Land, Water & Wool

Project Guide

LandWater&Wool
Shaping the future
Australian Government
Land & Water Australia
another innovation

LandWater&Wool
Shaping the future
Australian Government
Land & Water Australia
another innovation
australian wool
limited

Land, Water & Wool Project Guide

Published by: Land & Water Australia

Postal address: GPO Box 2182
CANBERRA ACT 2601

Office location: Phoenix Building
86 Northbourne Ave
BRADDON ACT

Telephone: 02 6263 6000

Facsimile: 02 6263 6099

E-mail: LandandWaterAustralia@lwa.gov.au

Internet: www.landwaterwool.gov.au

Product code: PK050843

Editorial Coordination by Currie Communications, Melbourne
Designed and typeset by Campbell Design Group, Melbourne
Printed by Doran Printing, Melbourne
April 2005

Land Water & Wool is a research partnership between Australian Wool Innovation Limited and Land & Water Australia.

Welcome

LandWater & Wool
Shaping the future

Australian Government
Land & Water Australia

another australian wool innovation limited

As one of the country's largest land-use enterprises and adapted to a wide spectrum of environmental conditions, our wool industry has a unique role in the management of our land and water resources.

The world's largest suppliers of apparel wool, Australia's 40,000 sheep and wool producers currently manage nearly 100 million sheep across 85 million hectares of the landscape, from the high rainfall areas on the coastal fringe to the medium rainfall wheat-sheep belt and inland to the saltbush and mulga lands of the pastoral zone.

Across this vast area, the industry faces many environmental challenges – including dryland salinity, water quality and managing native vegetation – all within a variable climate and the desire to balance production with good environmental outcomes.

Land, Water & Wool is the wool industry's largest-ever collaborative research investment in sustaining the natural resource base and aims to overcome the major challenge of access to information about sustainable wool production that is relevant, practical and in a familiar language.

Land, Water & Wool recognises that to ensure our wool industry remains healthy, the resource base on which it relies must be managed in a sustainable manner.

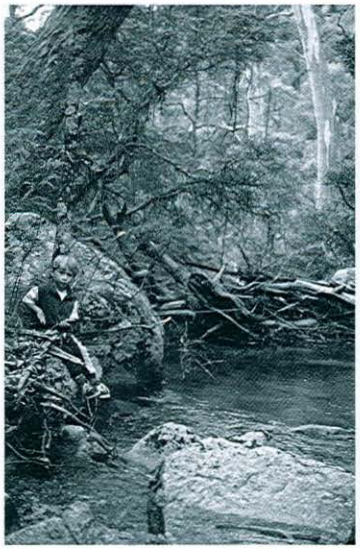
As you will see from the Land, Water & Wool Project Guide, our research teams are working closely with woolgrowers to tackle the big environmental issues, with projects currently underway with a range of woolgrower groups on more than 230 properties across Australia.

Woolgrowers will ultimately reap the rewards from the research investment by striving toward greater balance in their production systems – as well as a higher capacity to achieve healthier rivers, richer native bush and grasslands, more sophisticated utilisation of seasonal risk assessment and new confidence in productively managing saline lands.

Land, Water & Wool offers exciting opportunities that will shape the future of natural resource management for the Australian wool industry. On a broader scale, the program has the potential to position the nation's wool industry as more sustainable and competitive in the global marketplace, providing the connection between science and practice to influence change.

I encourage you to contact the people listed throughout this Guide to learn more about our project portfolio, and the benefits available to your business from our research outcomes.

Mike Wagg
Program Manager
Land, Water & Wool



Contents

LandWater & Wool
Shaping the future
Australian Government
Land & Water Australia
another innovation

It is widely accepted by the wool industry that natural resource management results in profitability, productivity and sustainability gains.* Working with woolgrowers to develop viable, practical and beneficial systems and solutions for managing natural resources on their farms is a primary aim of Land, Water & Wool.

Land, Water & Wool is the most comprehensive natural resource management research and development program ever undertaken for the Australian wool industry. It is a five-year $60 million collaboration between the wool industry's peak research and development body, Australian Wool Innovation Limited, and the nation's premier broker of natural resource management research and development, Land & Water Australia.

*Land, Water & Wool Best Practice Survey 2003

Our investment approach

Land, Water & Wool has seven core sub-programs:

- Sustainable Grazing on Saline Lands (SGSL)
- Native Vegetation and Biodiversity
- Managing Pastoral Country
- Future Woolscapes
- Benchmarking
- Rivers and Water Quality
- Managing Climate Variability

Grower networks are a critical component of the Land, Water & Wool approach to practical research and development; over 1300 woolgrowers and their families are directly involved in the initiative with a further 6000 growers receiving information regarding sustainability of the land and water resources that underpin their businesses. Many thousands more are indirectly receiving information relating to research outcomes, grower involvement and stories of success.

Land, Water & Wool researchers are working closely with growers to develop production guides, technical manuals, detailed case studies and new science-based information and advisory products for long-term, sustainable management of wool production on-farm. The comprehensive R&D driven initiative is supported by a unique communication and delivery program aimed at integrating improved natural resource management into the day-to-day activities of woolgrowers as well as raising the profile of profitable, productive management options for woolgrowers, and the environmental credentials of Australia's dynamic wool industry.

LandWater & Wool
Shaping the future
Australian Government
Land & Water Australia
another innovation

How to use this guide

The Land, Water & Wool Project Guide offers a detailed overview of the Land, Water & Wool research portfolio. It is divided into eight sections, representing the seven sub programs with an additional section at the end devoted to Further Information.

Using the road-map on page 8 – and through colour-coding of sections – readers can quickly find their area of interest and determine the linkages with other core components of the program as well as linkages to other research initiatives and information resources.

This Project Guide documents project details such as the research code and project leader, offers an overview of the research to date and provides details on where to go to find additional related collateral. For further details on specific projects, you are encouraged to contact the project leader directly, or visit our website www.landwaterwool.gov.au

Feedback

Would you like to regularly receive information from Land, Water & Wool?

Simply complete and return the feedback form in the Further Information section of this Project Guide to join our mailing list to regularly access program updates, publications and other information resources.

Roadmap

A visual aid to this project guide

LandWater & Wool
Shaping the future

Australian Government
Land & Water Australia

another innovation

Section 1: Sustainable Grazing on Saline Lands

National Research Projects
- Profitable and sustainable grazing on saline land in WA
- Optimising the saltland pasture system for practical and profitable use
- Productive and sustainable salt-tolerant pastures for SA
- Productive and sustainable salt-tolerant pastures for Victoria
- Water soil and salt movement from sustainable salt-tolerant pastures

Producer Network Projects
- WA
- SA
- Vic & Tas
- NSW

Section 2: Rivers and Water Quality

National Research Projects
- Managing gully erosion in the Southern NSW Tablelands to improve water quality and maintain productive wool pastures
- Sustainable sheep grazing systems for riparian landscapes
- Optimising wool production and profitability in the Mid-North riparian areas

Section 3: Native Vegetation and Biodiversity

National Research Projects
- Profitable, biodiverse wool production systems
- Biodiversity conservation integrated into sustainable grazing systems
- Farm businesses wool production and biodiversity
- Managing native pastures in South Australia for improved animal production and biodiversity
- Integrating paddock and catchment planning: a woolgrower driven approach to sustainable landscape management

Section 4: Managing Climate Variability

National Research Projects
- Improved seasonal forecasts for Wool producers in Western NSW
- Improved seasonal forecasts for Wool producers in Western Zone
- Improved seasonal forecasts for Wool producers in the SA Pastoral Zone
- Improved seasonal forecasts for Wool producers in the WA Southern Pastoral Zone
- Improved seasonal forecasts for Wool producers in Australia's Pastoral Zone

Section 5: Managing Pastoral Country

National Research Projects
- Informing the decisions of pastoral woolgrowers for country and profit
- Wool producers with remote control: new tools for whole of property management
- Delivering a land condition framework for grazing land management education
- Stocking rate decision tools for rangeland pastoralists
- Mitchell grass death in Queensland: extent, economic impact and potential for recovery

Section 6: Future Woolscapes

National Research Projects
- The potential impact of climate change on woolgrowing in 2029
- Towards a profitable and sustainable Australian grains industry – pointers to a future woolscape
- Social pressures likely to reshape Australia's woolgrowing industry over the next 25 years
- Land and animal management – 2029
- Competitor trends in 2029
- Project 'Narelle' – markets and consumer preferences to 2029
- Project 'Dolly' – impacts of the new technologies
- The potential impact of biotechnology on the Australian sheep industry in 2029
- Accelerated growth of food exports from Australia
- Will woolgrowing be a viable business in 2029?

Section 7: Benchmarking

Section 8: Further Information

Sustainable Grazing on Saline Lands

Sustainable Grazing on Saline Lands (SGSL)

Dryland salinity is recognised as one of the major risks to agriculture and the natural environment in the high to medium rainfall zones of Australia. Forty-one per cent of the nation's woolgrowers indicate they already have land affected by dryland salinity* and it is estimated that many other landscapes used for wool production are under increased risk.

Grazing is one of the few activities that can make productive and profitable use of saline land, and also reduce the negative impacts on the environment, and on property owners and managers. The SGSL sub-program is helping woolgrowers better understand and manage their saline land through a range of activities.

These SGSL activities and projects are achieving:

1. Improved production and profit from grazing saline land;
2. Better environmental outcomes from saline land; and
3. More pride for producers who are proactively changing their management systems to tackle saline land on their properties.

SGSL is the largest of the seven sub-programs in Land Water & Wool, managing $15.3 million in research and capacity building over five years. SGSL receives additional financial and in-kind support from Meat & Livestock Australia, the Cooperative Research Centre for Plant-based Management of Dryland Salinity, CSIRO and State agencies in Western Australia, South Australia, Victoria, Tasmania and New South Wales.

Alongside the five national research projects, SGSL also uniquely supports 120 local producer network demonstration sites in partnership with woolgrower groups across WA, SA, Victoria, Tasmania and NSW.

Sub-Program Coordinator
Dr Warren Mason
T 02 6363 1249
E warren.mason@lwa.gov.au

*Land, Water & Wool Best Practice Survey 2003

Land, Water & Wool Sustainable Grazing on Saline Lands sub-program partners include:

SGSL National Research Projects

SGSL has five national research projects across southern Australia. These projects are developing strong scientific evidence regarding ways to establish and maintain productive and sustainable saltland pasture systems.

PROFITABLE AND SUSTAINABLE GRAZING ON SALINE LAND IN WESTERN AUSTRALIA

Project: UWA29 Location: Western Australia

Project Leader

Dr Hayley Norman
CSIRO Livestock Industries
T 08 9333 6671
E Hayley.Norman@csiro.au

Overview

The focus of *Profitable and sustainable grazing on saline land in WA* is to evaluate the gains in animal production, water management and biodiversity in saltbush-based pastures as a result of the introduction of new plant species and better management systems. The sites are located in the WA wheatbelt near Tammin and Yealering.

OPTIMISING THE SALTLAND PASTURE SYSTEM FOR PRACTICAL AND PROFITABLE USE

Project: UWA33 Location: Western Australia and New South Wales

Project Leader

Dr Ed Barrett-Lennard
WA Department of Agriculture
T 08 9368 3411
E egbarrettlennard@agric.wa.gov.au

Overview

Optimising the saltland pasture system for practical and profitable use concentrates on the practical implementation and optimisation of saltbush and understorey systems to provide the most effective inputs into livestock production systems.

Sustainable Grazing
on Saline Lands (SGSL)

The focus is on whole farming systems, aiming to lower water tables and boost production from a wasted resource while at the same time increasing profitability. Several sites are located in the WA wheatbelt, with a further site at Grong Grong in southern NSW.

PRODUCTIVE AND SUSTAINABLE SALT-TOLERANT PASTURES FOR SOUTH AUSTRALIA

Project: UWA30 Location: South Australia

Project Leader

Dr Nick Edwards
South Australian Research and Development Institute
T 08 8762 9184
E edwards.nick@saugov.sa.gov.au

Overview

Saltland pastures in the Upper South East of SA are largely dominated by puccinellia. The project *Productive and sustainable salt-tolerant pastures for South Australia* focuses on improving the productivity of puccinellia and other complementary saltland pastures through grazing management, fertiliser strategies and different species mixtures.

The research sites are located near Mt Charles in the Upper South East. Early evidence is emerging of substantial improvements in the pastures leading to high confidence of animal production benefits.

PRODUCTIVE AND SUSTAINABLE SALT-TOLERANT PASTURES FOR VICTORIA

Project: UWA30 Location: Victoria

Project Leader

Dr Malcolm McCaskill
Victorian Department of Primary Industries
T 03 5573 0957
E malcolm.mccaskill@dpi.vic.gov.au

Overview

Closely aligned with the South Australian project, *Productive and sustainable salt-tolerant pastures for Victoria* focuses on improving the productivity of saltland pastures. The primary focus is on the high rainfall, tall wheat grass-based pastures used on moderately saline land in Victoria with additional effort directed towards legume improvement, weed management and different pasture species options. The site is located at Dunkeld in the Western District of Victoria.

The first season's results have been very promising – despite it being one of the wettest winters in about 10 years, some clovers have shown production of almost 10 tonnes of dry matter per hectare, which is equivalent to district standards from pasture on non-saline ground.

WATER SOIL AND SALT MOVEMENT FROM SUSTAINABLE SALT-TOLERANT PASTURES

Project: UWA32 Location: New South Wales

Project Leader

Dr Warren King
NSW Agriculture
T 02 6391 3824
E warren.king@agric.nsw.gov.au

Overview

The focus of the project *Water, soil and salt movement from sustainable salt-tolerant pastures* is on the movement of water soil, salt and nutrients from saline discharge sites to waterways, and the impact on these flows by productive saltland pastures. The main research sites are located near Young in the Upper Lachlan catchment and Manildra in the Macquarie catchment.

Sustainable Grazing
on Saline Lands (SGSL)

Producer Network Projects

In addition to its National Research Projects, SGSL is encouraging and assisting producer groups across Australia to undertake their own, local research.

SGSL is currently supporting 120 local producer projects nationally over the five years of the program after which time the results of the projects will be collected and made available to woolgrowers throughout the country.

WA GROWER NETWORK PROJECT

The WA grower network is chaired by Fionnuala Hannon and is supporting nearly 70 grower sites.

For further information relating to grower network projects in WA please contact:

Justin Hardy
Department of Agriculture WA
T 08 9892 8408
E jhardy@agric.wa.gov.au

PROJECT TITLE	GROUP NAME	LOCATION
Establishment of salt-tolerant species	Mingenew Irwin Group	Mingenew
Maximising perennial grass production on L2 saline land	Liebe Group	Wubin
Integrating perennial and annual pasture research into a saltland grazing system	Fitzgerald Biosphere Group	Fitzgerald
Raised bed establishment of pastures and crops on saline land	Evergreen Group	Badgingarra
Extend balansa persistence through sustainable grazing	West Arthur LCDC	Darkan
Water use of lucerne and saltbush	Tin Dog Creek Catchment Group	Dowerin
Production and pasture quality of NyPa Forage™ grass *Distichlis spicata*	Facey Group	Wickepin
Increase productivity and reduce water tables on saline land	Moora-Miling Pasture Improvement Group (2 sites)	Moora
Finishing prime lambs in autumn on saltland	Yerecoin-Piawaning LCDC	Yerecoin
Saltland pasture research in Mukinbudin	Ningham Farm Focus Group (2 sites)	Mukinbudin

Sustainable Grazing on Saline Lands (SGSL)

PROJECT TITLE	GROUP NAME	LOCATION
Integrating saline pastures into future farming systems	WANTFA Farming Systems	Meckering
Sub-tropical grasses on South Coast sandplain	Jerdacuttup Grazing Group	Jerdacuttup
Establishment and plant persistence in a saline affected area	Ballidu Woolpro Group	Ballidu
Establishing salt-tolerant grasses on salt scald	West Gillingarra Koojan LCDC	Gillingarra
Trial and demonstration of saltland pastures	Yilgarn LCDC	Southern Cross
Establishing perennial pastures on saline land	Yeelanna Catchment Group	Trayning
Pasture establishment and management on saline soils	Gorge Rock Salties (3 sites)	Corrigin
Do cattle have a place in the wheatbelt?	South Trayning Catchment Group	Trayning
Establishing perennial pastures on saline land	Morawa Farm Improvement Group	Morawa
Regrowth and graze saline land	Koorda LCDC	Koorda
Environmental changes to revegetated saline land	Hamilla Hill Catchment Group	Cranbrook
Effects of *Acacia saligna* on mildly saline land	Hamilla Hill Catchment Group	Cranbrook
Establishment of rotational grazing systems on saltland	Tambellup Noongar Land Association	Tambellup
Productive use of saline land in Forest Hill	Upper Hay Sub-catchment group	Mt Barker
Trial of salt-tolerant pastures	Lake Matilda Sub-catchment group	Mt Barker
Nutritional value of saltland pastures	Range Road Catchment Group	Pingrup
Manipulation of soil ameliorates and ferilisers to optimise production of saline land	Lake Toolbrunup Catchment group (2 sites)	Tambellup
Increasing livestock production using saltbush and supplements	Nairibin Saltland Enhancement Group	Dumbleyung
Phase farming on valley floors	Facey Group	Wickepin
Boosting propagation and productivity of saltbush	South Yoting Catchment Group Inc.	Quairading
Kunjin Woolpro Group	Kunjin Woolpro Group	Corrigin
Dwarlaking to Avon – riverline saltland grazing	Bulyee Catchment Group	Corrigin
Jubuk-Kunjin-Wogerlin Alliance – saltland cereals and grazing	Jubuk-Wogerlin Alliance	Corrigin
Kurrenkutten Lakes sustainable saltland forage and pasture	Kurrenkutten Lakes	Corrigin

Sustainable Grazing on Saline Lands (SGSL)

PROJECT TITLE	GROUP NAME	LOCATION
Bullaring Valley saline clay-flats forage and pastures	Bullaring Valley Flatties	Corrigin
CCCG saltbush productivity on saline land trail	Conallan Creek Catchment Group	Quairading
Linking biodiversity to saline land productivity	Narrogin LCDC/Normans Lake Catchment Group	Narrogin
Profitable grazing whilst alleviating salinity	Morbinning Catchment Group	Morbinning
Continual verses mixed grazing of lucerne	Yerapin Catchment Group	Bruce Rock
Use of spinner drain to control surface waterlogging	East Woop Woop	Boyup Brook
Achieving profitable grazing off saline land through forage shrubs, perennial grasses and balansa clover	Jinkas Hill LCDC	Badgebup
Reduce watertables by increasing saltland production	Cunderdin Hill West Catchment Group	Cunderdin
Pindellup DIY saltland to clover grazing trial	Pindellup Catchment Group	Tambellup
Tie Line salt grazing trial	Murdong Pools	Broomehill
Upper Slab Hut holistic grazing	Upper Slab Hut Catchment Group	Tambellup
Incorporating raised beds and perennial pastures on saline area	Camel Lake Sub-Catchment Group	Tambellup
Evaluate perennial pastures for saline land in West Cranbrook (600 mm)	Kojonup LCDC – Ryans Brook Catchment	Kojonup/Cranbrook
Stocking rate trial on puccinellia and tall wheat grass and sub tropicals (grasses)	Katanning Creek Catchment	Katanning
Improvement of sodic subsoil for pasture	Beaufort Flats (Sodic soils project)	Woodaniling
Sustainable perennial pastures in the Mullewa Shire	Woogoondy Farm Improvement group	Mullewa
Perennial pasture species and production trial	Beaufort Flats (perennials)	Woodaniling
Establish grazing on salt scalds using cambered beds	Gorge Rock Salties	Corrigin
Rehabilitation of pastures on degraded flats	Beaufort Flats	Woodaniling
Establishment of perennial salt-tolerant species in low rainfall areas	Ravensthorpe Agricultural Initiative Network	Ravensthorpe
Saltbush density effects on understorey growth	South Yarding Catchment Group	Bruce Rock
Evaluate saline pasture production in Kojonup	Kojonup LCDC – Lower 54 Creek Catchment	Kojonup

PROJECT TITLE	GROUP NAME	LOCATION
Establishing perennials to prevent waterlogging and salinity	Koojan-Gillingarra LCDC	Gillingarra
Amelioration of saline lands with feed mill by-products (oat husks)	Wagin LCDC	Wagin
Linking biodiversity and raised beds on saline land	Solomon Yulgan Catchment Group	Bolgart
Compare effects of raised bed techniques	Tambellup LCDC	Tambellup
Extending saline land green feed production	Narrogin LCDC	Narrogin
Comparing the effects of liming on saltland pastures	Hommajelly Creek Catchment Group	Quairading
Annual and perennial productivity pasture species for Wandering	Wandering Productivity Group	Wandering
Reclaiming saline valley floor in 300 – 350 mm rainfall zone	Woodabulling Catchment Group	Yealering

SA GROWER NETWORK PROJECT

The SA grower network committee is chaired by Bruce Munday and is supporting 15 grower sites.

For further information relating to Producer Network projects in SA please contact:

Jock McFarlane
Rural Solutions SA
T 08 8762 9100
E mcfarlane.jock@saugov.sa.gov.au

PROJECT TITLE	GROUP NAME	LOCATION
Weed management to improve production from grazing puccinellia	Coorong and District Soil Conservation Board Bunbury, Upper South East	Coorong
Grazing management of tall wheatgrass and fertilizer responses in saltland grasses	Kingston Salinity Group Kingston, Upper South East	Kingston
Comparison of pasture production and feed quality from puccinellia and tall wheatgrass with different applications of conventional and alternative fertilisers	Mt Charles Farm ManagementGroup Mt Charles, Upper South East	Mt Charles
The nutritional requirements for livestock production grazing saltland pastures	Saltland PPP Group Mt Charles, Upper South East	Mt Charles
Rotational grazing and efficient fertilizing of puccinellia and tall wheatgrass to optimise productivity	Kangaroo Island Soil Conservation Board Murray's Lagoon, Kangaroo Island	Kangaroo Island

Sustainable Grazing on Saline Lands (SGSL)

PROJECT TITLE	GROUP NAME	LOCATION
The practical application of raised beds in grazing systems	Kangaroo Island Soil Conservation Board Kangaroo Island	Kangaroo Island
Establishment techniques for saltbush, puccinellia and balansa clover	Tumby Bay Agricultural Bureau Tumby Bay, Eyre Peninsula	Tumby Bay
Establishment and evaluation of pasture between narrow spaced rows of existing stands of saltbush	Wadikee Agricultural Bureau Kimba, Eyre Peninsula	Kimba
Modifying existing saltbush stands to establish inter-row pasture species	Waddikee/Balumbah Catchment Salinity Management Group Waddikee, Eyre Peninsula	Waddikee
Establishment and evaluation of pasture between wide spaced rows of existing stands of saltbush	Northern Stokes Landcare Group Ungarra, Eyre Peninsula	Ungarra
Establishment and management of saltbush and pasture on a jumbled land system	Kapinnie Landcare Group Kapinnie, Eyre Peninsula	Kapinnie
Improved pasture and livestock production on saline land	Southern Yorke Peninsula Alkaline Soils Group Minlaton, Yorke Peninsula	Minlaton
Making the most of strawberry clover on saltland – improving pasture productivity on saline seepage areas	Tungkillo Landcare Group Mount Lofty Ranges	Tungkillo
Economic analysis of established grazing systems on saline land	Hummocks Soil Conservation Board Clare	Clare
The economics of renovating samphire paddocks with puccinellia pasture	Tumby Bay Agricultural Bureau Eyre Peninsula	Tumby Bay

VICTORIA AND TASMANIA GROWER NETWORK PROJECT

The Victorian grower network committee is chaired by Christine Forster and is supporting 16 grower sites.

For further information relating to Producer Network projects in Victoria and Tasmania please contact:

Trevor Pollard
Department of Primary Industries Victoria
T 03 5573 0907
E trevor.pollard@dpi.vic.gov.au

PROJECT TITLE	GROUP NAME	LOCATION
Quantifying salinity discharge treatment impacts in the WY Catchment – Pittong site.	Woady Yalloak Catchment Group Inc. Group 1	Pittong/ Ballarat
'Spiny Rush' control demonstration site – Pittong site	Woady Yalloak Catchment Group Inc. Group 1	Pittong/ Ballarat
Quantifying salinity discharge treatment impacts in the WY Catchment – Mt. Mercer site	Woady Yalloak Catchment Group Inc. Group 3	Mt Mercer/ Ballarat
Comparison of lucerne and salt-tolerant pasture species on saline land	Jallukar Landcare Group	Ararat
Saline pasture systems for profit: cell grazing vs set stocking.	ARMAG Group	Kerang
Bengworden salinity pasture trial	Bengworden Landcare Group	Barinsdale
Evaluating pasture species suitable for saline land in the Whiteheads Creek Catchment	Whiteheads Creek	Seymour
Investigating environmental and agricultural benefits of grazing salt tolerant vegetation.	Murdeduke	Winchelsea
Agronomic/grazing potential/ water table benefits of growing saltbush on saline land	Bairnsdale Bestwool Group	Barinsdale
Implementing saline pasture species results from test-plots to grazing trials	Yarram Salinity Group	Yarram
Assessing productive options for saline land in South Eastern Tasmania	Little Swanport Catchment Management Implementation Committee	Little Swanport, Tas
Wetland restoration and rotational grazing in high salinity area	Northeast Coast Landcare Group	Bridport, Tas
Cross bred sheep weight gains on saline tolerant pasture and fodder species	Upper Derwent Valley Landcare Network	Hamilton, Tas
Saltbush vs normal grazing productivity differences in sheep and goats	Hindmarsh Landcare Network	Hindmarsh
Investigation of tall wheat grass management techniques on saline land and collation of objective data	Hamilton Landcare Group	Hamilton
Raising salt bush productivity on saline sites	Sheep Pen Creek Landcare Group	Caniambo

Sustainable Grazing
on Saline Lands (SGSL)

NSW GROWER NETWORK PROJECT

The NSW grower network committee is chaired by John Powell and is supporting 25 grower sites. These are strongly focussed in central NSW (where most salinity expression is evident), but are distributed from Inverell in the north to Albury in the south. The sites are predominantly investigating the suite of saltland options available for the rehabilitation of saline land, and the associated establishment and management questions.

For further information relating to Producer Network projects in NSW please contact:

Luke Beange
NSW Department of Primary Industries
T 02 6881 1294
E luke.beange@agric.nsw.gov.au

PROJECT TITLE	GROUP NAME	LOCATION
Fescue trial & rehabilitation	Arthurville	Wellington
Improve grazing efficiencies on sodic saline country	Bellata Sustainable Farming Group	Bellata
Licking salty wounds	Boorowa Regional Catchment Committee	Boorowa
Identify productive persistent salt tolerant pastures	Cranbury	Cudal
CWNSW SFN species trials & coordination (seven sites)	Central West NSW Sustainable Farmers Network	Central West NSW
Economic benefits of grazing management on severe saline lands	Derriwong-Ootha	Condobolin
Options for saline land – saltbush/pasture establishment	Grong Grong	Narrandera
Deep rooted perennial herbs for salinity control	Gundagai Group	Gundagai
Managing salt affected land for increased productivity	Gundaroo	Yass
Saline site establishment	Mid Macquarie	Wellington
Revegetating extremely salty scalds	Narangarie Valley	Dunedoo
Pasture cropping and its use in reducing salinity	Tallawang	Gulgong
Evaluation of vegetatively-established native grasses	West Hume	Albury
Can grazing management rehabilitate a saline site?	Bannockburn	Inverell

Sustainable Grazing on Saline Lands (SGSL)

PROJECT TITLE	GROUP NAME	LOCATION
Sustainable grazing – addressing dryland salinity	Keajura	Wagga
Salt pasture systems for Fullerton	Fullerton	Crookwell
Alley farming and grazing on saline soil	Coomoo Coomoo	Spring Ridge, Liverpool Plains
Combating salinity with best management tall wheat grass	Manilla	Tamworth
Can grazing management alone reduce salinity on Inverell basalts?	Nullamanna	Inverell

FURTHER INFORMATION

SGSL has a number of emerging information products and guides containing further information on dryland salinity, the program and its projects which are either free or available for purchase.

These include:

- **Saltland Pastures in Australia: A Practical Guide** (Product number PR 030 563)
- **Productive Solutions to Salinity Management** (Product number PX 030 508)
- **SGSL Projects and Products** (Product number PF 030 608)
- **Insights** – Case studies on how farmers are successfully managing saltland for profit and sustainability (Product Code: PK 040 658)
- **The Sustainable Grazing Lands Producer Network in WA** – Growers and Researchers working together to turn the tide (Product number PF 040 801)
- SGSL section of the Land, Water & Wool website: www.landwaterwool.gov.au

To order our publications, contact CanPrint, freecall 1800 776 616 or use the order form in the Further Information section on page 66.

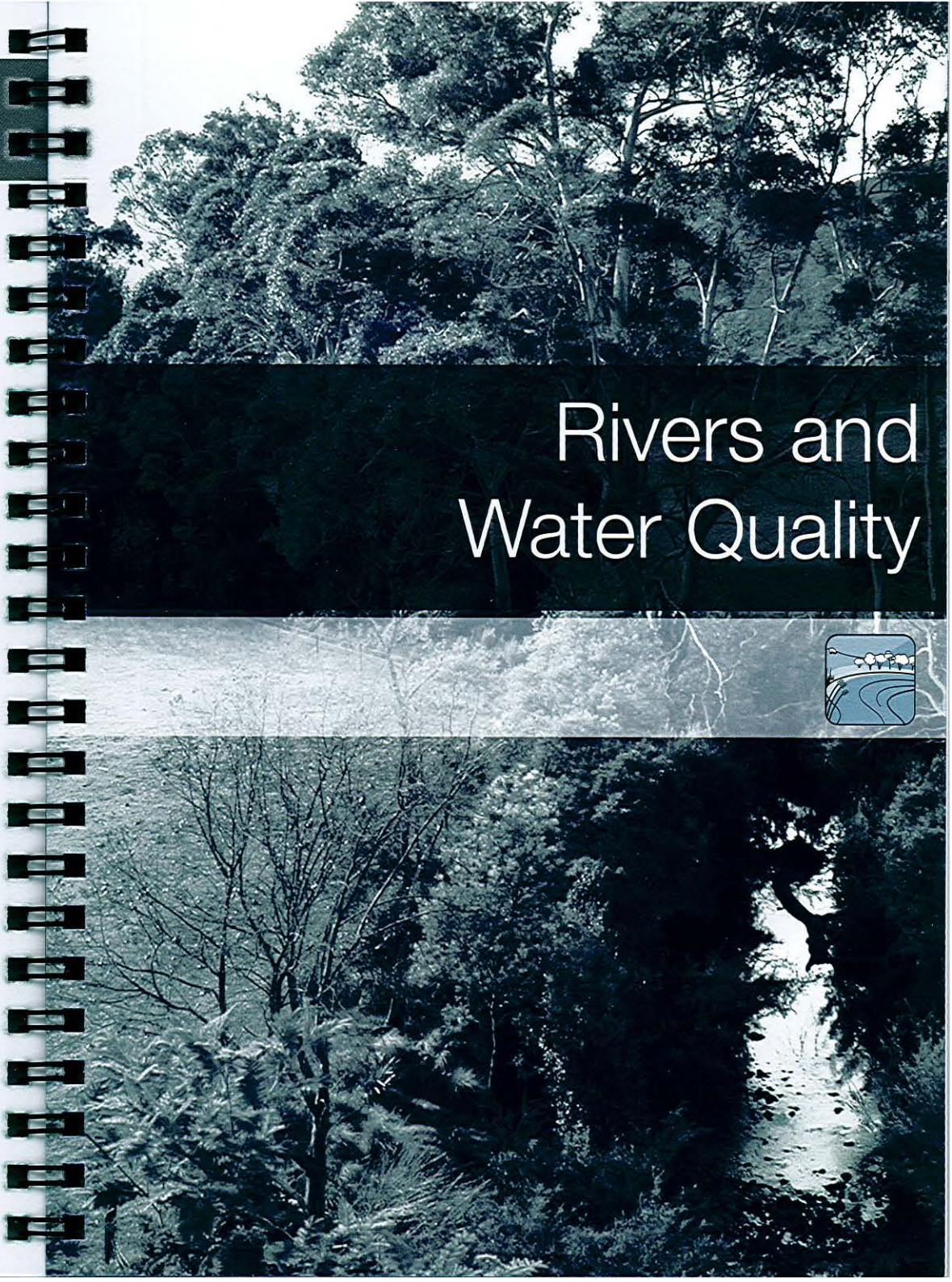
Other resources

A two-day EDGEnetwork™ course *Making a Profit from Saline Land* has also been developed by Meat & Livestock Australia with input from SGSL. For further information regarding the course, visit the website www.edgenetwork.com.au

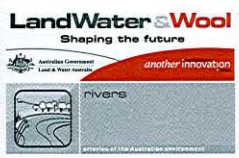
SGSL Producer Network and National Research Site information is regularly published in the salinity research and management journals *Focus on Salt* and *SALT Magazine*. To subscribe, visit the CRC for Plant-based Management of Dryland Salinity website www.crcsalinity.com

On-line links:

CRC for Plant-based Management of Dryland Salinity	www.crcsalinity.com
Australia's National Dryland Salinity Program	www.ndsp.gov.au
CSIRO Livestock Industries	www.csiro.au/livestock



Rivers and Water Quality



Healthy rivers, creeks and streams are the arteries of the Australian environment. They provide the water to sustain many different plant and animal communities, as well as being the lifeblood of our agricultural enterprises and rural communities. Without healthy water bodies, Australia does not have a sustainable future.

With 78 per cent of Australian woolgrowers having properties that adjoin at least one waterway*, managing these water systems and keeping them healthy is a crucial part of running a profitable wool producing enterprise.

Land, Water & Wool's Rivers and Water Quality sub-program is helping woolgrowers find profitable, productive management options for land around rivers and streams. To do this, the program is studying issues such as gully and streambank erosion, water quality, weed management, and riparian zone management within a total grazing system.

Rivers and Water Quality is managing $1.4 million in research over five years. There are currently four projects in the sub-program. Three of these are working with a core group of eight to 10 woolgrowing families. A further 40 growers in each region are expected to participate through field days and workshops that demonstrate best practice for combining wool production with good environmental management. The fourth project in the sub-program is national in scope and will develop Land, Water & Wool River Guides for woolgrowers in high rainfall and sheep wheat zones of Southern Australia. Results of the projects will reach the wider wool industry through rural newspapers, industry-based publications and events and web information.

Sub-Program Contact
Dr Siwan Lovett
T 02 6247 7997
E siwan.lovett@lwa.gov.au

*Land, Water & Wool Best Practice Survey 2003

Land, Water & Wool Rivers and Water Quality sub-program partners include:

CSIRO LAND and WATER

river murray catchment water management board

Tasmania

Rivers and Water Quality National Research Sites

Rivers and Water Quality has four projects comprising three national research sites in NSW, Tasmania and SA and one national project.

MANAGING GULLY EROSION IN THE SOUTHERN NEW SOUTH WALES TABLELANDS TO IMPROVE WATER QUALITY AND MAINTAIN PRODUCTIVE WOOL PASTURES

Project: CLW56 Location: New South Wales

Local Project Coordinator

Fleur Flanery
T 02 6263 6020
E fleur.flanery@lwa.gov.au

Overview

Gully erosion is a major issue for woolgrowers in many Tableland areas. If left unattended, it can lead to large areas of valuable soil and nutrients being washed away, choking streams and rivers with sediment. Gully erosion can also make stock management and pasture utilisation difficult, reducing whole farm productivity.

The objective of this project is to measure the impact of gully erosion on wool enterprises, trial different management options, and decide on the most appropriate and cost effective ways to treat it. The first stage of the project involves monitoring selected gullies in the Murrumbidgee Catchment to determine how much sediment and nutrients the erosion is delivering to streams on-farm. As part of the project, Land, Water & Wool has also installed scientific equipment at the main research site at Bookham to monitor the water quality and its turbidity.

The project is trialling and closely monitoring different land management strategies at the research site, which include fencing off, revegetation, limiting stock access, and the possibility of building a dam at the top of the main gully. This work is acting as a catalyst to demonstrate to woolgrowers the costs of gully erosion, the practical methods to prevent, stabilise or rehabilitate gullying; and the benefits to production and the environment that can be achieved.

Rivers and Water Quality

SUSTAINABLE SHEEP GRAZING SYSTEMS FOR RIPARIAN LANDSCAPES

Project: TPI2 Location: Tasmania

Local Project Coordinator

Ms Biz Nicolson
T 03 6384 2165
E bnicolso@tassie.net.au

Overview

Tasmania has a reputation for producing some of the finest and cleanest wool in the world. Helping woolgrowers determine the best ways of integrating good riparian management into sustainable grazing systems is the focus of this project. It is investigating the management of riparian pastures and native vegetation, and how different land use practices affect the health of rivers. The study is linked with the LWW Native Vegetation and Biodiversity project Integrating Biodiversity with Sustainable Grazing Systems that is also located in the Macquarie Catchment.

This project is monitoring the upper Macquarie River to identify the impacts of stock and how woolgrowers can improve management of their riverbanks. Particular consideration is being given to weeds, a significant problem along rivers in wool growing areas, and various aspects of weed control. Careful grazing and replanting is being used to allow native species to regenerate and improve the stability of streambanks, reduce erosion, provide shade and shelter for stock, and improve in-stream health.

OPTIMISING WOOL PRODUCTION AND PROFITABILITY IN THE MID-NORTH RIPARIAN AREAS

Project: MCB1 Location: South Australia

Local Project Coordinator

Kylie Nicholls
T 08 8842 3275
E fullbottlemedia@rbe.net.au

Overview

Rivers and their adjacent riparian areas in much of the Mid-North of SA were once prime grazing country, typified by native grasslands and fresh water. These areas are now showing increasing signs of stress and degradation, including rising river salinity and reduced pasture productivity.

The aim of this project is to assist wool producers in the Mid-North region of SA to determine the most cost-effective way to manage riparian frontages, optimising profit and production, while also improving the condition of pastures and native vegetation, channel banks, and the creek environment.

This project is measuring the effectiveness of alternative stock management and other rehabilitation methods that aim to improve pasture and wool quality from riparian areas. It is quantifying as far as possible the costs and benefits of these methods, and providing practical guidance to wool producers on how to implement them to improve both production and environmental outcomes.

Rivers and Water Quality

DEVELOPMENT OF LAND, WATER & WOOL RIVER GUIDES

Project: MCG4 Location: High rainfall and sheep wheat zones of Southern Australia

Project Leader

Dr Phil Price
T 02 6251 4669
E mackellarcg@bigpond.com.au

This project will result in two LWW River guides – one for woolgrowers in the high rainfall zone and the other for those in the sheep wheat zone. They are being developed as a resource to assist the wool industry and woolgrowers improve the productive use and environmental management of creeks, streams and associated riparian lands.

The first step to developing the guides was to work with woolgrowers to identify the management issues they considered most important in relation to water courses and riparian areas. Research findings from a 12-year national research program (supported through Land & Water Australia) investigating how riparian areas function were also taken into consideration as part of this first step. The information is now being brought together in the guides and being practically applied through the Land Water & Wool Rivers and Water Quality regional projects.

For each of the issues identified by woolgrowers, general scientific principles for achieving the relevant management objective will be provided. The guides will then list practical steps that can be taken by woolgrowers to implement those principles, as well as giving case studies of woolgrowers who have successfully achieved the management objective. An easy-to-use assessment tool will also be included in the guides so that woolgrowers can work out the condition of their riparian area.

By using these guides, individual woolgrowers will be able to prioritise management issues and objectives of importance to them, and apply them in a way that matches their property, enterprise and the resources available to gain both productive and environmental outcomes on-farm.

FURTHER INFORMATION

Rivers and Water Quality is developing new information products containing further information on the program and its projects.

These include:

- **Tasmanian wool – natural landscapes, natural fibres** (Product number PF 030 527)
- **Preventing erosion to maximise wool production** (Product number PF 030 530)
- **Improving water quality to benefit wool production** (Product number PF 030 529)
- **A series of issues-based postcards developed by the Tasmanian project**
- **Grassland Matters – newsletter** (Contact Kylie Nicholls ph: 08 8842 3275)
- Rivers and Water Quality section of the Land, Water & Wool website: www.landwaterwool.gov.au

To order our publications, contact CanPrint, freecall 1800 776 616 or use the order form in the Further Information section on page 66.

Other resources

Land & Water Australia Rivers Program:
www.rivers.gov.au

Native Vegetation and Biodiversity

Managing Native Vegetation and Biodiversity

LandWater&Wool
Shaping the future
another innovation
native vegetation and biodiversity

With the introduction of native vegetation and biodiversity targets both nationally and across many catchments, and increasing community concern and expectations about environmental management, there is now even greater awareness about the importance of natural resource management (NRM) within the wool industry. Encouragingly more than 55 percent of woolgrowers who have native vegetation on their farm have already implemented NRM practices*.

The *Native Vegetation and Biodiversity* Sub-program of Land, Water & Wool is exploring ways of managing landscapes so as to maintain enterprise profitability while meeting natural resource management objectives. It is achieving this by working closely with woolgrowers, drawing on the research already undertaken through the Native Vegetation R&D Program managed by Land & Water Australia and undertaking new research on the links between wool production and biodiversity.

The primary objective of the *Native Vegetation and Biodiversity* Sub-program is to develop, test and promote options for integrating wool production and the protection, management and restoration of native vegetation and its associated biodiversity.

Native Vegetation and Biodiversity, which is managing more than $2.3 million of research and in kind contributions from partners over five years, has five regional projects in the high rainfall and sheep-cereal zones. Within these projects, more than 70 families with commercial woolgrowing enterprises are now directly involved with research projects on their properties, while a further 2750 woolgrowers are indirectly involved.

In order to deliver the research results to a larger group of woolgrowers, projects are working closely with wool initiatives such as 8x5 in Tasmania and BestWool 2010 in Victoria.

Sub-Program Contact
Prof. Jann Williams
T 03 5444 0248
E jann.williams@lwa.gov.au

*Land, Water & Wool Best Practice Survey 2003

Land, Water & Wool Native Vegetation and Biodiversity Sub-program partners include:

Managing Native Vegetation and Biodiversity National Research Sites

Native Vegetation and Biodiversity has five major research sites in the high rainfall and sheep-wheat zones.

PROFITABLE, BIODIVERSE WOOL PRODUCTIONS SYSTEMS

Project: UNE43 Location: New South Wales

Project Leader

Associate Professor Nick Reid
University of New England
T 02 6773 2759
E nrei3@une.edu.au

Overview

A significant number of the world's premium fine woolgrowers operate on New South Wales' Northern Tablelands, which covers 2.5 million hectares and carries two million sheep. Over 1000 woolgrowers operate in the region, with granite, trap and basalt soil types and predominantly summer rainfall.

Profitable, biodiverse wool productions systems focuses on productive management of native vegetation – an increasing priority for the region's woolgrowers. The project aims to develop solutions to natural resource management issues such as native tree dieback, unpalatable invasive weeds, gully erosion, compromised riparian vegetation and water quality, vertebrate pests and a decline in biodiversity, all of which have the potential to impact on farm productivity and profitability.

By documenting and assessing results achieved on the project sites, practical guidelines will be developed for other Tablelands woolgrowers wanting to manage vegetation and its associated biodiversity in a way that is compatible with wool production.

Managing Native Vegetation and Biodiversity

BIODIVERSITY CONSERVATION INTEGRATED INTO SUSTAINABLE GRAZING SYSTEMS

Project: UTA12 Location: Tasmania

Project Leader

Professor Jamie Kirkpatrick
University of Tasmania
T 03 6226 2460
E j.kirkpatrick@utas.edu.au

Overview

The Tasmanian Midlands is well known for producing some of the world's most prestigious wool. Not so well known is the fact that the wool-producing enterprises in the region are substantially based on native vegetation that can be of high conservation significance.

The Tasmanian regional project, *Biodiversity conservation integrated into sustainable grazing systems*, is looking at how woolgrowers currently manage their native vegetation for conservation and production purposes on-farm. This includes working with woolgrowers to conduct grazing trials on native pastures, survey on-farm biodiversity throughout the Midlands region and develop key performance indicators for environmental best practice.

One of the main priorities of the project is to learn about the economic and ecological value of native vegetation from local woolgrowers and research sites.

FARM BUSINESSES, WOOL PRODUCTION AND BIODIVERSITY

Project: DAV39 Location: Victoria

Project Leader

Jim Moll
Senior Agribusiness Analyst,
Department of Sustainability and Environment Victoria
T 03 5761 1619
E jim.moll@dse.vic.gov.au

Overview

A recent survey of 1500 woolgrowers commissioned by Land, Water & Wool, found that more than half of Victoria's woolgrowers have remnant native vegetation on their land. Many Victorian woolgrowers already manage their native pastures

and vegetation to provide shelter and shade for stock, retain ground cover and reduce erosion, and improve the general health of their land.

The Victorian-based *Farm businesses, wool production and biodiversity* project is identifying productive, practical solutions for native vegetation management, incorporating the commercial aspects of wool growing.

The project is focusing on nine commercial wool properties across three regions of central Victoria – Ararat Hills, Maryborough-Lexton and Springhurst. Detailed property reports are being developed that identify production/conservation options, based on farmer's goals over a 10-15 year time frame. A range of management options that can achieve both profitability and biodiversity gains, and are applicable to other farms, have now been identified. Identifying ways to improve the condition of native vegetation on farms is also a focus of this project.

MANAGING NATIVE PASTURES IN SOUTH AUSTRALIA FOR IMPROVED ANIMAL PRODUCTION AND BIODIVERSITY

Project: GRS 1 Location: South Australia

Project Officer

Kylie Nicholls
Native Vegetation and Biodiversity SA Project Officer,
Land, Water & Wool
T 08 8842 3275
E fullbottlemedia@rbe.net.au

Overview

Traditionally, native pastures in the hill areas of the Mid North of South Australia are continuously grazed at the same time each year (usually from the autumn break in May until harvest in December) to fit in with the cropping program. Over time, this has reduced the population of native perennial grasses and produced pastures dominated by undesirable annual grasses such as wild oats and barley grass.

The focus of *Managing native pastures in South Australia for improved animal production and biodiversity* is to help woolgrowers conserve and improve native pasture biodiversity by rotational grazing and to lift profits through increased production. Specifically the research aims to evaluate the effect of grazing management of native pastures on sheep productivity, farm financial returns and ecosystem function of native pastures.

Managing Native Vegetation and Biodiversity

A range of plant and soil measurements are being taken including pasture growth rates, change in native and annual pasture species, species diversity, water use efficiency, water infiltration rates and soil biological activity to provide valuable data to woolgrowers and researchers in relation to the impacts of the new grazing regime.

INTEGRATING PADDOCK AND CATCHMENT PLANNING: A WOOLGROWER DRIVEN APPROACH TO SUSTAINABLE LANDSCAPE MANAGEMENT

Project: USQ5 Location: Queensland

Project Leader

Professor Charlie Zammit
Director, Land Use Research Centre,
University of Southern Queensland
T 07 4631 5577
E zammit@usq.edu.au

Overview

Over the past 10 years the Traprock Association, a proactive group of fine woolgrowers from the high country of south-east Queensland, has established a voluntary quality assurance system for wool production and marketing. The group is now linking wool production to integrated farm management and landscape planning and has detailed property mapping and planning underway to identify biodiversity assets.

Integrating paddock and catchment planning: a woolgrower driven approach to sustainable landscape management is a relative newcomer to the Native Vegetation and Biodiversity Sub-program, having started in April 2004.

The project will follow three phases resulting in: improved woolgrower capacity to assess land use and use of integrated scientific information from property to catchment level; more effective wool industry input into regional planning objectives; and a Toolkit for monitoring and reporting productivity and biodiversity for profitable and ecologically sustainable wool production.

FURTHER INFORMATION

Native Vegetation and Biodiversity has a number of emerging products containing further information on the Sub-program and its projects.

These include:

- Making more from your native pastures (Product number PF030477)
- Profitable wool production and improved native vegetation – a healthy marriage in Victoria (Product number PF030478)
- What do native vegetation, wool quality and healthy profits have in common in the Northern Tablelands of NSW (Product number PF030479)
- Our reputation for quality wool in the Northern Midlands rides on the sheep's back – and on the health of our native vegetation (Product Number PF030480)
- Revealing the secrets for profitable, productive pastures in the Mid-North (Product number PF040787).
- Integrating paddock and catchment planning – a wool producer-driven approach to sustainable landscape management (Product number PF040731)
- Productive Resource Management for Woolgrowers (Product number PK 040727)
- Productive Native Pastures in the High and Medium Rainfall Zones (Product number PX030509)
- Woolgrowers in the high rainfall and sheep-wheat zone – protecting and improving biodiversity on farm (Product number PX030510)
- Insights – Case Studies of Woolgrowers Productively Managing Native Vegetation for Profit and Sustainability
- Native Vegetation and Biodiversity section of the Land, Water & Wool website: www.landwaterwool.gov.au

To order our publications, contact CanPrint, freecall 1800 776 616 or use the order form in the Further Information section on page 66.

Managing Climate Variability

Managing Climate Variability

Improved climate forecasts enabling stocking rates to be better matched to feed availability is a priority for the long-term sustainability and productivity of Australia's wool industry. Currently, scepticism about the accuracy of seasonal forecasts is the main reason why some woolgrowers don't react to unfavourable predictions*.

The Managing Climate Variability sub-program focuses on better adaptation of existing information as opposed to generic climate science research. The program aims to work with woolgrowers in the pastoral zone in particular to make more effective use of improved seasonal climate forecasts in grazing management decisions.

Specifically, the objective of Managing Climate Variability is to rapidly increase wool producer awareness and use of seasonal forecasts, initially in priority, drought-prone regions, contributing to sustainable grazing management.

Managing Climate Variability is investing $540,000 in research over five years. Six projects have been established nationally as part of this sub-program, which has ongoing, direct contact with more than 1000 producers through newsletters, on-line resources, local workshops and grower groups.

Sub-Program Contact
Dr Barry White
T 07 3371 5878
E barry.white@lwa.gov.au

Tab cover photograph courtesy: Robert Hassett, Queensland Department of Primary Industries and Fisheries

*Land, Water & Wool Best Practice Survey 2003

Land, Water & Wool Managing Climate Variability sub-program partners include:

NSW DEPARTMENT OF PRIMARY INDUSTRIES

Department of Agriculture

Queensland Government Natural Resources and Mines

Department of Primary Industries and Fisheries Queensland Government

SARDI RESEARCH AND DEVELOPMENT INSTITUTE

UTAS

Managing Climate Variability National Research Projects

Managing Climate Variability has six projects.

IMPROVED SEASONAL FORECASTS FOR WOOL PRODUCERS IN WESTERN NEW SOUTH WALES

Project: DAN16 Location: New South Wales

Project Leader

Dr Ron Hacker
NSW Department of Primary Industries
T 02 6880 8002
E ron.hacker@agric.nsw.gov.au

Overview

The western pastoral zone of NSW covers the area bound by Walgett in the north, Balranald in the south, Broken Hill in the west and Nyngan in the east. Since 1879, five extended droughts have caught many graziers in the region unprepared, resulting in major stock losses and sometimes irreparable land degradation. But through *Improved Seasonal Forecasts for Wool Producers in Western NSW*, some 330 woolgrowers are being introduced to seasonal climate forecasts in the hope that by the time the next big dry comes around landholders will be armed with some degree of seasonal foresight.

The project has the joint objective of making woolgrowers more profitable by giving them the confidence to carry more stock through good seasons, while averting the land degradation caused by overstocking through drought periods.

An important aspect of the project is to develop seasonal forecasts for pasture growth rather than just rainfall. Using the *AussieGRASS* computer model, pasture growth is calculated across the variety of soil types based on daily rainfall records and other information, providing graziers with a figure they can use in their stocking rate decisions. The model shows how the pasture growth outlook for the season ahead compares with previous years.

Managing Climate Variability

IMPROVED SEASONAL FORECASTS FOR WOOL PRODUCERS IN THE WESTERN ZONE

Project: QPI47 Location: Queensland

Project Leader

Janelle Park
Department of Primary Industries, Queensland
T 07 4658 4455
E janelle.park@dpi.qld.gov.au

Overview

The western pastoral zone of Queensland is home to up to 500 woolgrowing families and extends from Julia Creek in the north to the NSW border in the south, Boulia in the west and Roma in the east.

Improved Seasonal Forecasts for Wool Producers in the Western Zone aims to deliver accurate, region-specific seasonal forecasts to these growers up to six months ahead, enabling them to make productive and environmentally-sound management decisions based on potential rainfall. Initially the project team is testing the skill of three forecast systems, Average SOI, SOI Phases and 9-Phase SST, to predict rainfall or pasture growth for lead times ranging from zero to six months.

Ultimately the project aims to give growers a more useful forecast of summer rainfall, up to six months in advance so they can instigate management changes more in line with the seasonal outlook, boosting their long-term viability and productivity.

IMPROVED SEASONAL FORECASTS FOR WOOL PRODUCERS IN THE SOUTH AUSTRALIAN PASTORAL ZONE

Project: SRD4 Location: South Australia

Project Leader

Melissa Rebbeck
South Australian Research and Development Institute
T 08 8303 9639
E rebbeck.melissa@saugov.sa.gov.au

Overview

The average rainfall for the 40 woolgrower families in the area stretching from north of Port Augusta to east of Burra is less than 350 millimetres and rainfall distribution is highly variable.

The aim of *Improved Seasonal Forecasts for Wool Producers in the SA Pastoral Zone* is to help growers more effectively use climate forecasts when making grazing management decisions for the season ahead.

Each month participants in the project are e-mailed a package of climate risk management tools and services, including average monthly rainfall, rainfall deciles and three-month predictions of pasture growth, tailored for their individual region and property. These tools and services are giving growers the ability to better identify the likely good seasons in advance to maximise their profits while better managing their risk and reducing their losses in below average seasons.

IMPROVED SEASONAL FORECASTS FOR WOOL PRODUCERS IN THE WESTERN AUSTRALIA SOUTHERN PASTORAL ZONE

Project: DAW41 Location: Western Australia

Project Leader

Dr Ian Watson
Department of Agriculture, WA
T 08 9690 2000
E iwatson@agric.wa.gov.au

Overview

With 70 percent of woolgrowers' income made in 30 percent of years (averaged over 10 years), woolgrowers need access to tailored, good quality, timely information that will better enable them to manage for climactic variability.

The purpose of *Improved Seasonal Forecasts for Wool Producers in the WA Southern Pastoral Zone* is to provide woolgrowers in the southern rangelands with the knowledge, tools and enthusiasm to manage climate variability within their businesses.

The project will build on the results of the forecasting program and will interact directly with woolgrowers to build their capacity to manage climatic risk. The overall objective is for a substantial proportion of woolgrowers in the region to make more informed use of seasonal forecasts, improving both their financial viability and their ability to manage grazing pressure on the rangelands.

Managing Climate Variability

IMPROVED SEASONAL FORECASTS FOR WOOL PRODUCERS IN AUSTRALIA'S PASTORAL ZONE

Project: QNR30 Location: National

Project Leader

Dr Beverley Henry
Queensland Department of Natural Resources and Mines
T 07 3896 9612
E beverley.henry@nrm.qld.gov.au

Overview

Much of Australia's rangelands are characterised by extreme climate variability which represents a major challenge for woolgrowers. In order to maintain or increase productivity while minimising negative environmental impacts on the land, producers need access to reliable seasonal climate forecast (SCF) information at critical times for key management decisions.

The objective of *Improved Seasonal Forecasts for Wool Producers in Australia's Pastoral Zone* is to support and provide tools for the regional Managing Climate Variability Sup-program projects. It aims to make SCF products more relevant to producers and their advisors through pasture growth simulation and prediction using Aussie GRASS, a national spatial pasture growth program.

KNOWING EL NINO: THE INFLUENCES OF CLIMATE PERCEPTION OF LAND MANAGEMENT DECISIONS IN WESTERN NEW SOUTH WALES AND QUEENSLAND

Project: UTA13 Location: New South Wales and Queensland

Project Leader

Mr Peat Leith
University of Tasmania
T 03 6226 7455
E peat.leith@utas.edu.au

Overview

Knowing El Nino: The influences of Climate Perception of Land Management Decisions in Western NSW and QLD will detail use, uptake and needs of seasonal climate forecasts (SCFs) and related products among sheep graziers in three regions of western Queensland and western NSW. Approximately 90 detailed interviews will be conducted with graziers from Hillston, the Mitchell grass plains and Longreach.

These will examine how, when and why SCFs are used and the issues farmers with their accuracy, applicability, lead-time and use. Results will be analysed statistically and qualitatively.

Specifically, the project's objectives are to:

1. Determine how climate forecasting information in the study areas is being utilised and applied by woolgrowers.
2. Investigate the climate forecast needs of these growers with regard to skill and accuracy, as well as preferred lead-time, delivery techniques and format.
3. Analyse the data obtained to assess impediments and opportunities pertinent to improved management of climate variability within these geographic areas.

FURTHER INFORMATION

Managing Climate Variability has a number of emerging products containing further information on the Sub-program and its projects.

These include:

- **Improving seasonal forecasts for woolgrowers – a better climate for wool production** (product number PF 040 736)
- Managing Climate Variability section of the Land, Water & Wool website: www.landwaterwool.gov.au

To order our publications, contact CanPrint, freecall 1800 776 616 or use the order form in the Further Information section on page 66.

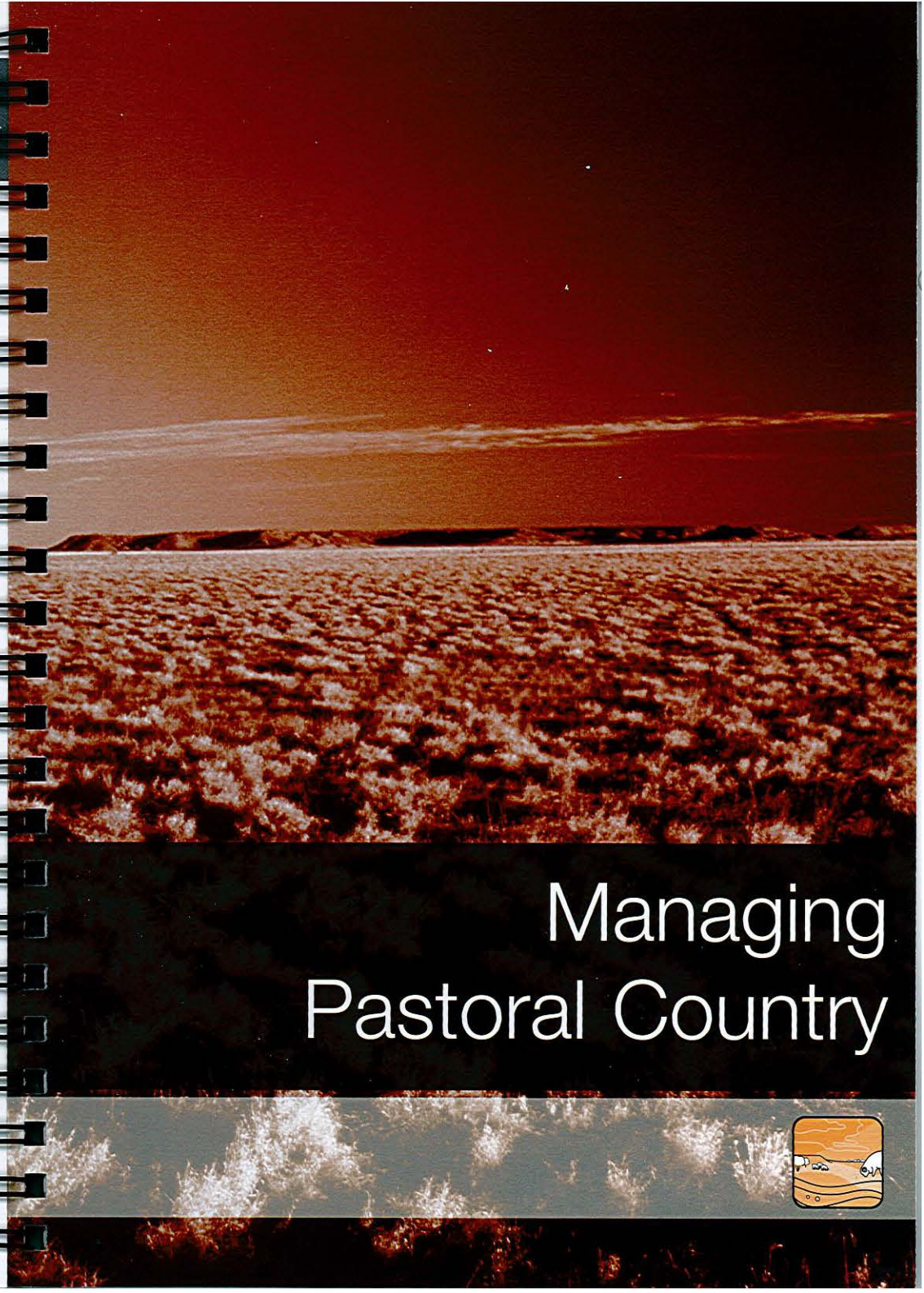
Other resources:

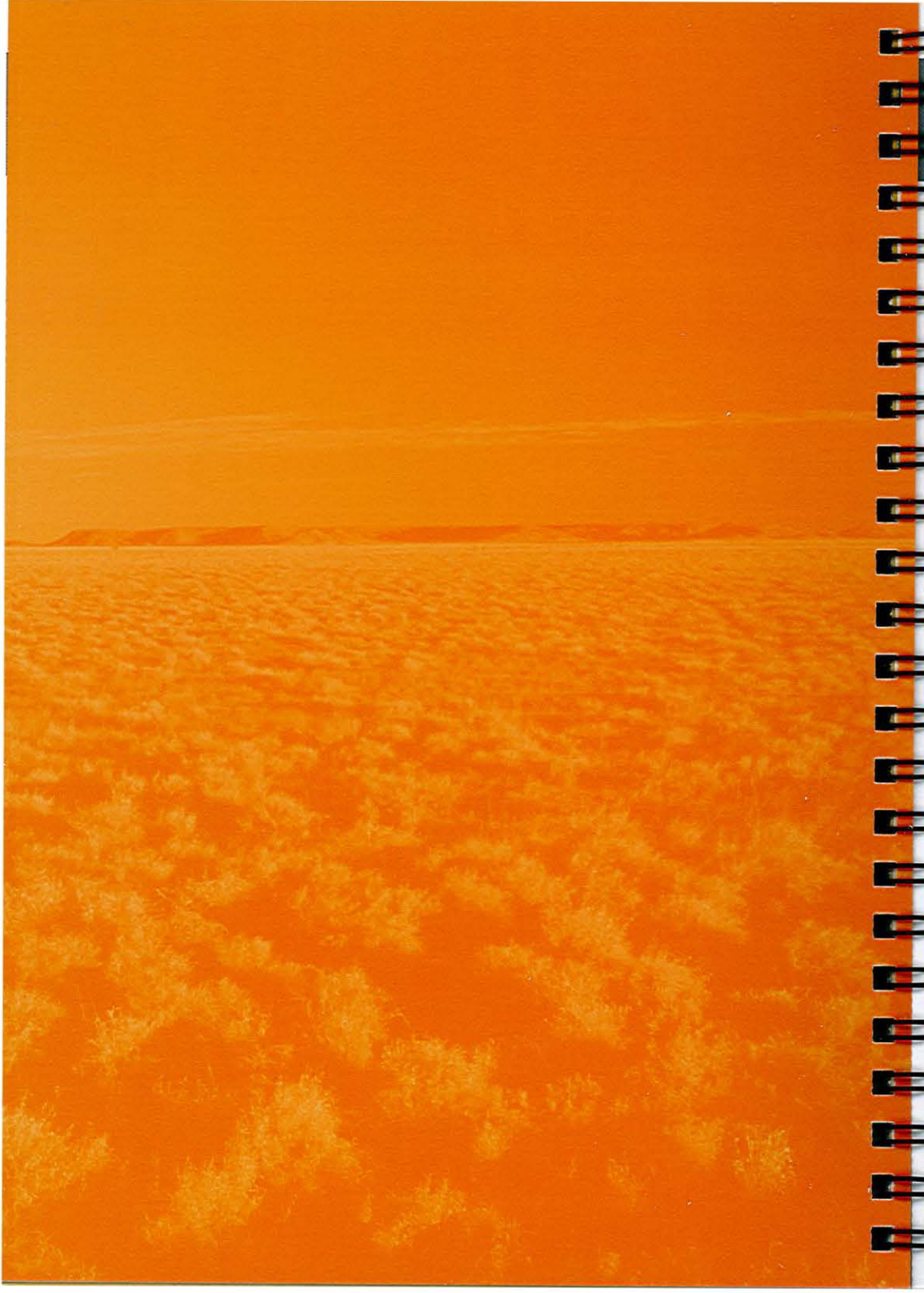
Managing Climate Variability R&D Program
www.managingclimate.gov.au

Climag newsletter (see Managing Climate Variability R&D Program website)

Bureau of Meterology
www.bom.gov.au

Climate Management Information for Rural Australia
www.longpaddock.qld.gov.au





Managing Pastoral Country

There are approximately 2,000 woolgrowers in Australia's pastoral zone managing properties ranging from a few thousand to several hundred thousand hectares. The industry is currently recognising and responding to a wide range of issues including land degradation (it is estimated that 16 per cent of pastoral land is degraded to some degree), animal welfare, uncontrolled pests and weeds and the negative impact of these issues on native plants and animals.

The *Managing Pastoral Country* sub-program is working with woolgrowers to identify how pastoral country can be better managed to address these key environmental issues while maintaining productivity. The sub-program will utilise woolgrower experience to develop test and extend management approaches that deliver enhanced profitability, productivity and positive environmental outcomes.

Encouragingly, adoption of NRM practices among woolgrowers is already high with eighty-eight per cent saying they have undertaken NRM practices to manage their land profitably and sustainably.* In addition, sixty-one per cent of woolgrowers in the pastoral zone said they were interested in receiving assistance to develop a whole farm plan to incorporate NRM into their daily farm management.*

Managing Pastoral Country, which is receiving approximately $370,000 in funding over five years, is the most recent addition to the seven Land, Water & Wool Sub Programs. In 2004, five projects were approved in locations across Australia's pastoral zone, which is also the focus for the Managing Climate Variability sub-program.

Sub-Program Contact

Andrew Lawson
T 02 6263 6000
E andrew.lawson@lwa.gov.au

Tab cover photograph courtesy: Robert Hassett, Queensland Department of Primary Industries and Fisheries

*Land, Water & Wool Best Practice Survey 2003

Land, Water & Wool Managing Pastoral Country sub-program partners include:

NSW DEPARTMENT OF PRIMARY INDUSTRIES

Department of Primary Industries and Fisheries Queensland Government

National Research Projects

Managing Pastoral Country has five national major research sites located in WA, SA, Queensland and NSW.

INFORMING THE DECISIONS OF PASTORAL WOOLGROWERS FOR COUNTRY AND PROFIT

Project: AMH3 Location: Western Australia

Project Leader

Dr Alexander Holm
Alexander Holm and Associates
T 08 9335 9939
E alecholm@cygnus.uwa.edu.au

Overview

With the economic performance of the pastoral sheep industry under pressure and with environmental aspects more prominent, improved use of natural resources is essential to preserve future land use options and ensure optimum sheep productivity.

Informing the decisions of pastoral woolgrowers for country and profit aims to 'get stocking rates right' in terms of impact on both environment and production. The focus will be on informing pastoral woolgrowers' decisions associated with less than average seasons since it is these decisions that have the greatest impact on natural resources and sheep performance.

Information products that are developed as part of the project will enable pastoralists to relate their decisions on stoking rates (i.e. whether to sell or not to sell) to resulting production and environmental penalties associated with that decision.

Managing Pastoral Country

WOOL PRODUCERS WITH REMOTE CONTROL: NEW TOOLS FOR WHOLE OF PROPERTY MANAGEMENT

Project: CSE27* Location: northern South Australia

Project Leader

Dr Craig James
CSIRO Sustainable Ecosystems
T 08 9333 6459
E craig.james@csiro.au

Overview

Management of natural resources on rangeland wool-producing properties requires knowledge of the condition of the resources, the rate of use of those resources by stock and prediction about future climatic conditions. While stock numbers are usually well-known to managers and climatic conditions are well-studied, techniques and tools for managers to rapidly assess forage cover across large areas on their properties are lacking.

Wool producers with remote control: new tools for whole of property management is developing products from remote-sensed satellite sources that show ground cover in a format useful to producers. The products will supplement on-ground inspections and allow wool producers to analyse natural resources across their entire property at frequent intervals. Procedures to automate the customisations of satellite images so that they can be provided frequently at low cost are being explored, as are delivery systems and interface options.

The project is expected to give producers the ability to make more effective and timely decisions about stock and environmental management thereby being better able to sustain the natural resource base and livelihoods.

* Project approved as at April 2005, contract to be negotiated.

DELIVERING A LAND CONDITION FRAMEWORK FOR GRAZING LAND MANAGEMENT EDUCATION

Project: QPI56 Location: Queensland

Project Leader

Dr Mick Quirk
Department of Primary Industries, Queensland
T 07 3362 9583
E mick.quirk@dpi.qld.gov.au

Overview

Delivering a land condition framework for grazing land management education aims to enable sheep producers in the mulga zone and Mitchell grasslands of Western Queensland to be able to implement and monitor strategies for improved environmental management. This will be achieved through the adaptation and delivery of proven management tools that have been developed for the Queensland beef industry.

The tools will include land condition assessment criteria, forage budgeting and a sheep economics module. The project will also look at the rates of adoption of these tools.

The specific project objectives include:

- To produce, test and extend a land condition assessment tool for mulga and grasslands;
- To develop, test and extend a forage budgeting tool so that producers can more effectively manage grazing pressure;
- To link land condition targets to economic outcomes; and
- To test the uptake to tools by land holder groups and monitor the impact on decision making.

STOCKING RATE DECISION TOOLS FOR RANGELAND PASTORALISTS

Project: DAN23 Location: New South Wales

Project Leader

Dr Ron Hacker
NSW Department of Primary Industries
T 02 6880 8002
E ron.hacker@agric.nsw.gov.au

Overview

Stocking rate decisions are fundamental to pastoral management. While graziers factor in many environmental issues into their stocking rate decisions, few effectively incorporate all of the information that is either routinely collected on properties (e.g. rainfall, paddock grazing histories) or could be easily acquired (e.g. resource condition, seasonal climate forecasts).

Managing Pastoral Country

Stocking rate decision tools for rangeland pastoralists aims to make this information more readily useable to assist graziers with the difficult decisions that are fundamental to their economic and ecological success.

The projects objectives are:

1. To evaluate by simulation the behaviour and interpretation of grazing charts under ideal management.
2. To present the results of the evaluation, and at least one other method of stocking rate assessment to focus groups in the Western Division of NSW.
3. To collate graziers' assessments of stocking rate tools based on focus groups discussions and on-property trials.

MITCHELL GRASS DEATH IN QUEENSLAND: EXTENT, ECONOMIC IMPACT AND POTENTIAL FOR RECOVERY

Project: MLA2 Location: Queensland

Project Leader

David Phelps
Department of Primary Industries and Fisheries, Queensland
T 07 4658 4444
E david.phelps@dpi.qld.gov.au

Overview

Queensland's Mitchell grasslands represent 19 per cent of the state's native pasture area supporting in excess of 10 per cent of the cattle herd and more than 40 per cent of the Merino sheep flock in Queensland.

During the 2001-04 drought, large areas of Mitchell grass tussocks died through what appears to be a combination of extended moisture stress and management. The most severely affected area is the central west – in the affected areas, tussock mortality is estimated to be as high as 90 per cent across entire properties. For these areas to recover, Mitchell grass density will have to increase through seedling recruitment. Research and extension activities will need to focus on these badly affected areas.

Mitchell grass death in Queensland: extent, economic impact and potential for recovery seeks to:

- estimate the geographic extent of poor pasture condition, especially in relation to death, or 'dieback' of Mitchell grass plants;
- assess the impact of dieback on the profitability of enterprises;
- encourage and assist graziers to restore pastures to good condition; and
- begin to understand how to improve management during future droughts.

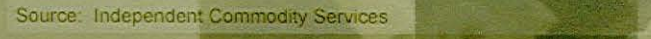
This project will be conducted by Queensland Department of Primary Industries and Fisheries and managed by Meat & Livestock Australia (MLA), with Australian Wool Innovation (AWI) (through Land & Water Australia as manager of Land Water & Wool) as a contributor.

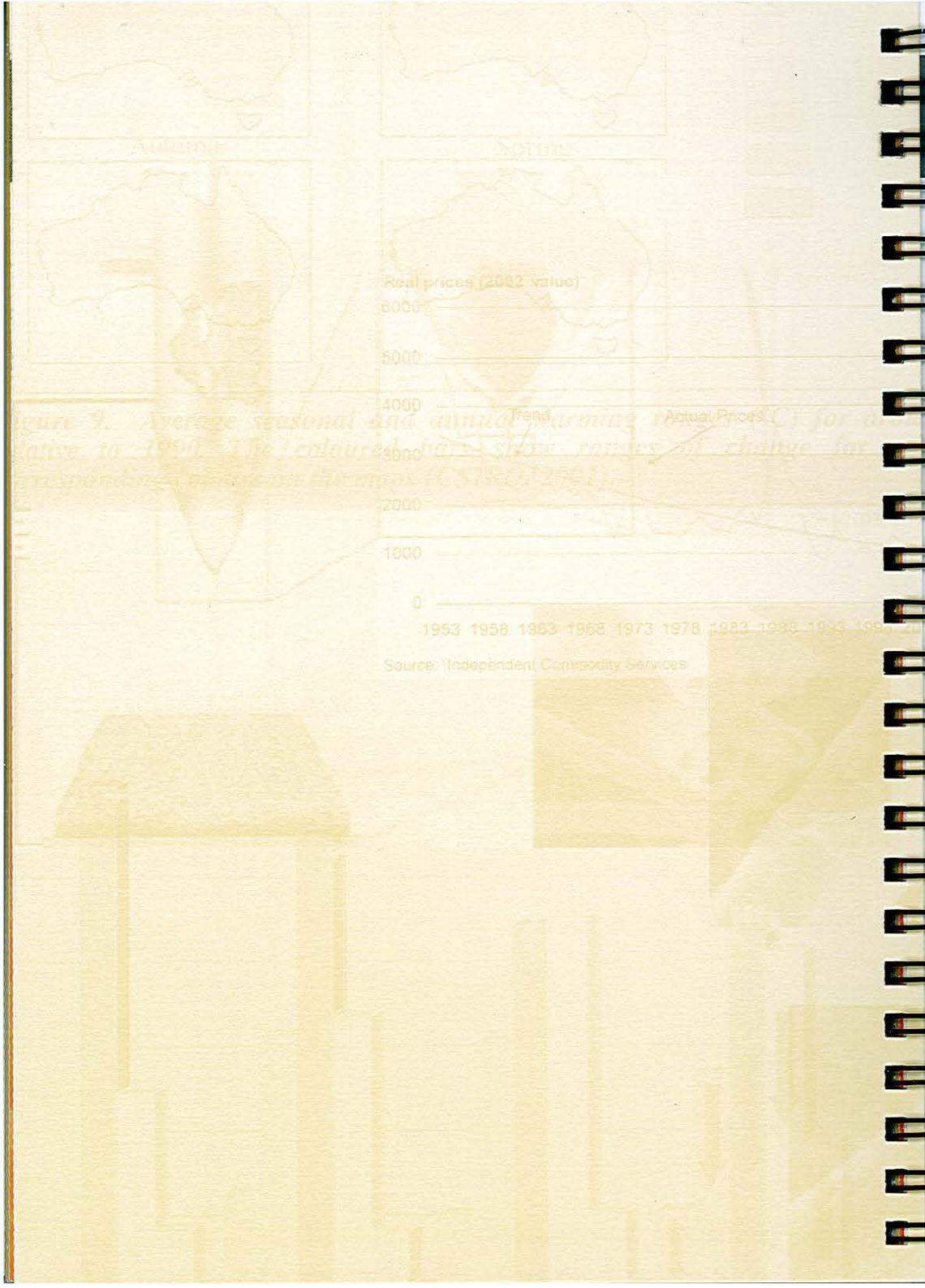
FURTHER INFORMATION

Visit the Land Water & Wool website for background reports and other information:

- www.landwaterwool.gov.au

Future Woolscapes





Future Woolscapes

LandWater&Wool
Shaping the future
another innovation
future scenarios and opportunities

"What might the world look like in 2030 - and what are the implications of that for the Australian wool industry?"

This is a key question being addressed by the Land, Water & Wool Future Woolscapes sub-program, a long-term scenario planning (or 'futuring') exercise designed to identify and analyse the key global and industry issues likely to impact on the wool industry over the next 25 years.

Scenario planning is a tool to help organisations or industries think differently about the future and help deal with uncertainty. It is not about trying to predict the future, but rather developing a range of long-term alternative scenarios (or different "worlds"). These scenario's are then examined to identify and prioritise their strategic implications for the wool industry, especially as it relates to future research and development investment and implications for policy.

The Future Woolscapes sub-program further aims to stimulate debate about the opportunities and challenges that lie ahead.

The program involves working with woolgrowers and industry to consider how emerging global trends (such as population demographics, technological change, environmental, production and trade issues) may impact on the industry over the next 25 years.

At the completion of the Future Woolscapes sub-program, AWI and LWA will be given an analysis of the key trends and their potential implications, for use in longer term strategic planning processes. In addition, woolgrowers will have the opportunity to access authoritative information to look at the some possible future threats and opportunities for the wool industry and what it may mean.

Sub-Program Contact

Russell Pattinson
T 03 5429 1868
E russell.pattinson@lwa.gov.au

Future Woolscapes National Research Projects

Important – these commissioned papers are not yet publicly available

The potential impact of climate change on woolgrowing in 2029 (CSIRO Sustainable Ecosystems) – A comprehensive review of the potential impact of climate change over the next 25 years on agriculture in general and the wool production industry in Australia in particular.

Towards a profitable and sustainable Australian grains industry – pointers to a future woolscape (John Lovett) – An overview of the Grains Council of Australia document 'Single Vision' and the potential implications of that study for the wool industry.

Future Woolscapes

LandWater & Wool
Shaping the future
another innovation
future scenarios and opportunities

Social pressures likely to reshape Australia's woolgrowing industry over the next 25 years (Victorian Department of Primary Industries) – A review of how the demographics of the Australian wool industry (and rural Australia) may change over the next 25 years and what the implications of these changes may be in relation to where woolgrowing is undertaken and by whom. Issues such as labour availability, social expectations and information technology are also covered.

Land and animal management – 2029 (Mackinnon Project, University of Melbourne) – A comprehensive review of the potential land ownership, environmental regulation, labour, technology and animal welfare changes over the next 25 years and what may be the impact of these on the wool production industry in Australia.

Competitor trends in 2029 (PCI Group, UK) – A comprehensive review and prediction of raw material production, mill consumption and final demand for textile fibres (MMF, Cotton and Wool) over the next 25 years. The impact of changes to Processing Technologies, New Fibres, Genetic Modification, Recycling and Consumer Demand is also provided.

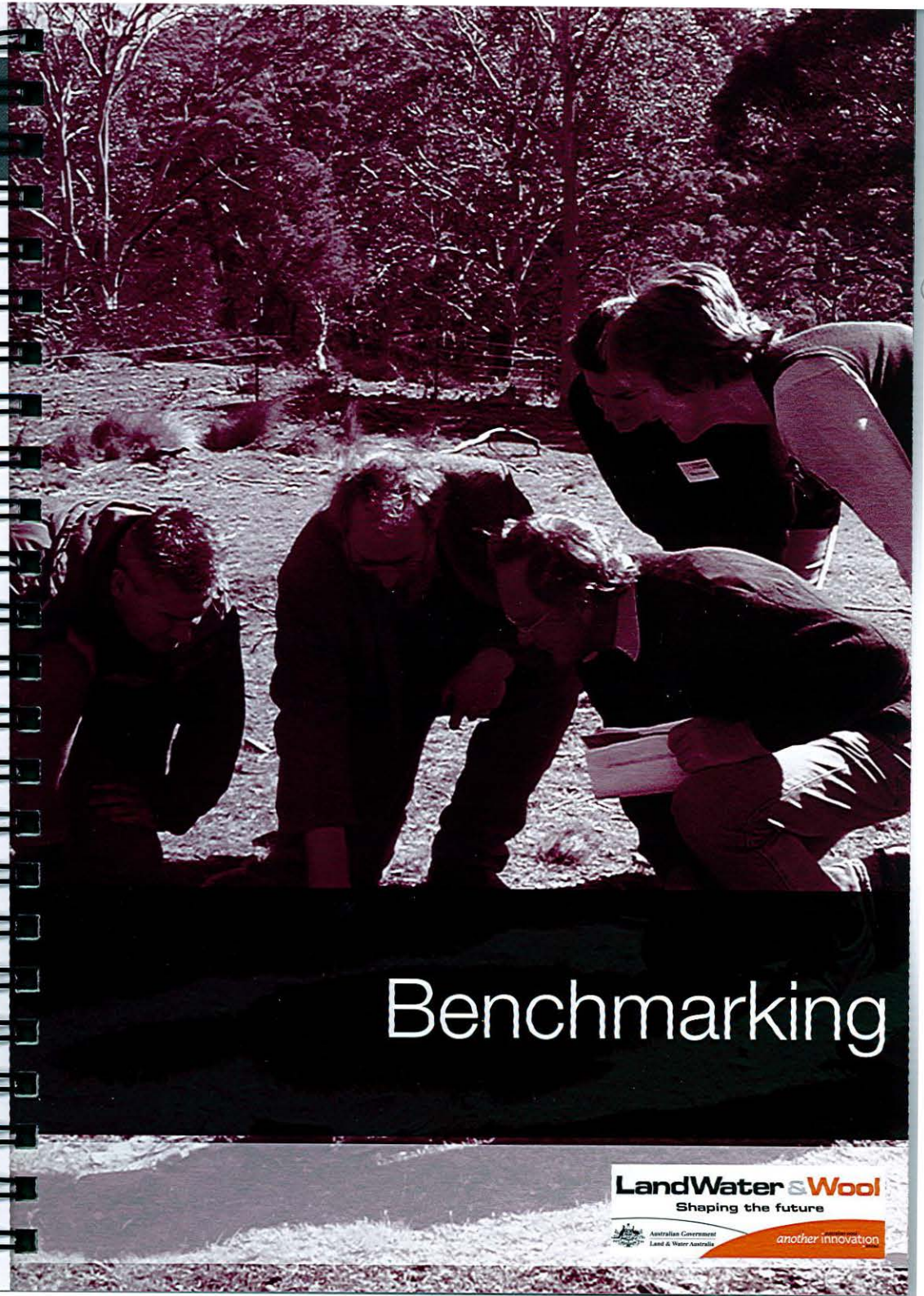
Project 'Narelle' – markets and consumer preferences to 2029 (Ian Fergusson & Associates) – A web-based review of how consumer markets and consumer preferences may change over the next 25 years. It examines these in three timeframes – to seven years, eight to 15 years and then 16 to 25 years. It also examines the potential opportunities and threats that may face the wool industry over this timeframe.

Project 'Dolly' – impacts of the new technologies (Ian Fergusson & Associates) – A web-based review of the potential opportunities from, and impact of, new and emerging technologies (biotechnology, nanotechnology, materials science, organic machines) on the wool industry and competitive fibre industries over the next 25 years.

The potential impact of biotechnology on the Australian sheep industry in 2029 (Prof. H Raadsma, University of Sydney) – A review of the potential opportunities from, and impact of, biotechnology on the sheep industry over the next 25 years. It deals with animal biotechnology only – not plants.

Accelerated growth of food exports from Australia: a feasibility study commissioned by the Australian Fresh Food Alliance (Dr L Ward) – A review of the feasibility study for the Australian Fresh Food Alliance and an examination of the implications for the wool industry

Will woolgrowing be a viable business in 2029? – a review of price and productivity trends (Holmes Sackett & Associates) – A comprehensive assessment of the past and future Terms of Trade for Australian wool production and insights as to what productivity improvements will be required by woolgrowers to be competitive over the next 25 years.



Benchmarking

LandWater&Wool
Shaping the future
Australian Government Land & Water Australia
another innovation

The most comprehensive national survey of woolgrowers' attitudes toward on-farm environmental practices, commissioned through the Land, Water & Wool *Benchmarking* sub-program, has revealed a strong focus on managing natural resources.

The Benchmarking sub-program initiated the 'Best Practice Survey', which revealed Australian woolgrowers' attitudes to natural resource management, highlighting their current practices and needs for information and support.

The research shows Australian woolgrowers strongly consider themselves as custodians of the land – they want to do something about improving the health of the soil, water and native vegetation on their farm.

Woolgrowers interviewed in the survey listed benefits from careful management of their natural resources, which ranged from improving water quality and increasing shelter and stock feed to biodiversity gains such as providing wildlife corridors, and controlling erosion and salinity.

The in-depth interviews conducted as part of the survey also revealed that growers strongly believe improved natural resource management results in productivity, profitability and sustainability gains.

The *Benchmarking* sub-program aims to:

- Create awareness of Land, Water & Wool and inform woolgrowers, government, agencies and industry about woolgrowers' attitudes, actions and perceptions about natural resource management and their current practices; and
- Establish benchmarks for woolgrower attitudes and awareness levels, which can be measured again at the completion of the five-year program.

The findings from the 'Best Practice Survey' establish benchmarks for natural resource management issues of most importance to woolgrowers and ensure the program's investment priorities are relevant to the wool industry.

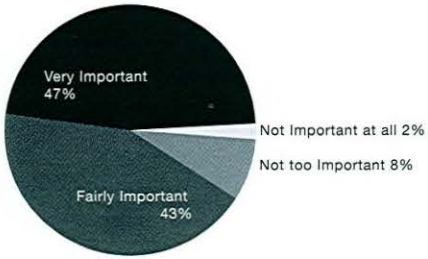
Other key findings included:

- Stakeholders in the wool industry strongly believe natural resource management results in productivity, profitability and sustainability gains – good natural resource management can significantly improve their business' bottom line and doesn't necessarily come at a cost.
- Ninety-one per cent of woolgrowers were either doing something about natural resource management now or had taken some action already.
- Woolgrowers who have already undertaken natural resource management changes in the past are more likely to adopt changes in the future.

LandWater & Wool
Shaping the future
Australian Government Land & Water Australia
another innovation

- Ninety-three per cent of woolgrowers are confident about their knowledge of natural resource management but almost half would like more information or support to help them manage it on their farm.
- Information needs vary between States but in particular there is demand for assistance to develop whole farm plans, native vegetation and salinity management information and financial support.

RATINGS OF NATURAL RESOURCE MANAGEMENT IMPORTANCE



Base: All respondents (n=1500)

Woolgrowers' desire to know more about NRM is a strong endorsement of the Land, Water & Wool initiative and its aims to provide growers with viable, practical and beneficial natural resource management solutions.

Sub-Program Contact

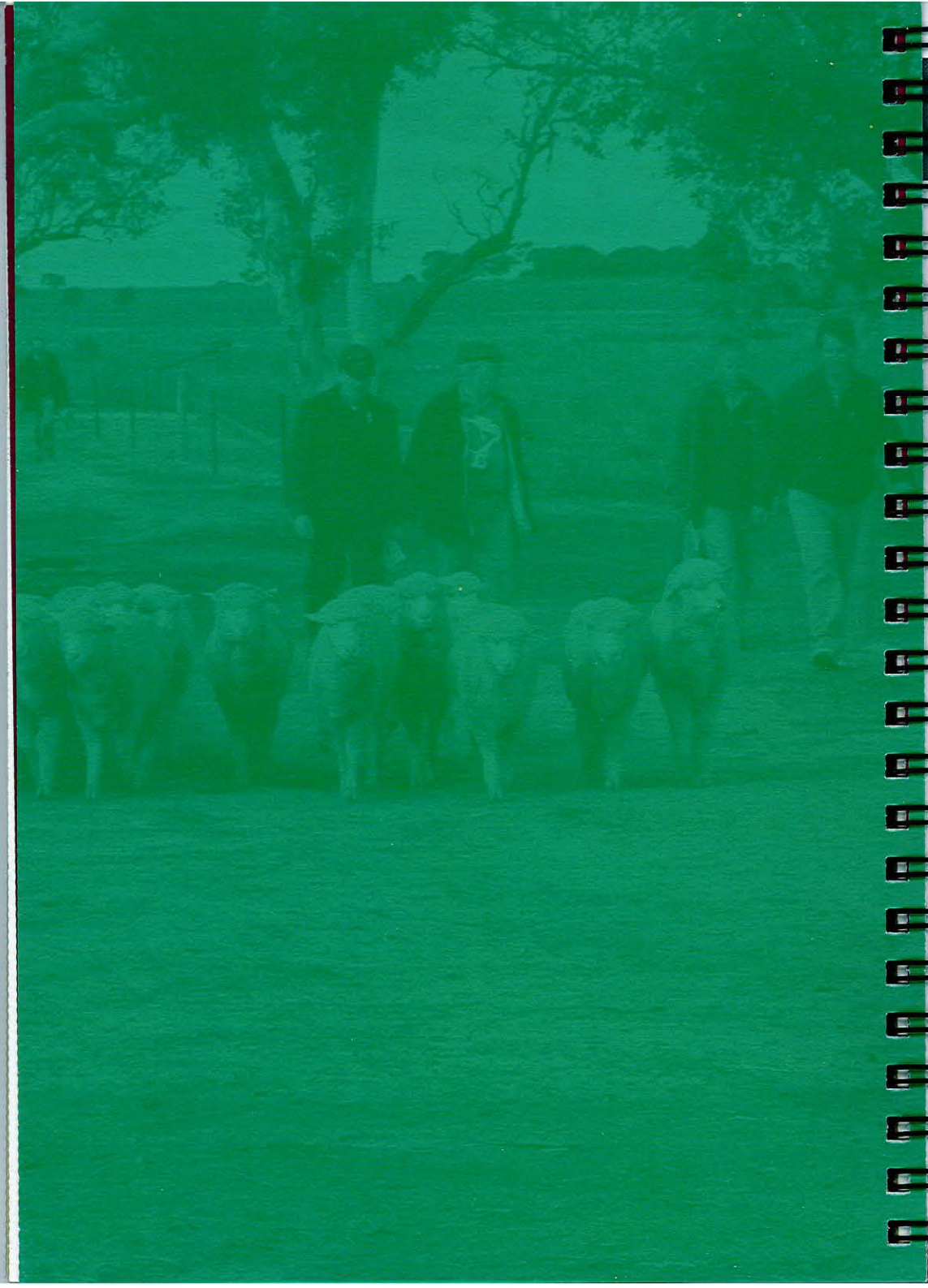
Russell Pattinson
T 03 5429 1868
E russell.pattinson@lwa.gov.au

FURTHER INFORMATION

Download the Benchmarking sub-program *Best Practice Survey* summary.
Visit www.landwaterwool.gov.au

Further Information

LandWater & Wool
Shaping the future
Australian Government Land & Water Australia
another innovation



Further Information

LandWater&Wool
Shaping the future
Australian Government
Land & Water Australia
another innovation

For further information on Land, Water & Wool and its research initiatives visit our website www.landwaterwool.com.au or contact the relevant Sub-program co-ordinator:

Sustainable Grazing on Saline Lands (SGSL)
Dr Warren Mason
T 02 6363 1249
E warren@rpcsolutions.com.au

Native Vegetation & Biodiversity
Prof. Jann Williams
T 03 5444 0248
E jann.williams@lwa.gov.au

Rivers & Water Quality
Dr Siwan Lovett
T 02 6247 7997
E siwan.lovett@lwa.gov.au

Managing Pastoral Country Managing Climate Variability
Dr Barry White
T 07 3371 5878
E barry.white@lwa.gov.au

Future Woolscapes Benchmarking
Russell Pattinson
T 03 5429 1868
E russell.pattinson@lwa.gov.au

NATIONAL CONTACTS

National Manager
Mike Wagg
T 03 9347 7161
E mike.wagg@lwa.gov.au

Communications program
Kim Mitchell
T 02 6859 2396
E kim@curriecom.com.au

Fleur Flanery
T 02 6263 6000
E fleur.flanery@lwa.gov.au

Delivery program
Peter Hanrahan
T 03 5345 3046
E phcpl@vic.chariot.net.au

Address details
Land, Water & Wool
GPO Box 2182
CANBERRA ACT 2601
T 02 6263 6000
F 02 6263 6099
E LandandWaterAustralia@lwa.gov.au

LandWater & Wool
Shaping the future

Australian Government
Land & Water Australia

another innovation

Stay informed

Land, Water & Wool publishes a number of natural resource management information materials for the wool industry including newsletters, fact sheets and technical resources. If you would like to join our mailing list and be kept up-to-date with regard to recent publications, please complete in full the below form.

Name: _____

Organisation: _____

Address: _____

Town: _____

State: _____ Postcode: _____

Tel: _____

Fax: _____

E-mail: _____

I am most interested in receiving information about the following Land, Water & Wool research initiatives (please tick):

- ☐ Sustainable Grazing on Saline Lands
- ☐ Native Vegetation and Biodiversity
- ☐ Managing Pastoral Country
- ☐ Rivers and Water Quality
- ☐ Managing Climate Variability
- ☐ Future Woolscapes

Which best describes you (please tick):

- ☐ woolgrower
- ☐ wool industry technical advisor
- ☐ policy advisor
- ☐ education institution
- ☐ NRM specialist
- ☐ researcher
- ☐ media
- ☐ other _____

Fax to Land, Water & Wool: 02 6263 6099

Or mail to:

Communication Officer
Land, Water & Wool
GPO Box 2182
CANBERRA ACT 2601