating healthy suppressive grasslands is adequate recovery and producing a functional soil surface*
- *A focus on eating the weed usually means that recovery is not the focus and can impact animal health and produce a non functional soils surface*
- *Trying to stop weeds from seeding also produces the same result this includes herbicides*
- *The viable soils seed bank of weed seeds is massive so adding another years seed does not significantly change this bank*

At a recent weeds forum in NSW (part of the Communities in Landscapes project) several presenters

were talking about how we need to understand when weeds seed, when they are palatable or toxic, how many seeds they produce etc. which goes under the description of understanding the phenology of the plant.

My experience is that understanding phenology does not help in controlling weeds as weed control comes from a focus on promoting the germination and establishment of healthy perennial grasses and understanding the weed apart from when it is at its weakest (usually at germination) is of little value.

During one of the presentations the rhyme came out that “one year’s seed seven years seed”. This sparked me to come out with the rhyme “I always tell the farmers to never eat the weed

and always let it seed” created a slight murmur and some furrowed brows. As I was making this apparent conflicting statement I had running photos of before and after and fence line effect of weed control which demonstrated control of blackberry, bracken fern, gorse, onion grass, thistles, capeweed, horehound etc. This made it hard for many to argue with the proposition.

One of the reasons stated for trying to eat the weed is that they will shade out the perennial grasses. Usually the lack of grasses is the result of overuse and not from shading. See the article on Promoting seedling or tillering in this newsletter. Christine Jones has written on how the below ground competition from big, healthy, perennial grasses “starves” weeds and eliminates or suppresses them. The focus on stopping weeds seeding can result in not focusing on the perennial

grass recovery and producing a health functioning soil surface (100%cover with decomposing litter at the soil / litter interface as explained in Landscape Function Analysis)

When I look at work on checking viable soil seed banks it is clear that there is a massive amount of viable weed seed in the soil. For example Ian Lunt’s work shows that the soil seed bank of species rich kangaroo grassland contained 8796 – 23950/m² of viable silver grass (*Vulpia bromides*) seed. This is more than enough seed to cover the whole area much less each square metre. Adding another year’s seed to this bank will make little difference.

Let me know if you would like a copy of the presentation or more clarification

Lunt, I., (1990), The soil seed bank of a long-grazed Themeda Triandra grassland in Victoria. Proceedings of the Royal Society of Victoria 102(1): 53-57. ISSN 0035-9211.

Crossword

Christine McRae

Across

2. Seed ----- is important for formation of a persistent soil seed bank
6. Another name for the C4 photosynthetic pathway, the Hatch ---- pathway
9. Monocots have --- seed leaf
10. The town in southern NSW where the 7th Stipa native grasses conference will be held
11. This holds the grass inflorescence above the leaves
12. Smooth, without hairs etc.
13. Urn shaped
14. Fe ?
15. An important identification feature at the junction of a grass leaf and its' sheath
22. Dr Dean Revell is project leader in the ----- project which is trialling forage shrubs
24. ----- selection is a process that results in a generation to generation change in genotypes within a population
25. This grass is often seen growing on old sheep camps
30. The zone of influence immediately surrounding a plant root
32. Grass leaves and stems possess - ----- meristems which allows them to continue growing after defoliation
33. Opposite of alkaline
34. C4 grasses grow best in which season
38. Keynote speaker at the 7th Stipa conference, Fred -----
40. An animal that feeds only on

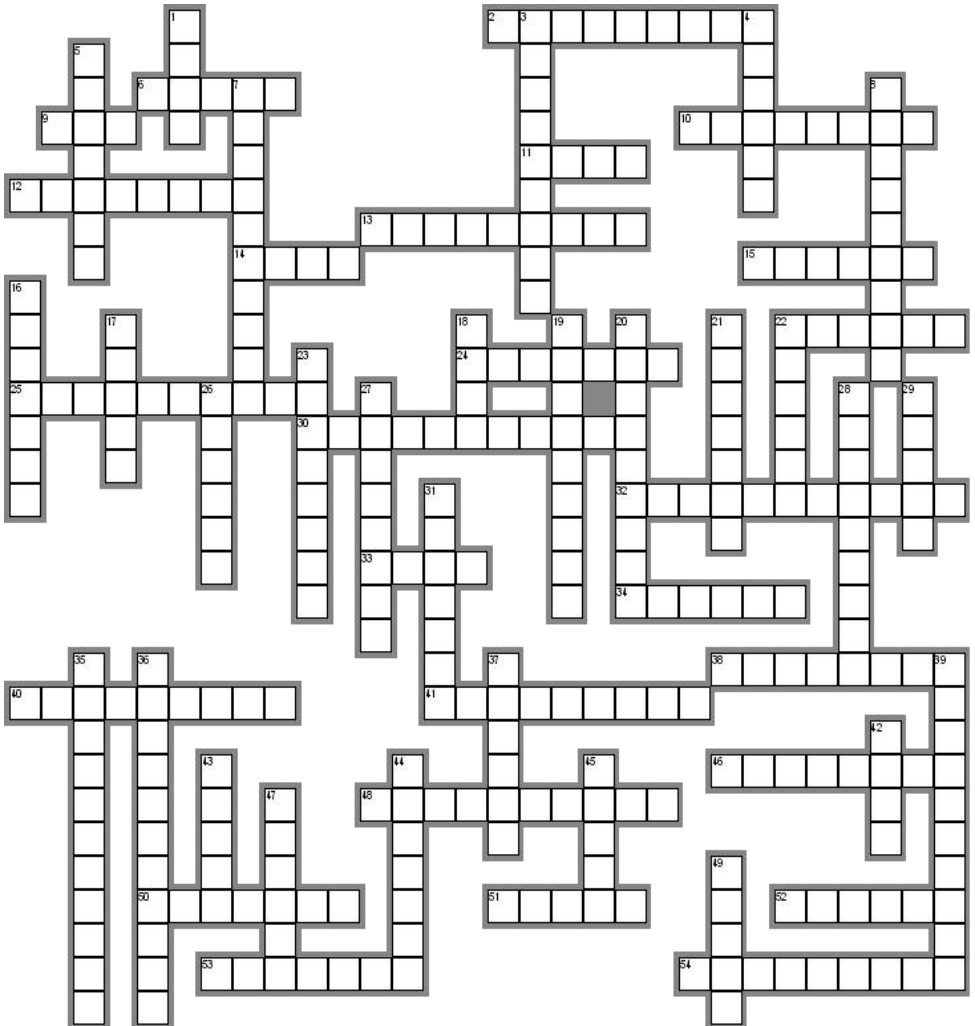
- plants
41. Microlaena stipoides can exclude the uptake of this toxic element
46. Star shaped
48. Not woody
50. Positively charged ions
51. O3
52. ----- of mycorrhizal fungi can increase the absorbing surface area of plant roots up to 1,000 fold
53. Basal cluster of leaves arranged in a circular pattern
54. Plant cell walls are made up mostly of this

Down

1. Cleistogamous flowers are always ---- pollinated
3. Almost circular
4. ----- Box, Eucalyptus melliodora
5. Wedge shaped
7. Growing in tufts
8. Having more than two basic sets of chromosomes, common in Poaceae
16. This organ regulates gaseous exchange between the leaf and the atmosphere
17. Aristida species have how many branches on their awns
18. Seed dispersal by ---- is known as myrmecochory
19. Covered with short, soft hairs
20. Copper wire daisy, Podolepis -----
21. Dentate
22. Not native
23. Grasses have ----- leaf venation
26. Deficiency of oxygen
27. Inflorescences of the Chloris and

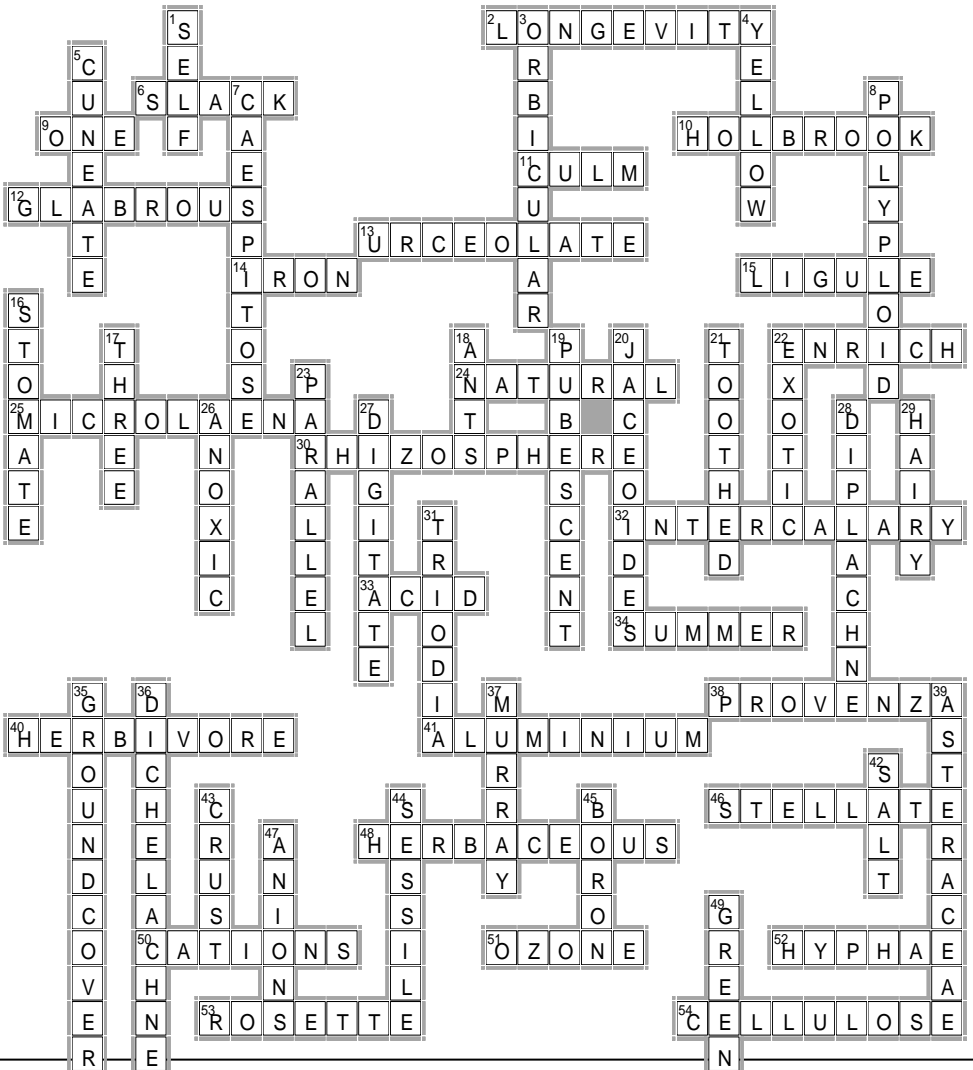
- 28. The beetle grass genus
- 29. The Austroanthonia genus have consistently ----- ligules
- 31. Hummock forming grasses
- 35. An 'organic' weed control method
- 36. Plume grasses
- 37. In which CMA area will the 7th Stipa native grasses conference be held
- 39. The daisy family

- 42. Halophytes are resistant to which type of stress
- 43. The formation of a soil ----- reduces air and water infiltration
- 44. Without a stalk
- 45. A trace element which helps form a strong plant cell structure
- 47. Negatively charged ions
- 49. Blue ----- algae can fix atmospheric nitrogen



Keep up to date with Stipa activities at www.stipa.com.au

Crossword solution



Membership renewals

Please note

Stipa is changing the way they renew memberships. We will endeavour to mail out your renewal tax invoice one month prior to your expiry date. If you would like to renew please mail us a cheque or EFT your membership.

Please remember to make reference on all EFTs and return cheques your **INVOICE NUMBER** (found on the top of your Stipa tax invoice).

Stipa caps for sale

\$12 + postage

Contact Stipa for more information

0418 532 130

Attention all members

To ensure that you continue to receive Stipa newsletters and updates, please remember to advise us of any change of address.

Also if you wish to receive emails about forthcoming events and other matters of interest, it is important that we have your correct email address.

Contact Stipa

Ph: 03 5578 6321 Fax: 03 5578 6370

Email: graeme.hand@bigpond.com



Stipa promotes and proves the profitable management of native grasses by motivated people in healthy landscapes.

MEMBERSHIP APPLICATION/RENEWAL

Name:

Company or trading name:

Address:

.....

Town: State: Postcode:

Phone: Mobile:

Email:

Annual membership (please select one – note that subscriptions include GST):

ACT & NSW \$75 Interstate \$45 Student \$30 Corporate \$500

Payment options (please select one):

Cheque/money order (to Stipa Native Grasses Association Inc.) for \$..... is enclosed.

Direct deposit: Deposit of \$..... made on (date).
Stipa Native Grasses Association account at Westpac BSB: 032 647 Account: 108 924
Please include your surname in the reference field to help us match your payment to your membership.

Send your completed membership form (with your payment, if applicable) to:
Stipa Native Grasses Association, 150 Carroona Lane, Branxholme Vic 3302

For more information contact Stipa CEO Graeme Hand on 0418 532 130, fax 03 5578 6370 or email graeme.hand@bigpond.com

Stipa Native Grasses Association aims to:

- * promote native grass as pasture and for conservation
- * educate the community about native grasses
- * document pasture systems using native grass
- * distribute information to agencies and landholders
- * network with other groups with complementary activities.