



Grassland Society of NSW Inc

Newsletter

Natural disasters such as the flooding in NSW, Queensland & Victoria, the bush fires in many states and cyclones in the north of the country seem to have become an almost weekly event over the last couple of months. As I write this, the earthquake tragedy in Christchurch is unfolding. It is hard to imagine how many months, perhaps years it will take those affected to rebuild their lives. I know that all Grassland Society members feel for those in the devastated areas and send them our best wishes.

In this, the first edition of the newsletter for 2011, we have Part 3 of John Ive's article on Soil moisture under climate change (page 2), a report by Grassland Society member Mark

Norton on his recent trip to New Zealand (page 6) and information and entry forms for the popular NSW Hay and Silage Feed Quality awards (pages 8 & 9).

Plans for the annual conference in July at Bathurst are well underway - check out the details on page 4.

The state committee is currently seeking funding to run a number of regional pasture updates later this year. What topics would you like to see covered at these pasture updates - species & cultivar selection, pasture establishment, grazing management, pest & diseases? We would welcome your input into the planning of these activities - if you wish to comment you can email me

at carol.harris@industry.nsw.gov.au or visit the society website: www.grasslandnsw.com.au

Best wishes to Grassland Society of NSW member Dr Brian Dear on his retirement. Brian has had a distinguished career as a Research scientist with I&I NSW at Wagga Wagga . His work has had an huge impact on pasture science in Australia, particularly his work with annual legume improvement - Brian's collaborative research has resulted in the development of at least 17 new legume cultivars, including 12 new cultivars of subterranean clover. All the best Brian.

Carol Harris
Editor

Don't miss the

2011 NSW Hay & Silage Feed Quality



"AWARDS"

\$5000 of prizes on offer



More details on pages 8&9

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Soil moisture under climate change

John Ive, Talaheni Yass

Part 3: The capacity of management practices to counter climate change impacts

Australian agriculture has a long and proud record of adaptation and innovation to changing conditions and a similar response to climate change will no doubt follow.

Faced with more time at or below permanent wilting point (PWP) there are a number of management practices that may offset, at least in part, the drier conditions expected. Practices include reducing runoff, increasing the limit of the soil moisture store (by improved soil structure or tapping deeper into the profile) and increasing water-use efficiency of crops and pastures. However, these practices are not without consequences; for instance reducing runoff will have both on-farm (reduced input to farm storages) and off-farm (reduced flows to streams) impacts.

The soil-water balance model WATERBANK was used to explore some of these practices. Firstly the “theoretical” best possible soil moisture position under climate change was established by assuming that runoff and deep drainage could be avoided and the soil storage limit increased to hold all available rainfall. This required a soil profile with a capacity for holding at least 250 mm (albeit for very rare rainfall periods) compared to the current limit of 60 mm. With these settings, the data sets for the ten global climate models (GCM) discussed in

Part 2 were in turn run through WATERBANK and comparable analysis undertaken (as in Part 2); the outcome (Table 1) establishes the ceiling target to which evolving management practices may strive.

Unfortunately these theoretical conditions do not compensate for the combined effect of the lower annual rainfall (657 to 598 mm) and higher annual evaporation (1651 to 1698 mm) conditions the GMC’s predict under climate change. With 58 per cent of the time at or below PWP this theoretical limit almost matches the driest twenty year period (57 per cent) but obviously is better than if current practices were retained under climate change conditions.

For comparison the corresponding theoretical value for the period 1889 to 2009 is 42 per cent. The theoretical conditions

although practically unattainable, reflect the best soil moisture regime possible under climate change. Therefore the outcome from adopting practical compensation practices in terms of average soil moisture over a twenty-year period will be at best equivalent to the recently experienced driest twenty-year period. Furthermore, the theoretical result for climate change conditions suggests that even the soils with the best infiltration and water holding capacity (i.e. approaching the conditions of the theoretical analysis) in the district will have an inferior soil moisture regime compared to the driest twenty-year period (December 1989 to 2009) experienced.

With the theoretical limit established for the predicted climate change conditions the following practices were assessed

Table 1. Comparison of time at or below permanent wilting point (PWP) at Talaheni for future period (2081-2100) under climate change conditions with and without adoption of practical adaptation practices and past (1889 to 2009) conditions.

Conditions & adaptations	Time at or below PWP (%)
<i>CLIMATE CHANGE</i>	
Theoretical best	57.6
Current practices	62.0
<i>PRACTICAL ADAPTATIONS</i>	
Increase soil store	60.9
Decrease runoff	61.5
Increase store & decrease runoff	60.7
<i>PAST CONDITIONS</i>	
Theoretical best	42.0
Average	51.4
Wettest (Nov 1944 - Nov 1964)	44.6
Driest (Dec 1989 - 2009)	57.0

for the countering the impact of climate change;

1. Increasing soil moisture store limit (increased from 60 to 70 mm),
2. Reducing runoff (reduced by 50 per cent), and
3. Combined effect of increasing soil moisture store limit and reducing runoff (i.e. 1 & 2).

Practical means for increasing soil moisture store include introducing persistent plant species which tap deeper into the soil profile; such qualities are normally associated with tap-rooted perennials. Lucerne is an example, although its sensitivity to high acidity and salinity severely restricts its zone. Increasing soil carbon is also promoted to increase soil moisture store, however, an annual dry matter production of 5000 kg DM/ha is required at least in this region for mere maintenance of soil carbon. With the seasonal conditions of the

past decade this has been challenging for all but the run-on areas on better soils; therefore further pasture generated gains in soil carbon are not only problematic but likely to be of very limited benefit in improving the soil moisture regime.

Runoff can be reduced by ensuring year-round ground cover as well as adopting contour and/or keyline practices and minimising conventional cultivation; the steeper the landscape and the lower the infiltration rate the more important the runoff reducing practices become. However, with less soil moisture available the retention of ground cover year-round will become an added challenge as effective rainfall rather than storage capacity will become increasingly the limiting factor.

The practical adaptations were explored to evaluate their respective capacity to counter the conditions predicted under climate change. The process involved adjusting the soil store

and runoff parameter, firstly independently and then combined, in WATERBANK and repeating the process previously outlined for each of the 10 GCMs. The soil store was increased from 60 mm to 70 mm and runoff reduced by 50 per cent. The effects of these management practices were reported in Table 1.

Unfortunately, the inference is that the combined effect of a decrease in annual rainfall and increase in evaporation cannot be compensated for by the management practices explored; in a dryland situation there is no substitute for rainfall in maintaining soil moisture at historical levels. Furthermore, management practices one would expect would enhance soil moisture conditions have little effect under climate change predictions in terms of time at or below PWP. Never the less and somewhat ironically, the benefits from implementing the same practices would be more successful should historical climate conditions persist.



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Industry & Investment

For further information on PROGRAZE contact your local office of Industry & Investment NSW, or Phil Graham, PROGRAZE Coordinator
Ph (02) 6226 2199 Fax (02) 6226 1581

Grassland Farmers - opportunities, threats and realities

The realities of farming in today's environment, opportunities to profit and the challenges ahead will be hot topics at this year's Grassland Society of NSW annual conference in Bathurst, July 26-28.

Industry and Investment (I&I NSW) agronomist Linda Ayres, said the 2011 conference would focus on production and getting the 'package right'.

"We will provide farmers with research results and practical examples of how farming systems can be managed to make a profit and remain sustainable," Ms Ayres said.

"The program has been designed to reflect current farm management practices matched with the latest technology and scientific findings."

A series of presentations and field trips will take participants on an information rich journey through production issues, pasture management, animal nutrition and soil health.

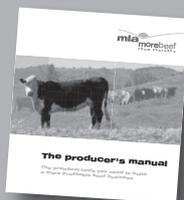
The Society's 26th annual conference will feature presentations by well-know Livestock Health and Pest Authority veterinarian, Bruce Watt, soil nutrition consultant

Dr Doug Edmeades from New Zealand, and researchers from Charles Sturt University and I&I NSW. The conference program also features a number of local farmers. All speakers will address the theme 'Grassland farmers - opportunities, threats and realities'.

More information about the conference can be found on the Grassland Society of NSW website, www.grasslandnsw.com.au or by contacting the Secretary Janelle Witschi on 02 6369 0011 or at secretary@grasslandnsw.com.au



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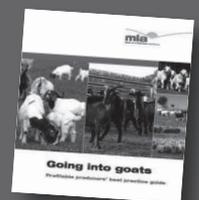
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FlyBoss - valuable information for the flystrike season

Record recent rains through inland Queensland, NSW and Victoria - and the forecast for more rain into autumn - has the sheep industry on flystrike watch.

While farmers and graziers are experienced in dealing with this issue, there is a new resource available which draws together all the proven methods and latest information to help minimise flystrike problems.

Known as 'FlyBoss' the website (www.flyboss.org.au) allows farmers to plan an approach to reducing flystrike risks within day-to-day management constraints, using best practice for chemical application timing and optimising animal welfare.

Developed by the Sheep CRC with partner organisations - Australian Wool Innovation and the state departments of Primary Industries - 'FlyBoss' has already had several thousand users since its launch in June 2010.

Sheep CRC Industry Training Leader, Lu Hogan says the website is a tool that is easy to access and use, and can provide localised information. "Importantly, FlyBoss can help develop a plan and schedule for any sheep

enterprise in any location." It draws on the successful experiences of producers and the latest research findings on:

- Susceptibility
- Flock management options
- Treatment methods
- Interactive tools to predict outcomes
- Breeding and selection

"Sheep can be affected by breech strike and/or body strike; reducing the overall risk of flystrike requires regular monitoring in tandem with an informed, integrated and planned approach - rather than ad hoc, one-off decisions such as crutching, jetting or shearing," Lu says.

The information in FlyBoss is supported with training workshops that are being delivered; see the 'More information-Industry training section of FlyBoss.

Flystrike has been a major concern for sheep producers for many decades, ever since the *Lucilia cuprina* blowfly arrived in Australia in the early 1900's. Recent estimates are that each year treatment costs and lost production associated with flystrike cost the industry \$280

million. As the number one research priority at the Australian Wool Innovation, more than \$25 million has been invested in flystrike prevention technology since 2005.

FACT FILE

- Blowflies thrive in warm, humid conditions
- *Lucilia cuprina* is the primary sheep blowfly responsible for initiating most blowfly strikes
- Under current and forecast weather conditions, the risk of body strike increases
- Chemical type and application method are important considerations in planning flystrike control

For more information
contact Janelle Holzberger
on 02 6773 2927



Wrightson Seeds

Grassland member travels to New Zealand

Mark Norton, Industry & Investment NSW, Canberra

Editors Note: *Dr Mark Norton received a travel grant from the Grassland Society of NSW to visit New Zealand in November 2010.*

The main purpose of Mark's visit to New Zealand was to attend the Australian Society of Agronomy Conference held at Christchurch – Mark was the Secretary of the conference and presented a paper. While in New Zealand Mark also visited NZ AgResearch Institutes at Lincoln and Palmerston North to deliver a seminar and liaise with other grassland scientists.

The following report presents the highlights from Mark's travel to New Zealand.

The 15th Australian Society of Agronomy Conference at Lincoln, New Zealand.

This conference was jointly staged by Australian Society of Agronomy (ASA), the NZ Grassland Association, the NZ Agronomy Society and the NZ Soil Science Society. This was the first time that the ASA Conference has been staged outside of Australia. Overall there were 510 conference registrants from 14 different countries - the bulk from New Zealand and Australia (341 & 145). The other participants were from China, India, Tanzania, Brazil, Japan, Chile, France, Indonesia, Ireland, South Korea, Russia and USA.

Professor Peter Cornish, a former scientist with NSW Agriculture, was awarded the most prestigious accolade of the Australian Society of Agronomy, the C. M. Donald Medal. Peter's subsequent Donald Oration extolled the benefits of undertaking farmer participatory research and his humility and enthusiasm inspired his listeners.

Conference plenary presentations covered a diverse range of topics including:

1. Can we feed the world in 2050? (presented by Dr Greg Edmeades, ex CIMMYT);
2. Agricultural productivity in Australia and New Zealand: trends, constraints and opportunities; (Dr Michael Robertson, CSIRO);
3. Promoting food security by supporting Agricultural R&D; (Prof. John Mullen, ex I & I NSW, now Charles Sturt Uni);
4. The Sustainable Use of Water Resources for Agriculture and Horticulture; (Prof. Brent Clothier, Plant & Food Research NZ);
5. Greenhouse gas fluxes in grazed pastures; (Dr Harry Clark, NZ Agricultural Greenhouse Gas Research Centre);
6. A postscript to "Peak P" – an agronomist's response to diminishing P reserves (Prof. Peter Cornish, ex NSW Agriculture, Uni Western Sydney).

The topic areas of the concurrent sessions included: Climate Change-Future Farming; Simulation & Decision Support; Crop Production-soil water & WUE; Crop Production-N & P use; Pasture production-physiology & breeding; Crop Production-precision agriculture; Crop Production-development & herbicide management; Crop Production-nutrient management; Crop Production-high rainfall zone; Crop Production-physiology & breeding; Crop Production-dual-purpose crops; Managing nutrient loss & water quality; International crop-pasture systems; Forage crop production; Intercrops/cover &

companion crops; Pasture production-IPM; Pasture production-spatial management; Dairy pasture production & management.

I presented a paper entitled, 'The effect of lime application to an acid soil on perennial grass establishment' during one of the above concurrent sessions.

The complete Conference proceedings can be viewed at www.agronomy.org.au/proceedings/index.htm

Visit to NZ AgResearch Institute at Lincoln

At the NZ AgResearch Institute at Lincoln, I met with Drs Phil Rolston (pasture seed production researcher) and Keith Widdup (pasture grass breeder). I am collaborating with Dr Rolston to help in the improvement of seed production of the summer-dormant cocksfoot cultivar Kasbah. This is important for NSW because throughout the droughts of the 2000 decade Kasbah clearly had the best drought survival and production of any of the sown perennial grasses tested in NSW. The seed production of Kasbah is poor and to keep the cultivar in commerce research is needed to improve its seed production. Dr Rolston is essentially the only pastures researcher in Australasia with a primary focus on seed production. I first met Dr Keith Widdup in 2009 at the Summer Dormancy Workshop in USA. At Lincoln we visited one of his tall fescue breeding nurseries and discussed the techniques used for the measurement of summer dormancy (an important drought survival trait) expression in grasses.

Visit to NZ AgResearch Institute at Palmerston North

The NZ AgResearch Institute at Palmerston North shares a campus with Massey University and other research/industrial organisations including Fonterra. There my visit was hosted & coordinated by Dr Zulfi Jahufer, the former NSW Agriculture white clover breeder (1989-1994) at Glen Innes AR&AS. While at Palmerston North I met Drs Syd Easton (Centre Director), Derek Woodfield (breeder), David Hume (agronomist-endophyte specialist), Jimmy Hatier (pasture physiologist), Bruce Veit (biochemist), Alicia Scott (biotechnologist) & Warren Williams (legume breeder).

On the first day of my visit I gave a seminar attended by approximately 30 scientists entitled, '*Stories of summer survival & death-the case of cocksfoot*'. Although it is rare for summer droughts to actually kill pasture grasses in NZ there is a lot of interest in reducing productivity losses due to drought and this explains the high level of interest in my talk.

I subsequently had good discussions with Jimmy Hatier and Warren Williams both of which could lead to some fruitful future collaborations. With Jimmy Hatier the potential collaboration could extend to a refinement of methods to measure summer dormancy in grasses. The discussions with Warren Williams focussed on his efforts to cross white clover with other more drought resistant *Trifolium* spp with the objective

of strengthening drought resistance in this species. Warren often uses annual *Trifolium* spp as sources and he is confident that he understands the genetics of perenniality in this genus. I am involved in the development of perennial wheat amphiploids but a key problem with these is their weak perenniality. It is possible that insights from *Trifolium* might help in strengthening perenniality in *Triticum*.

Dairy Farm Visit

I also visited the dairy farm of Mr J. O'Connor, Kokatahi, via Hokitika (West Coast, South Island). This high-rainfall (+2000 mm) zone is one of the cheapest places in the world to produce milk because feed production is pasture-based (white clover/ryegrass) and as the climate is mild it is possible for the animals to remain outside on the pasture all year. A high proportion of the local milk is exported in various milk powder forms produced by the local cooperatively-owned factory. Jerseys are the major dairy cattle breed used there because of their high milk fat and ease of care (e.g. calving ease). A high level of mechanisation is used so that on Mr O'Connor's farm all day to day activities including the milking of 200 cows (using a rotary dairy) were undertaken by one person.

General Observations

Broadly speaking pastoral agriculture in NZ operates at a higher level of intensity than that occurring in most of Australia probably because land prices are

much higher. The mild temperate maritime climate with abundant rainfall or cheap irrigation means that farmers can economically apply high levels of input to their pastures. This greater level of investment seems to occur across the board including education. Perennial ryegrass/white clover is the preferred pasture mix with white clover providing high quality feed and the majority of nitrogen (N) to the pasture. The N fixed by white clover is crucial to the low costs of production of NZ pastoral agriculture and this is currently threatened by the clover root weevil which is decimating many NZ pastures. Biocontrol measures to control the weevil have been undertaken.

The research group at AgResearch Palmerston North constitutes one of the larger pastoral research agglomerations in the Southern Hemisphere. This group is dynamic and outward-looking with scientists of international origin (eg France, USA) or having been trained overseas. Moreover, the scientists who constitute this group cover a wide range of disciplines from the molecular to the macro level and we should be developing closer ties with them or we risk being left behind.

Acknowledgements

I thank the Grassland Society of NSW Inc. and the A.W. Howard Memorial Trust whose grants made this travel possible.

For more information: mark.norton@industry.nsw.gov.au

Would you like to apply for a Grassland Society of NSW Travel Grant in 2011?

Travel Grants are open to financial members of the Society with at least two years of continuous membership prior to the date of application - funding is available to attend conferences or other activities associated with grassland science. More details can be found on the website (www.grasslandnsw.com.au) under the membership tab.

2011 NSW Hay & Silage Awards offer discounted testing

Neil Griffiths, Industry & Investment NSW, Tocal

The Grassland Society of NSW and Industry & Investment NSW are again organising the Hay and Silage Feed Quality Awards.

The awards and use of feed quality analysis are especially important this year due to the wide variation in quality and amount of weather damaged hay and silage across NSW.

Favourable growing conditions in 2010 have provided a great opportunity to store hay and silage, however, prolonged rain during harvest meant that it has not been easy to store top quality feed.

All eligible farmers can use the awards entry form to obtain discounted hay and silage

analysis from the NSW Feed Quality Service.

Winners of the 8 awards which will be presented at the Grassland Society of NSW Conference in Bathurst in July will share in \$5000 worth of prizes from commercial sponsors Integrated Packaging, New Holland and Pioneer.

2011 NSW Hay and Silage Feed Quality Awards - Conditions of Entry

- The aim of these awards is to promote the benefits of high quality hay and silage to all farmers with emphasis on the importance of feed quality in animal production and how to achieve feed quality in conserved forages.
- Awards will be based on feed quality analysis results from the I&I NSW Feed Quality Service with emphasis on metabolisable energy and crude protein. Results will also be compared with guidelines provided in I&I NSW Silage Note 4 (www.dpi.nsw.gov.au) and TopFodder Successful Silage manual.
- Awards will compare hays and silages in each category i.e. one award for each crop or pasture type, not separate awards for hay and silage.
- Samples must be representative and must come from commercial lot size intended for feeding to animals. Minimum lot size 5 tonnes of product.
- Samples must be of forage (hay or silage) conserved and/or fed in 2010/2011.
- Limit of 4 entries (samples) per farm or producer.
- Samples (approx. 500g) are best sent using a Post Paid Feed Quality Service sample kit available from I&I NSW. Silage should be frozen in plastic bag then wrapped in newspaper before posting early in the week.

If you don't have a green FQS bag, samples can be posted early in the week to: Feed Quality Service, I&I NSW, Locked Bag 701, Wagga Wagga NSW 2650

- Awards will be presented at the NSW Grasslands Society Annual conference to be held in Bathurst July 27 and 28 2011.
- It is desirable for all entrants to keep photos and an example of entries until after awards are announced.
- Winners agree to co-operate with the organisers (I&I NSW and Grasslands Society of NSW) to conduct relevant field days, press and media following the awards.

Closing date 8 July 2011

Note: Results of early submissions will be sent out at the end of each month.

2011 NSW Hay and Silage Feed Quality Awards - ENTRY FORM

Name: Business name:
 Postal address:
 Phone: Fax:.....
 Email:
 Property address (if different):

Property Identification Code (PIC):

Sample details: Hay (\$40.95) Silage (\$68.40) Bale or pit size:

Note: *You must enclose a cheque made payable to Department of Industry & Investment NSW*

<p>Crop/pasture description (1 only)</p> <p><input type="checkbox"/> Winter/temperate pasture:</p> <p><input type="checkbox"/> Summer/tropical pasture:</p> <p><input type="checkbox"/> Winter crop:</p> <p><input type="checkbox"/> Maize:</p> <p><input type="checkbox"/> Other summer crop:</p> <p><input type="checkbox"/> Lucerne:</p> <p><input type="checkbox"/> Other:</p>	<p>Details/varieties</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
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Harvest: Date: Growth stage/maturity:

Machinery used to mow/bale/harvest etc:

.....

Storage method/facility:

Additives applied at harvest:

Quantity stored:

Time from mowing till harvest or storage: days

Payment Authorisation (must be completed)

I hereby authorise Department of Industry & Investment NSW to test the sample I have identified according to the above details as an entry in the 2011 NSW Hay and Silage Feed Quality Awards. I have enclosed a cheque for \$ _____

I accept that the judge's decision will be final and will not be challenged.

Name: Signature: Date:

Test results and findings may be provided to authorised staff and used for statistical, surveillance, extension, certification and regulatory purposes in accordance with Departmental policies. The information assists disease and residue control programs and underpins market access for agricultural products. The source of the information will remain confidential unless otherwise required by law or regulatory policies.

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Date received: _____ Accession number: _____ Accessioned by: _____

Samples checked: _____ Total number of samples: _____ Testing authorised: _____

Closing date: 8 July 2011



The Grassland Society of NSW would like to thank the following sponsors for their support in 2010/2011



better seeds, better choices



From the President

The new year is well underway. In some districts with a vengeance!

Good rainfall in many areas and well publicised flooding in others have been the features of the first couple of months of 2011, with devastating results in many areas of NSW, as well of course in Queensland and Victoria.

Fortunately, favourable commodity prices have also been a feature of the agricultural sector, but not before time for most producers. It is against this background of good seasons and plenty of pasture growth that the 2011 conference is being planned.

Members would be aware that this year's conference is to be held

at Bathurst. This will be the first occasion that our conference will take place at Bathurst and already the organisers are well advanced with the planning.

This year's conference will put an emphasis on science based technology that supports livestock production. To support this objective, there will be two addresses from international speakers on important aspects of soil fertility. The theme of the conference is "Grassland Farmers - opportunities, threats and realities"

I commend the 2011 conference to all members and suggest you put the date into the diary now - 26 -28 July.

The Society is currently seeking funds to provide pasture updates at four locations across NSW. This is a new area for the Society, but your committee believes that these activities are necessary to provide producers and agronomists with up to date information on current aspects of pasture developments including new varieties, pasture utilisation and nutrition. Both temperate and tropical pastures will be covered.

These updates will be similar to the GRDC crop updates that many producers and agronomists will be familiar with, but on smaller scale.

Best wishes to all members

Mick Duncan

Contratulations

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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 approx 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 - 2010-2011

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Hugh Dove (Southern Tablelands)
Mick Duncan (Northern Tablelands)
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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 News



New members: The Grassland Society of NSW welcomes new members, Greg Nies Armidale, Jim Benton Glen Innes and Hans Dessens Bowral.



Website Calendar of Events: Visit the events calendar at the website (www.grasslandnsw.com.au) for upcoming events and activities. If you have a relevant event you wish to add to the calendar please contact either Linda Ayres (linda.ayres@industry.nsw.gov.au) or Carol Harris (carol.harris@industry.nsw.gov.au)



Next Newsletter: The next issue of the newsletter will be circulated in late May. If you wish to submit an article, short item or letter to the editor for the next newsletter please contact the Editor - Carol Harris at carol.harris@industry.nsw.gov.au or I&I NSW 444 Strathbogie Road Glen Innes NSW 2370. The deadline for contributions to the next newsletter will be May 6 2011.

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

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