National DRYLAND SALINITY Program

National Dryland Salinity Program

Investment Profile 1998-2003

The National Dryland Salinity Program (NDSP) is Australia's lead knowledge broker of research, development and extension efforts to combat the risk of dryland salinity to our land and water resources.

Dryland salinity is now widely recognised as Australia's most serious environmental threat. Since its inception in July 1993, NDSP has provided baseline data, new technologies and practical solutions for dryland salinity.

NDSP is a collaborative research and development effort. The first five-year phase of the Program was completed in 1998. This preliminary phase focussed on improving our understanding of the causes of dryland salinity and established a collaborative, national focus for salinity research, development and extension investment.

A larger, second five-year phase is due for completion in 2003. This phase continues to identify and research the knowledge gaps in our understanding of the causes and impacts of dryland salinity, with a strong focus on developing practical, profitable and sustainable solutions and establishing wider networks.

It is also investigating socio-economic arrangements that encourage or impede appropriate management of salinity, new production options using saline resources and integrated management of saline landscapes. NDSP provides a national forum for exchange of knowledge and building links and providing governments, communities and individuals with the information and technology required to manage dryland salinity in Australia.

Since the establishment of the second phase of NDSP, several significant changes have occurred within the environment in which the Program operates. These changes provide very different political, financial and scientific challenges and opportunities than those faced by the NDSP even as recently as 1998.

This Investment Profile provides a detailed summary of current NDSP projects and previous work from Phase 1 of the Program. Further details about the NDSP, current projects and other dryland salinity initiatives can be found on the NDSP website: www.ndsp.gov.au

Program themes

NDSP currently manages dryland salinity research, development and extension investments under seven key **Program themes**. An outline of each project, and contact details of project managers are listed in this profile to improve direct access to NDSP research, development and extension outcomes.

● This symbol indicates a final project report is available. Please contact the project manager listed or the NDSP Executive Officer, telephone (02) 6257 3379.

June 2001

National DRYLAND SALINITY Program

Theme: Audit and monitoring

> **Extent and impacts of dryland salinity** (December 1998 - February 2001)
Evaluation of existing groundwater and related biophysical/land use data to assess national extent of salinity and development by 2020 and 2050.

Warwick McDonald, National Land and Water Resources Audit
Telephone: (02) 6257 3067 E-mail: warwick.mcdonald@nlwra.gov.au

> **Watertable change in Western Slopes cropping areas of NSW** (November 1998 - November 2001)
Quantify the rate of watertable change at the catchment level under differing land uses & produce conceptual models for flow of groundwater, storage and flow of salt.

David Dent, Bureau of Resource Sciences
Telephone: (02) 6272 5690 E-mail: david.dent@brs.gov.au

> **Delineation of potential salinity hazard in Queensland cropping lands** (December 1999 - December 2000)
Identify likely salinity hazard in cropping lands using existing biophysical information to produce a broadscale map of salinity risk & validate with fieldwork.

Ian Gordon, Queensland Department of Natural Resources and Mines
Telephone: (07) 3896 9471 E-mail: Ian.J.Gordon@dnr.qld.gov.au

> **Regional case studies to assess water balance and management options** (January 1999 - July 2001)
Characterise hydrologic behaviour of identified catchments, evaluate water balance & imbalance distribution relative to land use. Develop land use scenarios to meet water balance targets & link to Capacity for Change project.

National Land and Water Resources Audit; Bureau of Resource Sciences; CSIRO and States
E-mail: jane.coram@brs.gov.au

> **Developing a national monitoring framework for dryland salinity** (March 2000 - July 2001)
Review existing monitoring systems to gain management information about salinity threat & hazard & options.

Jane Coram, Bureau of Resource Sciences
Telephone: (02) 6272 5661 E-mail: jane.coram@brs.gov.au

Theme: Industries

GRAINS

> **Hydrologic impact of woodlands and pasture, NSW north-west slopes** (July 1997 - June 2001)
Examine the impact of grassed woodlands, lucerne-based pastures and cropping on historic deep drainage of water beyond the root zone on the north-west slopes of NSW using environmental tracers.

Rick Young, NSW Agriculture
Telephone: (02) 6763 1117 E-mail: martinrj@agric.nsw.gov.au

> **Better managing wheat-lupin-canola rotations for improved water and N use and efficiency and yield quality** (July 1999 - October 2003)
Use modelling and existing experimental databases to quantify impact of rainfall variability, soil type and crop management on lupin, canola and lucerne growth; yield, water and N use efficiency in rotations with wheat, leading to improved management to raise profitability and sustainability of wheat farming.

Senthold Asseng, CSIRO (WA)
Telephone: (08) 9333 6615 E-mail: s.asseng@ccmar.csiro.au

> **Optimising crop performance through innovative phase farming systems** (July 1999 - June 2004)
Through on-farm participatory research, explore potential for a range of different agronomic strategies to improve crop performance & include environmental benefits of perennial pastures in phase farming systems. Develop management packages that optimise water and nitrogen supply to crops.

Robert Gault (CSIRO)
Telephone: (02) 6246 5148 E-mail: r.gault@pi.csiro.au

Brian Dear (NSW Agriculture)
Telephone: (02) 6938 1856 E-mail: brian.dear@agric.nsw.gov.au

Theme: Industries continued

> **Benefits and penalties to cereal crops sown after lucerne** (July 1998 - June 2001)
Measure the rate of soil profile refilling that occurs on soils sown to wheat and canola after several seasons of lucerne, rate of N release and uptake during cropping phase. Using this and other data, evaluate the long-term benefits and penalties from including lucerne in rotation.

Chris Smith, CSIRO
Telephone: (02) 6246 5960 E-mail: cj.smith@cbr.clw.csiro.au

> **N cycling, soil-water dynamics and plant growth in grazed legume/cereal rotations on duplex soil** (July 1998 - June 2001)
Devise legume/cereal rotations and management strategies, which optimise use of N and water by cereal crops over 5-10 years to improve yields under variable climatic conditions through better understanding of soil/water dynamics.

Jeff Baldock, CSIRO
Telephone: (08) 8303 8537 E-mail: jeff.baldock@adl.clw.csiro.au

> **Phase farming strategies for grain producers in south-east Australia** (July 1997 - June 2000)
Assess hydrologic requirements for phase farming of winter annual grains in south-east Australia, map their hydrologic capability and that of deep-rooted perennial pastures. Appraise phase farming strategies by region in south-east Australia.

Department of Natural Resources and Environment
Telephone: (02) 6272 5525 (Grains Research and Development Corporation)

> **Production and environmental benefits of dewatering cropping subsoils with deep-rooted pasture legumes** (July 1997 - June 2000)
Improve management of hydrologic cycle of cropping soils by developing and demonstrating farming systems that profitably incorporate tactical use of deep-rooted perennial pasture legumes.

Mark Peoples, CSIRO
Telephone: (02) 6246 5244 E-mail: m.peoples@pi.csiro.au

> **Sustainable rotations through recharge control by enhanced lucerne uptake** (March 1998 - February 2002)
Investigate the role lucerne roots play in reclaiming catchment health and identify factors influencing root system turnover to maintain effective root extension and uptake of soil moisture.

Paul Eberbach, Charles Sturt University
Telephone: (02) 6933 2830 E-mail: peberbach@csu.edu.au

> **A simple device for determining deep drainage** (January 1999 - June 2002)
Develop a simple, low cost farmer-operated device capable of measuring deep drainage in soils, to help farmers decide when to rotate crops so as to manage drainage in soils of the Australian wheatbelt.

Paul Hutchinson, CSIRO
Telephone: (02) 6246 5551 E-mail: paul.hutchinson@cbr.clw.csiro.au

> **Impact of high yielding cropping systems on crop water use and recharge** (July 1995 - June 2000)
Measure components of the water balance, specifically recharge and crop water uptake on site managed to optimise grain yield. Relate measured crop water use and actual grain yields to potential estimates calculated from seasonal climatic data.

David Hall, Agriculture WA
Telephone: (08) 9083 1111 E-mail: dhall@agric.wa.gov.au

> **Evaluating impacts of deep drains on crop productivity and the environment** (July 1999 - December 2004)
Evaluate surface drainage impacts on crop yield, surface salinity and waterlogging and assess catchment scale impacts of drainage, including changes in timing and amount of salt loads/concentrations as well as flood peaks.

Tom Hatton, CSIRO
Telephone: (08) 9333 6208 E-mail: tom.hatton@per.clw.csiro.au

> **Million hectares for the future**
(See Regional and Community Initiatives)

> **Lucerne management for dewatering and production in grain-based mixed farming systems** (July 1998 - June 2002)
Determine the effects of lucerne management on dewatering capability in a phase farming system and ascertain lucerne stand densities and defoliation regimes which compromise dewatering capability for developing management criteria.

Anna Ridley, Department of Natural Resources and Environment
Telephone: (02) 6030 4500 E-mail: anna.ridley@nre.vic.gov.au

> **Lucerne to control water and nutrient flows** (July 1998 - June 2002)
Research the role of lucerne for recharge control under cropping rotations and evaluate the extent of deep soil water uptake by established lucerne pastures in the southern Australia cereal belt and relate to various soil factors.

Frank Dunin, CSIRO
Telephone: (08) 9245 9095 E-mail: f.dunin@ccmar.csiro.au

> **Effect of trees and waterlogging on crop production on duplex soils** (July 1995 - June 2000)
Determine the impact of tree rows with and without drains on the frequency and intensity of waterlogging in the adjacent crop. Determine integrated effect of trees on crop production.

Geoff Woodall, Agriculture WA
Telephone: (08) 9861 2482 E-mail: gwoodall@agric.wa.gov.au

> **Water efficient cropping and pasture systems for hydrologic stability on Liverpool Plains and adjacent slopes of NSW** (July 1999 - June 2002)
Integrate water balance considerations into viable farming systems in Liverpool Plains and environs to improve management practices for reducing run-off, soil erosion, nutrient loss, accession to groundwater and salinity.

Rick Young, NSW Agriculture
Telephone: (02) 6763 1117 E-mail: rick.young@agric.nsw.gov.au

> **Farming systems with lower recharge for Western Australia** (January 2000 - April 2004)
Development of new and practical cropping systems taking into account existing farmer knowledge and skills to minimise groundwater recharge and maximise whole farm productivity, thereby reducing the threat of grain-producing land to trees.

Bill Porter, Agriculture WA
Telephone: (08) 9690 2104 E-mail: bporter@agric.wa.gov.au

LIVESTOCK

> **Sustainable grounds for wool** (July 2001 - June 2006)
Establish a national network of saltland wool producers, underpinned by novel on-farm research, to increase profit from salt-affected land while reducing the land at risk of increased salinity. By June 2003, the network will cover one million hectares of land and up to three million hectares by 2006 across Australia.

Richard Price, NDSP
Telephone: (02) 6257 3379 E-mail: richard.price@lwa.gov.au

> **PROGRAZE™ update** (January 2000 - June 2001)
Upgrade the skills of 7000 graduates of PROGRAZE™ in the high rainfall zone of southern Australia for more effective management of their grazing enterprises for production and sustainability, based around managing water as the key issue for sustainable grazing.

Cameron Allen
Telephone: (02) 6361 1204 E-mail: callen@netwit.net.au

OTHER

> **Linking agricultural environment management systems (EMS) with ecological processes and objectives at landscape and regional scales** (June 2001 - August 2001)
Using viticulture as an example, scope the relationship between industry and the environment at the landscape scale. Develop a model to link EMS to bio-regional planning.

Neil Urwin, Griffin NRM for Southcorp Holdings and the Australian Conservation Foundation
Telephone: (02) 6239 4020 E-mail: nurwin@griffin-nrm.com.au

Theme: Infrastructure management

Program activities intend to support investigation into the effects of salinity on local government infrastructure and road, communications and water supply infrastructure.

> **Appraisal of infrastructure assets under threat** (July 1999 - July 2001)
Collate impacts on and costs to various types of public and private infrastructure threatened or already affected by dryland salinity.

Mike Young, CSIRO/Dames and Moore with RECC/PPK
Telephone: (08) 8303 8665 E-mail: mike.young@adl.clw.csiro.au

> **Evaluating the efficacy of engineering options** (July 1999 - June 2001)
Collate and assess information, literature and guidelines on engineering techniques to manage dryland salinity, document and analyse Australian case studies to identify in which regions engineering options may have potential, including on and off-site impacts and needs for further research.

Chris McAuley, SKM
Telephone: (03) 9248 3320 E-mail: cmcauley@skm.com.au

Theme: Policy and operating environment projects

Many activities aim to contribute biophysical, economic and social knowledge to support better policies institutional structures and incentives that will encourage appropriate management of dryland salinity and its impact at local, regional, state and national scales.

> **Determining the costs of dryland salinity** (April 1999 - April 2002)
Produce guidelines for identifying and valuing the full impacts of dryland salinity, raise community awareness of the nature and costs.

Richard Ivey, Ivey ATP
Telephone: (02) 6845 1611 E-mail: richard@iveyatp.com

> **Catchment classification for salinity management** (January 1999 - October 1999)
Produce maps, reports and database showing distribution of catchment types with information on process and mitigation for developing management options and policy opportunities for each type of catchment.

Jane Coram, Bureau of Resource Sciences
Telephone: (02) 6272 5661 E-mail: jane.coram@brs.gov.au

> **Structural adjustment in agriculture and capacity to implement catchment plans** (July 1999 - July 2001)
A qualitative assessment of factors encouraging farmers to adopt sustainable land use practices through case studies, including an analysis of socio-economic capacity to control dryland salinity and implement catchment plans.

Read Sturgess and Associates; Neil Barr, NRE
Telephone: (03) 5430 4439 E-mail: neil.barr@nre.vic.gov.au

> **Capacity of local government to contribute to management of dryland salinity** (June 1999 - December 2000)
Document and analyse case of local government successes and failures in managing dryland salinity, assess the economic rationale for involvement and identify potential new development and planning policies allowing local government to better consider salinity and related natural resource management activities.

Trevor Budge, Research, Planning and Design Group
Telephone: (03) 5441 6552 E-mail: rpdgroup@netcon.net.au

> **Enhancing institutional support for the management of salinity** (June 1999 - February 2001)
Define those institutions affecting dryland salinity management and assess the efficacy of present institutions to address the problem and develop recommendations to enhance institutional support.

Greg Hayes, Virtual Consulting Group
Telephone: (02) 6041 1150 E-mail: administrator@virtualgroup.com.au

Theme: Policy and operating environment projects continued

> **Beyond 2025: transition to a biomass-alcohol economy using ethanol and methanol**
An assessment of opportunities for broadscale establishment of deep-rooted perennials (trees) in recharge areas for biomass production of alcohol-based fuels, including cost estimates.

Barney Foran, CSIRO
Telephone: (02) 6242 1600 E-mail: barney.foran@dwe.csiro.au

Theme: Regional and community initiatives

As significant investors in the management of dryland salinity and its impacts, state governments are key stakeholders in the NDSP. They also provide valuable links to regional and community activities. The NDSP will provide a framework for state, regional and community activities to be networked nationally.

> **PROGRAZE™**
(See Industries - Livestock)

> **Focus catchment review** (January 2000 - November 2001)
Undertake a review of the effectiveness of using focus catchments for research projects as a principal part of NDSP 1.

Jo Curkpatrick, Span Communication
Telephone: (03) 9370 1789 E-mail: jocurk@enternet.com.au

> **Million hectares for the future** (January 2000 - April 2004)
Develop environmental improvement systems in partnership with grower groups for adoption of over one million hectares of cropping land in Western Australia and South Australia, including practical indicators for evaluation of performance and tools to identify the likely environmental impact of changes, especially salinity.

Bill Porter, Agriculture WA
Telephone: (08) 9690 2104 E-mail: bporter@agric.wa.gov.au

> **Tools to investigate and plan for improved management of salinity** (July 1998 - April 2002)
Provide extension material and skills for management of dryland salinity throughout the Murray Darling Basin by completing a comprehensive extension folder and providing extension and training support to implement the prepared information through workshops.

Darrel Brewin, PPK
Telephone: (03) 52554207 E-mail: dbrewin@pacific.net

> **FLOWTUBE rapid catchment appraisal model** (June 2001 – February 2004)
A simple computer program for dryland salinity management Australia-wide.

Richard Bell, Murdoch University
Telephone: (08) 9360 2370 E-mail: R.Bell@murdoch.edu.au

Theme: Productive use of saline resources

In some parts of Australia, the productive use of saline lands is the only economically feasible option available. The NDSP provides a framework to foster support for new and emerging industries, or novel farming systems, which profitably use, or preferably assist the rehabilitation of salinised resources.

> **Options for productive use of saline lands** (June 1999 - May 2001)
Identify and assess innovative approaches to the use of saline land and water with the aim of future development of potential industries that may turn the salinity problem into an economic opportunity.

Stephanie Bolt, PPK
Telephone: (08) 8405 4300 E-mail: sbolt@ppk.com.au

> **Sustainable grounds for wool**
(See Industries - Livestock)

Theme: Environmental protection and rehabilitation

Many program activities aim to support the protection and management of biodiversity, habitat and landscape amenity values threatened by salinity and its impacts.

> **Evaluating the efficacy of engineering options**
(See Infrastructure Management)

> **Understanding the recruitment biology of vegetation communities on saline soils** (January 1999 – December 2001)
Compile a report based on literature search, lab and field work on seed viability and rates of germination, natural recruitment and ultimate establishment under a range of saline conditions, to establish germination requirements of key indicator species within plant communities subject to salinisation.

Michelle Carey, Murdoch University
Telephone: (08) 9360 6077 E-mail: mcarey@central.murdoch.edu.au

> **Predicting the combined environmental impact of catchment management regimes on dryland salinity**
(July 2000 – December 2002)
Improved understanding of the cumulative environmental impacts of dryland salinity on salt loads, water yield and flooding at the catchment scale and enhanced capacity to predict the impact of differing management regimes on long-term average water yield.

Lu Zhang, CSIRO
Telephone: (02) 6246 5802 E-mail: lu.zhang@cbr.clw.csiro.au

> **Assessment of a system to predict the loss of aquatic biodiversity from changes in salinity** (August 2000 – May 2002)
With the likelihood of continuing and increasing areas of dryland salinity, determine if the predicted changes will result in acceptable or unacceptable changes in aquatic biodiversity.

Ben Kefford, DNRE
E-mail: ben.kefford@rmit.edu.au

> **Biogeochemical and physical processes in saline soils and potential reversibility** (July 2000 – May 2002)
Develop an advanced understanding of the biogeochemical and physical processes in saline soils in 11 Australian agricultural regions and potential for reversibility for decision making on management.

Rob Fitzpatrick, CSIRO
Telephone: (08) 8303 8511 E-mail: rob.fitzpatrick@adl.clw.csiro.au

> **Generation and delivery of salt and water to streams on a catchment scale** (July 2000 – May 2002)
Develop an understanding of landscape processes and ecosystem functions in areas affected by or at risk from high watertables and dryland salinity.

Hamish Cresswell, CSIRO
Telephone: (02) 6246 5833 E-mail: hamish.cresswell@cbr.clw.csiro.au

> **Risk and restoration potential for remnant vegetation in salinising landscapes** (July 2000 – June 2003)
To determine conservation priorities in salinising landscapes from assessments of risk from water table rise, and to develop strategies for protection and restoration of vegetation cover.

Richard Hobbs, Murdoch University
Telephone: (08) 9360 2462 E-mail: R.Hobbs@murdoch.edu.au

NDSP Projects - Phase 1 (1993-1998)

The first five-year phase of the NDSP was completed in 1998. It focussed on improving our understanding of the causes of dryland salinity and on establishing a collaborative national focus on the research and development effort. Final reports are available from the NDSP Executive Officer, Telephone (02) 6257 3379.

> **Quantification of the full range of costs of dryland salinity** (July 1994 – June 1995)
Develop a methodology for rigorous assessment of catchment-wide costs of salinity to apply in a second phase project aimed at:

- Identifying the nature and distribution of the full range of costs of dryland salinity and where possible quantifying the costs in monetary terms; and
- Developing a perspective of the nature, value and distribution of the costs of salinity of the Murray Darling Basin

Australian Bureau of Agricultural and Resource Economics

> **Development of approaches for assessing non-market values related to salinity** (June 1994 – February 1997)
To identify non-market valuation techniques suitable for use in dryland salinity management decision making.

Australian Bureau of Agricultural and Resource Economics

> **Improving dryland salinity management through integrated catchment scale modelling** (July 1995 – June 1998)
Define the key data needs to achieve sensible catchment descriptions, and what level of accuracy is required to answer the current problems of dryland salinity in the Liverpool Plains. Link biophysical and economic data to assess, through time and space, the effects of land management practices on ecological sustainable development for the Liverpool Plains.

Australian Geological Survey Organisation

> **Mapping dryland salinity: national co-ordination** (July 1994 – February 1997)
To map the extent and severity of dryland salinity in three catchments using multi-temporal Landsat TM data. Provide guidelines to support the use of the approach nationally.

CSIRO Mathematical and Information Sciences

> **Evaluation of the different measurement and modelling techniques for comparing the deep drainage under current and alternate farming** (January 1995 – June 2000)
Determine experimentally the deep drainage under current and alternative crop and pasture systems for both the Liverpool Plains and the Loddon/Campaspe catchments using a range of soil physical and micro-meteorological methods of measurement.

Quantify the effects of farm scale management strategies on long-term cumulative deep drainage to groundwater using both experimental information and the cropping system simulator to generalise the data for other rainfall seasons and soil systems.

CSIRO Land and Water

> **Willalooka Wetlands Project: sustainable pasture production systems in a region of shallow watertables and seasonally flooded wetlands** (July 1995 – June 1999)
To investigate groundwater balance and surface water responses in an interdunal agricultural pasture system to determine the impact of agricultural practices on wetland health and value:

- The impact of wetland water bodies on regional groundwater;
- The impact of wetland water bodies on adjacent soil salinity and pasture species persistence; and
- Appropriate land management practices and operating strategies for improved wetland habitat and sustainable pasture production.

Primary Industries South Australia

> **Investment of programs and institutional arrangements for effective natural resource management** (June 1996 – August 2000)
To develop and deliver a validated methodology for implementing Natural Resource Management investment strategies which take into account acceptable cost sharing and institutional arrangements.

Liverpool Plains Management Committee

NDSP Projects - Phase 1 (1993 - 1998) continued

- > **Paddock scale guidelines for salinity management in the Balfes Creek catchment** (July 1997 – May 2000)
  To undertake a preliminary desktop study (using existing water balance models and datasets) that will identify the impacts of various land management strategies on recharge for the range of land types in the Balfes Creek catchment.
  Queensland Department of Natural Resources and Mines

- > **Native perennial grasses for productive sustainable pastures in southern Australia** (July 1994 – December 1998)
  By June 1997 to select at least one native grass that has the potential to reduce soil water to at least the same extent as phalaris; grow weaner sheep or cattle; and that can be readily commercialised.
  NSW Department of Land and Water Conservation

- > **Broombush: a potentially viable high water-use crop** (July 1992 – June 1997)
  Determine and demonstrate the best establishment and management practices for a wide range of opportunities for broombush cultivation.
  Primary Industries South Australia, Forestry

- > **Defining soil constraints to tree water use, growth and survival for managing groundwater recharge** (July 1995 – June 1999)
  To develop key indicators of soil physical conditions that limit root development and water uptake, thereby constraining tree growth and survival.
  University of Western Australia

- > **Why is dryland and water salinisation still a major environmental problem?** (January 1996 – May 2000)
  To determine why the salinisation process continues to progress in spite of a perception that community awareness has been raised and the existence of substantially funded R&D programs.
  University of Western Australia

- > **Evaluating the impact of land management changes on water balances at the paddock scale** (March 1995 – June 1998)
  Determine the long-term impacts of alternate salinity management options on the water balance, particularly on deep drainage and recharge at the paddock or sub-catchment scale.
  Victorian Department of Natural Resources and Environment

- > **Impediments to adoption of dryland salinity policies and programs** (June 1994 – December 1996)
  To identify the nature of the social, economic and environmental impediments to the adoption of dryland salinity management policies and programs in catchments using the Liverpool plains as a case study.
  Australian Bureau of Agricultural and Resource Economics

- > **Predicting areas at risk from salinity** (July 1994 – March 1996)
  To integrate remotely sensed data sets collected from satellite and airborne geophysical systems and aerial photographs with other spatial data relating to terrain, geomorphology, land use, ground-water, soil and climate to establish a method to predict areas at risk from salinity.
  CSIRO Mathematical and Information Sciences

Contact NDSP

For further assistance, or to obtain additional information resources regarding dryland salinity in Australia, contact your nearest NDSP Communication Co-ordinator:

Kim Mitchell (National)
Currie Communications
Telephone: (03) 9696 5899 Facsimile: (03) 9696 6285 E-mail: kim@curriecom.com.au

Mark Warnick (Queensland)
Department of Natural Resources and Mines
Telephone: (07) 3896 9645 Facsimile: (07) 3896 9625 E-mail: mark.warnick@dn.qld.gov.au

Lisa Gray (New South Wales)
Department of Land and Water Conservation
Telephone: (02) 9228 6111 Facsimile: (02) 9228 6464 E-mail: lgray@dlwc.nsw.gov.au

Jo Curkpatrick (Victoria)
Span Communication Pty Ltd
Telephone: (03) 9328 5301 Facsimile: (03) 9328 5302 E-mail: jocurk@enternet.com.au

Bruce Munday (South Australia)
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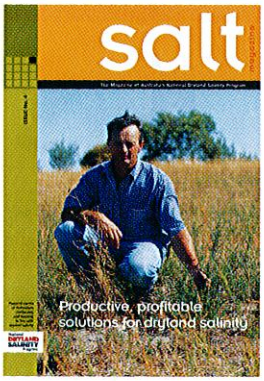
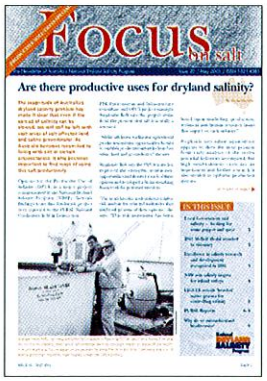
Georgina Wilson (Western Australia)
Agriculture Western Australia
Telephone: (08) 9368 3889 Facsimile: (08) 9474 2018 E-mail: gwilson@agric.wa.gov.au

The NDSP Communication Team manage a number of communication tools for the benefit of Australians managing the risk of dryland salinity to our land and water resources. Contact your nearest NDSP Communication Co-ordinator for further details, or visit NDSP online at www.ndsp.gov.au

NDSP Website www.ndsp.gov.au – a comprehensive online resource.



SALT magazine – personal stories of Australians combatting and learning to live with dryland salinity.



Focus on Salt – the newsletter of Australia's National Dryland Salinity Program.

National DRYLAND SALINITY Program

AGRICULTURE FISHERIES FORESTRY

CSIRO

GRDC Grains Research & Development Corporation

MURRAY-DARLING BASIN COMMISSION

National Land & Water Resources Audit
A program of the Natural Heritage Trust

Land & Water AUSTRALIA

australian wool innovation pty ltd

RIRDC RURAL INDUSTRIES RESEARCH & DEVELOPMENT CORPORATION

State Governments of Western Australia, South Australia, Victoria, New South Wales, Queensland and Tasmania.

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