

THE GRASSLAND SOCIETY OF NSW INC.

ANNUAL CONFERENCE

The Art of Grazing Management

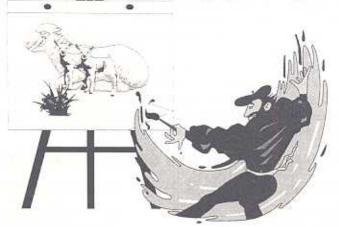


Wednesday 10th July Thursday 11th July 1996

Wagga Wagga Leagues Club Gurwood St. Wagga Wagga, NSW 2650

PROCEEDINGS OF THE 11TH CONFERENCE

A The Art of Grazing Management



PROCEEDINGS OF THE ELEVENTH ANNUAL CONFERENCE OF THE GRASSLAND SOCIETY OF NEW SOUTH WALES

Invited Papers, Contributed Papers and Poster Summaries from the Conference Held at the Wagga Wagga Leagues Club Gurwood St., WAGGA WAGGA, NSW, 2650

July 10-11, 1996

Edited by Jim Virgona and David Michalk

THE GRASSLAND SOCIETY OF NSW INC.

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 1100 members and associates, 75% of whom are farmers and graziers. The balance are agricultural scientists, farm advisers, consultants, and executives or representatives of organisations concerned with fertiliser, seeds, chemical and machinery.

The aims of the Society are to provide opportunities for members to meet in conference, at field days, or socially, to exchange information, ideas and experiences relating to grasslands.

Other 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. Ordinary (including family or farm units), student and corporate membership is available.

OFFICER BEARERS OF THE NSW GRASSLAND SOCIETY -1995/96

STATE EXECUTIVE

Stephen Millar (President)
Bill Hely (Vice President)
Malcolm Campbell (Secretary)
Jim Dellow (Treasurer)
David Michalk (Editor)
Frank Johnson (Sponsorship)
Committee: Don Arnott, Warren McDonald,
Haydn Lloyd Davies, Jack Warner, Drew
Drew Wright, Peter Wrigley, John
Brooker & Geoff Nielson.

Southern Tablelands Branch Representatives: Noel Teys, Peter Simpson

North Western Branch Representatives: Robert Eccles, Chris White Central Branch Representatives: Ian McLean, Owen Connelly

CONFERENCE COMMITTEE

Owen Whitaker (Convener)
Jim Virgona (Secretary)
Steve Slutherland (Treasurer)
Jim Virgona (Invited papers & posters)
Graeme Sandral, Owen Whitaker (Publicity)
Jim Virgona & David Michalk (Editors)
Jim Virgona, Annabel Bowcher (Brochure)
Frank Johnson (Sponsorship)
Bill Johnson, Brian Dann (Pre-conference tour)
Keith Edyvean, Dennis Lawson (Displays & posters)
Owen Whitaker (Venue & catering)
Annabel Bowcher, Jim Virgona (Registrations).
Peter Orchard and H. Lloyd Davies (Refereces)
Committee: Ross Williams, Don Kirkpatrick

South West Slopes & Riverina Branch Representatives: Owen Whitaker, Jim Virgona

Published by the Grassland Society of NSW Inc., C/- South Orange Post Office, Forest Road ORANGE, NSW, 2800. Telephone: (063) 913828 ISBN No. 1038-4453

Design and Layout: Michalk & Associates, 2 Keithian Place, Orange, NSW, 2800

Cover & Logo design: Jenni Tarleton and Annabel Bowcher

Citation: Proceedings of the Eleventh Annual Conference of the Grassland Society of NSW, Edited by Jim. Virgona and

David.Michalk

Printer: Cabonne Printers, 102 Watson Street, Molong, NSW 2866 (Telephone: 063-668239)

©The Grassland Society of NSW Inc.

TABLE OF CONTENTS

The Grassland Society of NSW Inc.	2
Conference sponsors	3
Preface	7
Life memberships: Malcolm Campbell and Peter Wrigley	8
INVITED PAPERS	
Key note address	
Can big energy users survive in low nutrient ecosystems. Tim Flannery	10
Native and naturalised grasslands	
Riverina grasslands - A personal history. Martin Driver.	18
The Pooginook story - A fundamental change in decision making. David Taylor.	24
Development of native perennial grasses for grazing. Bill Johnston.	28
Thinking holistically on the saltbush plains. Mark Rowe.	34
Pastures in the cropping zone	
Grazing by numbers makes lucerne last. Rex Williams.	41
Pastures that work in lower rainfall areas. John Daunt.	49
Twenty years of lucerne management. Bernard Hart.	52
Perennial pasture management	
How plant physiology can help us achieve better grazing management. Richard Simpson, Stephen Clark, Doug Alcock, Mike Freer, John Donnelly and Andrew Moore.	57
How can I make my pastures more profitable. Grant Burbidge.	65
Perennial pastures in a crop-ley farming system - A personal perspective. Don Dyce.	69
Beetles, mites and chicory	
Dung beetles: past, present and future. John Feehan	73
Integrated management of redlegged earth mite in pastures. David James.	76
Why I am sowing chicory. Don Kirkpatrick.	84
SEPP 46 Forum	
Grassland management in NSW: The evolution of an approach. Ian Garrard.	87
What is a native grassland? John Benson.	92
SEPP 46 dealing with the broader community's expectations: A grazier's perspective. Jim Litchfield.	97

CONTRIBUTED PAPERS AND POSTERS

Native species	
Sowing depth and emergence of seedlings of Microlaena stipoides. R.D.B. Whalley & D.J. Beckers	104
Herbage yield of some native perennial grasses. David Eddy & Denys Garden	105
Forage quality of some native perennial grasses. David Eddy & Denys Garden	106
A comparison of herbage production of a range of Danthonia spp. David Eddy & Denys Garden	107
Species establishment, evaluation and regeneration	
Methods of establishing trees on non-arable land to control weeds. M.H. Campbell & H.I. Nicol	109
A comparison of the performance of softseeded and hardseeded subterranean clover cultivars prior to and after the drought of 1994. G.A. Sandral & B.S. Dear.	111
Farmer best management practices for lucerne in 350-450 mm rainfall zone. J. Whiteley et al.	112
Weed control	
Annual grass control in seeding phalaris and cocksfoot. B.S. Dear & G.A. Sandral.	114
The effect of pre-emergent herbicides on perennial grass seedlings. G.A. Sandral & B.S. Dear.	115
The competitive performance of a weed with introduced grasses in acid soils. B.B. Rubzen et al.	116
Consol lovegrass outcompetes spiny burr grass. Robert Freebairn & Bryan Matthews.	117
The tolerance of common weeds and native grasses to acid soils. B.B. Rubzen et al.	118
The distribution and significance of saffron thistle (Carthamus lanatus) in NSW, N.S. Crump et al.	119
Tolerance of native grasses to Frenock® and Roundup®, M.H. Campbell and R. Van de Ven.	120
Glyphosate resistance in annual ryegrass. Jim Pratley et al.	122
Diseases and pests	
Preliminary survey of the incidence of perennial ryegrass (Lolium perenne) staggers in central tablelands of NSW. Warwick Wheatley	123
Phytophthora root rot, spotted clover aphids and phosphorus deficiency limit growth of irrigated subterranean clover. Gordon Murray, Kerry Wratten & Wendy Milne.	124
Fertiliser	
Using satellite imagery to achieve more efficient fertiliser use in Central & Southern Tablelands pastures in NSW. John Crichton & Ian McGowen	125
The response of a phalaris-based pasture to nitrogen fertilisation. J.M. Virgona and A. Oates.	126

Changes in plant frequency within a grazed pasture under ten different fertiliser

regimes. R.D. FitzGerald & B.R. McGufficke

127

CONTRIBUTED PAPERS AND POSTERS (cont'd)

Grazing	management	&	techniques
---------	------------	---	------------

Critical parameters for monitoring annual leys. J.A. Paul, E.C. Wolfe & P.D. Cregan	130
Grazing strategies to get more out of coolatai grass. L.H. McCormick & G.M. Lodge	131
Managing perennial pastures. Mike Keys & Mike Darby.	132
Some characteristics of summer-growin (C4) perennial grass patches that occur in improved pasture. Annabel Bowcher & Jim Virgona.	133
Improving Lotus persistence through management: site establishment. Martin Blumenthal et al.	134
The temperate pasture sustainability key program: gathering the knowledge and skills to impleme grazing management strategies. G.M. Lodge.	ent 135
The persistence of intriduced pasture species through severe drought on the northern tablelands of NSW. J.F. Ayres et al.	137
Fescue for meat project. Frank Johnson, Gavin Milne & Tony Stratton.	140
The estimation of biomass by a rod-point method. J.A. Paul, E.C. Wolfe & P.D. Cregan.	141
Fravel grant report	
Report on travel grant to attend the Fifteenth Asian-pacific Weed Society Conference in Tsukuba, Japan, 24-28 July, 1995. Peter Dowling	142
Conference Program	140

PREFACE

What's new in grazing management? No doubt this is our first thought as we read the theme of our 11th annual conference. What is new is perhaps not in the pastures we are grazing, but in our attitude to how we manage the resources we have on our farms. We as land and resource managers are, increasingly, called upon to produce more from less. Land which was once highly productive, fertile and rich in organic matter, but now less fertiliser is expected to produce greater yields than in its prime. Financial pressures are significantly greater than years ago, debt levels are higher and (with the possible exception of grain production) enterprise incomes are at one of their lowest levels ever.

It is to provide avenues of thought, insight into other peoples actions and improved technical and managerial skills that this conference has set about to show "The Art of Grazing Management". Not leaving science out, but to show by example, the skills, indeed the philosophy, required for successful grazing management.

Politicians, bureaucrats and pressure groups are forcing us, as land managers, to look at our production systems in a more than financial way- to see ourselves as part of a larger ecological system. We have to adapt and change the way we act, often whether we like it or not, or else we could well be forced to do so! The conference committee introduced a new concept- a forum on a topical issue -SEPP 46. Information and ideas will be presented and an opportunity to comment exists.

As we move towards a more sustainable future, it becomes necessary to focus on all areas of our management. Papers on such topics as dung beetles, integrated pest control and crops for particular purpose grazing, concentrate our thoughts on how we can improve various areas of our production system.

This year, being our first conference at Wagga Wagga, may I congratulate the conference committee for their hard work in putting together such a thought provoking and informative program. Thankyou to our sponsors, many of whom have supported us for our full eleven years; your support is highly valued.

Stephen Millar President

LIFE MEMBERS

Peter Wrigley

In 1995 Peter Wrigley, "Coombing Vale", Neville was elected a life member of the Grassland Society of NSW

Peter was the first president of the Society from 1985 to 1988 and has been a member of the management committee for the full period of the existence of the Grassland Society. Hugh Ross, our first life member, nominated Peter. Through Peter's efforts, the Grassland Society gained the support of the RAS, business, industry and farming sectors of NSW. He guided the Society through its first three critical years where membership increased from 20 in 1985 to 650 in 1988.

Peter runs a grazing property near Blayney producing merino wool and poll shorthorn cattle. He is a Director of Dalgety Australia and in his prime represented Australia in shooting at the 1956 Olympics and at the World Shooting Champion-ships in Moscow in 1958. He served in the Royal Australian Navy from 1940 to 1946 rising to Lieutenant Commander and latterly, as honorary aide-de-camp to the Governor of NSW.

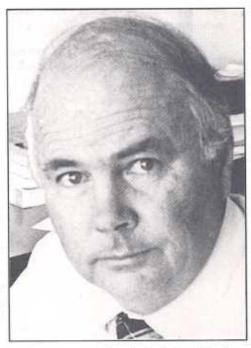


All members of the management committee join with members of the Society in thanking Peter for his work, enthusiasm and encouragement in fostering the development of the Society from a small beginning to the present membership of 1200.

Malcolm Campbell

In 1995 Malcolm Campbell, a Principal Research Scientist with NSW Agriculture, was elected a life member of the Grassland Society of NSW.

Over more than forty years of research Malcolm has made many valued contributions to techniques of pasture establishment and weed management. His research into the establishment of pastures using aerial techniques has greatly expanded the area of pastures in the tablelands and semi-arid north west of the state. For aerial sowing to be successful, it was necessary to understand the processes involved in surface germination and factors that could reduce germination and establishment. Malcolm's work on radicale growth and entry explained why some species failed to establish when aerially sown, while his study of seed-harvesting ants led to the development of treatments to protect seed without affecting germination. His research into the time of sowing, and the preparations required to control competition have provided much of the underlying principles for aerial sowing in temperate Australia, Malcolm has also successfully investigated the use of biological agents to control weeds in pastures such as goats to control Illyrian thistle and scale insects to control sifton bush. Malcolm has also added to our ecological understanding of St. John's wort, sifton bush and poa tussock and serrated tussock and has devised control plans for some of these.



For this life-time of research, Malcolm has received may public awards including: the Royal Agricultural Society of NSW Metal (1988); the Farrer Medal (1989); and a Public Service Medal in the 1990 Queen's Honours List.

In addition, Malcolm has been the Honorary Secretary for the Grassland Society since its formation in 1985. He has been a dynamo in this role. For more than a decade, Malcolm has been making sure that meetings are scheduled, keeping the minutes, ensuring that all the correspondence is answered, and making sure that the membership list is current. This role has taken up a considerable amount of time which Malcolm has willing given to ensure that the Society provides good service to its members and ensure that our State's grasslands are protected and developed.