Tropical Grassland Society of Australia Inc.

TGS news & views

about pasture development in the tropics and subtropics

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Pasture boom

Pasture development is booming in Queensland; interest in pasture establishment and renovation is at an all-time high This has been driven by the current high beef prices due to our low dollar and the misfortunes of the Europeans with their BSE and now foot and mouth outbreaks.

In the older and marginal farming areas, old wheat country is being put back to pastures as yields and returns have fallen below the cost of production. Pastures offer the opportunity for profits from animal production while allowing soil fertility to be restored.

In the western areas, run-down and poorly performing native grass pastures are being replaced by introduced species with a longer-season and better productivity.

Mono-specific buffel pastures on the brigalow are being renovated by blade ploughing with 'shot-gun' mixtures of grass species and legumes being sown into the disturbed buffel.

Blade-ploughs are operating all through Queensland—from the north of central highlands to southern Queensland

The benefits of this blade ploughing include:

- controlling woody regrowth and weeds
- renovating grass growth
- trapping rainfall by roughening the soil surface.

Seed for large areas has been flown on by plane. Our company alone has supplied between 80 and 90 tonnes of grass seed over the last year for the domestic market, and we have planted thousands of hectares with our truck-mounted air seeder.

Seed shortages

Seed supplies were tight this year owing to the past dry conditions, and this was exaggerated by a very active export market which has pushed prices extremely high. We have had a hard job just to keep seed up to the blade ploughs and other planting programs. At one time, we were 'feeding' 12 blade ploughs.

Seed supplies are going to getting short again this year because of the lack of rain in the seed producing districts and some varieties will run out by Christmas.

The current success of pasture establishment and increased beef production is a direct result of years of research and development by scientists, plant breeders, seed companies, farmers and graziers. It would be a shame to let all this go through a lack of government funding.

Come to the AGM and field day

Check the next pages for details of the AGM and the field day at Ebenezer Mines. We hope to see many of you there, and bring a friend or neighbour.

AGM and field tour
See pages 2 & 3

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Note our new Web address

Society News

Our Internet address

Our old Web address of www.powerup.com.au/~tgsoaust was difficult to remember, our new web address has a shorter and friendlier address:

www.tropicalgrasslands.asn.au

See it for membership forms, an updated book list and pdf version of the newsletter.

Our Society e-mail address: tgs@tag.csiro.au

Newsletter on line

We put the newsletter on the Web site as .pdf files in two forms. There is a small sized file without pictures and (sometimes) a much larger file with the photographs included.

In the coming year, we aim to make the newsletter available only though a password.

Nomination of Fellows

A reminder to nominate that worthy as a Fellow of the Tropical Grassland Society. Fellows include those who have played leading roles in the science or development of tropical pastures in Australia or overseas.

Please send your nomination and citations in confidence to the Secretary.

How to get to the AGM and field day

From the West

Turn off the Warrego Highway to Walloon.

Go past the Amberley Air Base.

Turn right (Halt with care) onto the Cunningham Highway.

After a couple of km, you will see two old Canberra bombers displayed on the west side of the highway.

Turn right into Coopers Road just on the north side of the bombers.

Continue on for about 2 km to the Ebenezer Mine coal facility and office.

From the east

Either take the Warrego Highway and turn off at Walloon –

or take the Cunningham Highway to the raodside bombers and Coopers Road

From the south

Go north along the Cunningham Highway.

Pass the Willowbank Ipswich Raceway.

Turn left into Coopers Road just after the Canberra bombers.

Numbers for catering and seats

Please let I. Partridge (see front page for contact details) or Anthony Whitbread or David Illing know if you are going to the AGM, to the lunch or to the afternoon field walk. This is for numbers for seating at the AGM, for catering and possibly for transport around the mine site. (By the end of October, please.)

AGM and field walk

The 38th Annual General Meeting will be held on Thursday, 22nd November 2001 at the Ebenezer Mine, south of Ipswich.

The AGM will start at 11 a.m. and will be followed by a BBQ lunch. After lunch, we will see some of the mine land reclamation where large hills of spoil are growing vigorous stands of sown grasses.

Tropical Grassland Society of Australia Inc.

39th Annual General Meeting on

22nd November 2001 at 11.00 a.m.

Ebenezer Mine Office, nr. Amberley

10.30 a.m. Arrival and Smoko

11.00 a.m. Annual General Meeting

Agenda

1. Apologies
2. Minutes of the 38th AGM held at Stanthorpe
3. Executive Committee Report
4. Treasurer's Report
5. Journal Editor's Report
6. Newsletter Editor's Report
7. Harry Stobbs Memorial Fund report
8. General Business
9. Fellowship Awards
10. Election of Office Bearers
11. Presidential Address

TGS President David Illing and Ebenezer Mine Manager Thor Berding in a field of Bisset bluegrass and Finecut rhodes grass reclaimed from mine spoil.

12.30 p.m. BBQ lunch at Ebenezer Mine (price to be determined but around $10–12)

2.00 p.m. Field tour of mine reclamation pastures at Ebenezer.

We might be able to get down into the big pit. Mine management cannot allow strings of cars into the mine pit for safety reasons. (The 75-tonne dump trucks would not even feel the bump if you got in the way.) Depending on the number of visitors, we might be able to organise a bus.

From this hole in the ground to reach the black seams of coal to the pastures in the top picture.

Grasslands of Indonesia

Ian Partridge, DPI Toowoomba

Many people think of the Indonesian scenery as terraced paddy fields or rainforest. Those with an animal production might include hillsides of *Imperata* and householders cutting grass along the roadside for their penned stock.

Grasslands

But Indonesia has considerable areas of native grassland in the southern islands. Some of these islands are only a few hundred kilometres from the Top End of Australia and so could be expected to have a similar strongly seasonal monsoonal pattern of rainfall. However, the soils can be described as better than those of much of the NT, often being derived from coral limestone.

Cut ...

... and carry is the normal way of feeding penned stock in the more highly populated islands.
Cattle graze native pastures on the drier islands.

Tall grases

The natural grasslands on islands such as Sumba (rainfall under 600 mm) are tall species with annual sorghum (*Sorghum timorense*), kangaroo grass (*Themeda* species) and black speargrass (*Heteropogon contortus*). Many of the southern areas are lightly grazed, partly because of the heavy demand for cattle to be exported to the high-population islands, but also because water is in short supply.

Short grasses

Around villages, the grazing pressure is higher because stock are yarded at night and do not range so far. Under heavy grazing, the tall grasses decline but are replaced by creeping species of reasonable quality, mainly lucuntu grass (*Ischaemum timorense*) and, under heavier pressure, often by Mackies Pest (*Chrysopogon aciculatus*).

While native legumes such as glycines do not contribute much within the tall grass pastures, low-growing species are abundant in the heavily grazed pastures. Buffalo clover (*Alysicarpus vaginalis*) and the ubiquitous *Desmodium triflorum* can provide half of the forage available.

Thus the pastures range from those with high bulk but low quality to those with low bulk but high quality. The problem with the latter is that once the dry season sets in, the leaf is likely to drop and shatter.

Leucaena is commonly found along roadsides and in sheltered areas; local *Desmanthus* grows on the limestone soils.

Fire

The tall grasses are commonly burnt early in the dry season, producing a cool fire that does little to control woody weeds. Although cool fires do not damage the forest margins, they are losing the battle against the woody weeds which have now covered large areas of the better soils.

Woody weeds

Lantana was once the main shrub weed but has now been pushed out by Siam weed (*Chromolaena odorata*). Also coming in fast (and overtaking whole hillsides in Central Sulawesi) is bellyache bush (*Jatropha gossypiifolia*).

Much of the problem lies in that the grasslands are communal grazing. This does not mean that they are necessarily overgrazed but that no-one is going to take responsibility for their management. Generally, my impression is that cropping land and forest land is well managed but the importance of grazing land is misunderstood. There are probably few who understand the ecology of grasslands and the interactions of animals, grass, legumes, shrubs, trees and fire.

Ongole cattle on native grassland on the dry east side of the island of Sumba

Black speargrass in Eucalyptus alba savanna on West Timor.

Bali cattle on Chrysopogon aciculatus (Mackies pest) pastures on volcanic ash on the north side of Mt Rinjani, Lombok.

Buffalo graze short Ischaemum timorense with Desmodium triflorum and Alysicarpus vaginalis on the wetter side of Sumba. (Ever seen a thin buffalo?)

A herd of Ongole cattle in the kangaroo grass/ speargrass/sorghum grassland hills of central Sumba

Some problems in Indonesian grasslands

Siam weed (Chromolaena odorata) taking over the better soils.

Bellyache bush and prickly acacia cover some hillsides around Palu (500 mm rainfall) in Central Sulawesi.

Locust plagues have hit the grasslands on Sumba for the last 3 years. They eat the grasses but leave the weeds (Cassia tora and Stachytarpheta).

The big stick against ponded pastures

In June, the Queensland State Government decided to ban ponded pastures based on the precautionary principle* to their assessment, development and management. The new policy includes

New ponded pastures can occur only in areas above the high tide level, but not in or adjacent to natural wetlands or in areas identified as having high nature conservation or fish habitat value.

Ponded pastures in any other areas must be demonstrably ecologically sustainable.

Established ponded pastures will be progressively reviewed to determine whether they should be modified or removed.

Para grass, Aleman grass and Hymenachne must not be included in pasture mixes recommended by Government agencies.

The State government agencies will use an integrated education, extension, research and regulatory approach to prevent adverse environmental impacts and to control the spread of current ponded pasture species.

This effectively means that only native wetland species such as water couch (*Sporobolus virginicus*) or spiny mud grass (*Pseudoraphis spinensis*) or the native Hymenachne can be recommended.

Where's the Pasture Picker?

I developed the small interactive database 'Pasture Picker' to allow users to find out which species might be suitable for their conditions. This could be found on the DPI's Web site (www.dpi.qld.gov.au/pastures/4605.html), but has been missing for the past couple of months.

The new design Web site operates under a totally different sytem to the previous one and required every page to be tranformed to the new style. They then renamed each page so that, for example, a file once neatly named centro.html became 4476.html.

This has meant that the database had to be relinked.

Then along came the Queensland State Government policy on Ponded Pastures. Should a DPI Web site even mention Hymenachne, Aleman grass and para grass? Any reference to Hymenachne was ordered to be removed earlier, would Aleman grass and para go too? Would any other page that mentioned para (e.g. one on phasey bean) also be banished? It seems, at present, that they are still there but with a warning—which is fine by me. But we are taking the option for 'Ponded pastures' out of the Pasture Picker front.

I hope the Pasture Picker will return soon.

WONS or loses?

Hymenachne has now been declared a Weed of National Significance (WONS) in the same breath as Prickly Acacia, Mesquite, Parkinsonia, Rubber Vine, Parthenium and Cabomba. To put it on the same rank as those really serious weeds that cover millions of hectares degrades the significance of a WONS.

We all lose if we cry 'Wolf' at every current pet fad of conservationists.

Just how serious?

Buffel grass and prickly acacia have been written in the same sentence as leucaena as serious environmental weeds. It shows that the bureaucrats in Canberra who have probably never seen these species have been fed the spurious information by one-eyed conservationists.

*The precautionary principle says that since there might be a deleterious effect sometime in the future, no further development should be permitted now.

Volts – deadly, unsightly and warming

It is lucky this precautionary principle did not exist when electricity was first discovered. It might never have proceeded if someone had pointed out that it can kill, it would despoil the aesthetics of scenery with power poles and HT pylons, and its generation would create vast amounts of greenhouse gas.

Of course, electricity might be developed to something useful.

Letter to the Editor

~~Political~~ environmental correctness

Maybe members could circulate this letter to some of the media.

It is extremely frustrating for farmers and those who support them in the Western world, to be constantly subjected to accusations by environmental activists, who may be well meaning within their own context of "world concerns", but do not consider the farmers' rights to make a living and to contribute to the national economy. It is particularly worrying when governments strongly lean to environmentalist's claims that are often not true, or only partly so, and pass legislation hindering or even forbidding farmers to protect their crops or use proven species to improve their pastures.

Controversy sells

To make things worse, every environmentalist group is pushing its own cart with aggression and malice in their attitude, without looking at the total traffic flow. The media will only highlight news items that cause sensation and controversy as it sells papers for a greater share of the advertising market. Good news such as what good farming does to maintain the countryside and the economy does not rate as such.

Eat the grass or burn

Without farming, much of the Australian countryside would offer a constant threat of very destructive fires with untold damage to the environment and property—as happens every year in what used to be farming land in southern France, Greece and Spain.

Precautionary principle

If there would be a retrospective "environmental impact study" about European settlement of Australia in the 18th Century, it would now be decided not to settle the continent, mainly because of what urban people would do to it. The people who settled the countryside to produce food and fibres were rightly admired as pioneers and the present generation of farmers also consists of hard working honourable people who have a heart for the piece of country that they manage and cherish.

Publicity for $$

However, the "greenies" often use false arguments and even lies to get public opinion on their side and thereby politicians who only look ahead for the next few years before re-election. Some large environmentalist organisations (e.g. Greenpeace) must constantly stir up controversy on all sorts of issues in order to keep receiving financial contributions to maintain their huge investments (staff, buildings, ships) and pay for their large expenditure. They will even resort to untruths, knowing that the media will not question their statements and that, even if they do, the gullible urban public will still fall for them. Unfortunately the "man in the street' does not have all the information and often not the understanding of all the aspects of environmental issues. Many activist groups have free access to the press and some are of multinational proportions (e.g. Greenpeace) and able to spend millions of dollars in advertising campaigns to get their point of view put in the limelight. Farmers, however, are few in number, do not have free access to the public media to put their point of view and they are a group that can easily be curtailed in their daily business. But compared to urban people, farmers do very little damage to the environment.

Pasture as 'pest'?

For tropical grassland farmers, and the extension agents and scientists who support them, it is particularly hurting that grasses and legumes that have proven to be of excellent quality and ability to raise productivity and profitability are now being accused of doing damage to the country side, even being declared noxious weeds. There is no denying that plant introduction and pasture improvement combined with inappropriate management have led to

countryside damage and the escape of weeds. Poor management in combination with certain species can lead to the eradication of native species and erosion. But do the accusers use the same arguments in relation to urban development, industry and transport? Huge areas of native vegetation upon which cities have been built and are still expanding have been completely destroyed. Of course, urban people have to live somewhere and make a living, but so do farmers.

Counter the lies

There is a need to draw the attention of the public at large and the politicians to the prevailing imbalance of opinion. The arguments against those of greenies are all there and have been published in the Tropical Grassland Newsletter, but this is only read by the few converted. Even if you got a world-famous person to do a lecture tour in Australia putting the arguments in balanced perspective, he would only score a 5-line mention in the newspaper, if any, and his message would soon be forgotten.

There is a need of establishing a foundation of agri-business, farmers' organisations, farmers and their well wishers with enough money at its disposal to set up a long lasting publication campaign in the news media of Australia, using advertising bureaus that know how to get the attention of the public in order to bring a balanced view to the fore. We must not make the mistake of saying that there are no pollution problems from agriculture, but these must be offset by those from people living in cities with their rubbish, cars, airplanes, factories etc. and everybody, farmers and city folk alike, must be made aware of the need to reduce pollution, even if enforced by legislation.

I had to get this off my chest. I am always looking forward to receiving the Tropical Grasslands Newsletter and I admire your unstinting input into the cause of good pasture management.

Len 't Mannetje
Emeritus Professor (Grassland Science)
Wageningen University
The Netherlands

Editor's comment:

Maybe members should circulate this letter to some of the rural and city press. We have to counter the totally negative image that is being developed of pasture plants.

Political correctness pulled its head in (slightly) in the mid-1990s with the result that opposing views could be heard. Environmental correctness imposes the same blanket restrictions on rational debate. If one tries to put up an more balanced point of view, one is shouted down as a red-necked vandal. Farmers and graziers are not all vandals; they are trying to be responsible users of the vast resource and to make a living.

It is easy for the environmental city elite to claim that only they know the answers (and the questions), but they often have little understanding of the problems. What is needed is balance between the opposing points of view. But conservation has become a new religion —a faith that transends mere fact or science. If you believe that only you are right, you develop the right to ignore any reactionary heretics.

Organisations such as the Leucaena Network are doing what is necessary to provide such a balance. Developing their facts and proposals and going to the top levels of government to get them heard. At lower levels of bureaucracy, proposals are barred by 'true believers' who say that leucaena must be a terrible weed without ever having seen it in commercial use.

Ian Partridge

"The most highly sustainable and productive grazing system for Northern Australia."

THE LEUCAENA NETWORK

"Promoting the responsible development of Leucaena as a productive and sustainable ecosystem to build stronger rural communities."

President's Report

Submissions

We continue to have contact with CSIRO, Agforce, the University of Central Queensland, The University of Queensland, the Departments of Natural Resources and Mines and of Primary Industries, Landcare and we became members of the Fitzroy Basin Association last month.

An initial submission, with Dr Max Shelton as Project Officer, has been made to the National Action Plan for Salinity and Water Quality. There is enormous potential for the leucaena industry in this scheme, and we see major funding being made available for research, development and extension, as well as finance for Government incentives for growers.

Another submission, with Greg Brown as Project Officer, has been made to the MLA. This proposal envisages a very substantial contribution made to developing from the KX2 strain a psyllid-resistant, low-seeding and high edible mass plant.

Reducing GHG

Peter Emmery has established extensive and highly satisfactory contacts with the Australian Greenhouse Gas Office.

Two possible outcomes from this are:

- the registration of leucaena as a 'forest' in greenhouse formulae, thus including leucaena into future Carbon Credit schemes
- cash incentives for growers arising from the reduced methane emissions from stock grazing leucaena.

There have been excellent responses from DPI personnel, as well as CQ University, CSIRO and many other research organisations.

Two representatives from major chemical companies will be at our next meeting to see how they can help us with a booklet and with further research to make the planting process even more reliable.

The way for the future? Professional advocacy to counter mis-information about pasture species.

Reducing salinity

We will be meeting Dr Mike Lee, Executive Coordinator, State and Regional Negotiations, National Action Plan for Salinity and Water Quality. This visit has the support of the Hon. Warren Truss, Minister for AFFA. Other attendees include Peter Loneragan (MLA), Eric Anderson (DPI) and Dr David Midmore.

Sawn timber?

We are in the early stages of helping interested people source and test different subspecies of *Leucaena* as a timber. This is common practice in other parts of the world, providing millable quantities of hardwood in very interesting timeframes.

Please forgive us if we have not managed to communicate with some of you as we would have liked. Big loads on a few is our plea for understanding.

We intend holding our Annual Meeting and special day in March 2002. Perhaps some other gathering can be arranged in the interim.

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Ed's note:

Welcome to the more than 40 new members from the Leucaena Network.

Your professional advocacy should be an example to all graziers and farmers.

Practical Abstracts

from Tropical Grasslands Journal, Volume 35, No. 2 (June 2001)

Factors affecting the nutritive value of kikuyu grass (*Pennisetum clandestinum*) – a review — by Johan Marias, on pages 65–84.

Kikuyu grass from the highland plateau of east and central Africa has formed highly productive pastures in many countries, but is not very tolerant of cold or drought. More suitable ecotypes may exist in the natural habitat. Since kikuyu grass produces stem material throughout the growing season, its nutritive value is highly influenced by stage of regrowth and is optimised at 4.5 leaves per tiller. As kikuyu accumulates nitrogen-containing substances far in excess of animal requirements, nitrogen fertiliser should not be applied in large single applications.

Energy is limiting for milk production from kikuyu pastures, and energy supplementation is needed. The grass is deficient in sodium and also contains oxalic acid. Growing kikuyu is hampered by establishment problems and poor persistence. Preventing kikuyu poisoning in animals appears to depend on controlling army worm infestations.

Evaluation of legumes and grasses in coastal south-east Queensland — by Dick Jones, on pages 85–95.

The highest yielding legumes in the establishment year were annuals such as *Vigna oblongifolia* or short-term perennials, particularly Lee jointvetch. The most consistent long-term perennial was pinto peanut, with accession AFT 2320 better than Amarillo. *Arachis glabrata* was slow to establish but improved with time, although a vegetatively-planted *A. repens* X *A. pintoi* hybrid spread much more quickly.

Cardillo centro was better adapted to the subtropics than common centro. Creeping vigna struggled through dry years but responded well with better rainfall.

Callides rhodes was the best grass overall and could prevent Bahia grass from re-invading if fertilised, while *Paspalum nicorae* was the only grass that thickened up under these conditions.

Selecting *Chamaecrista* spp. for soil stabilisation and forage in southern China — by Bryan Hacker, Wen Shilin, Ying Zhaoyang and Bruce Pengelly, on pages 96–113.

Thirty-four accessions of *Chamaecrista rotundifolia*, 3 of *C. serpens*, 3 of *C. nictitans* and one of *C. pilosa* were evaluated at 2 site in southern China. Large differences in *C. rotundifolia* were related to latitude of origin, those from high latitudes flower earlier and had higher seedling densities than late flowering accessions. Some accessions from Paraguay and Argentina survived over winter at Jianyang where accessions from lower latitudes, including Wynn, failed to persist.

Two accessions of *C. nictitans* showed promise as a cut-and-carry forage. They had good ability to re-establish from seed and good yield; one survived at Jianyang.

Leaf appearance, death and detachment in a bahia grass (*Paspalum notatum*) pasture under cattle grazing — by W. Pakiding and M. Hirata, on pages 114–123.

The number of live leaves was high in summer and autumn and low in winter; the number of dead leaves was high in winter and spring, and low in summer and autumn. Leaf appearance was related to air temperature while death and detachment rates were related to the number of live and dead leaves, respectively. Leaves appearing in mid and late autumn survived longer than those appearing between spring and early autumn. This and the high detachment rate during the growing season are crucial factors in the grass persisting.

Intensive fodder gardens for improving forage availability for smallholder dairy production in Hai district, Tanzania — by E.J. Mtengeti, N.A. Urio and G.D. Mlay, on pages 124–127.

Permanent crops such as coffee and bananas in the highland zone of this Kilimanjaro region restrict the land available for feeding dairy cattle. Small backyard garden plots converted for extra pasture yield poorly. Grass is expected to grow without care as it does 'naturally in the wild'. We are promoting 'intensive fodder gardens' with pasture managed as intensively as the rest of the vegetable garden.

Elephant grass, guatemala grass and *Setaria splendida* were planted alone or with greenleaf desmodium, and with farm yard manure. Mean annual yields of fresh herbage in the first year were equivalent to 69, 93 and 197 t/ha for guatemala, setaria and elephant grass. Grass and grass-legume plots were similar. These results encouraged the farmers to appreciate the importance of intensive management for improved herbage and milk yield. The grass-legume mixtures reduced the need for dairy concentrate.

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