

STATE SALINITY COUNCIL

Newsletter of the Western Australian State Salinity Council
also online at www.salinity.org.au

December 2001

COLLIE SALINITY SITUATION STATEMENT RELEASED

Environment and Heritage Minister Dr Judy Edwards recently released a report on the salinity of the Collie River, which outlines some feasible options to restore the water in the Collie River.

"The clearing controls and reforestation in the Collie catchment over the past two decades or more have succeeded in stabilising salinity levels in the Collie River," Dr Edwards said.

"The key to further improvement in water quality now appears to lie in a mix of vegetation and engineering options."

The *Collie Salinity Situation Statement report* incorporates computer modelling to show that river salinity targets could be met through options such as revegetation, lucerne, commercial forest management, and engineering actions such as groundwater pumping and river diversion.

Dr Edwards described the report as a scenario for recovering what will be a valuable source of water for

future generations, and praised the cooperation between local community groups, Government departments and research groups that developed this report showing how water quality targets could be met.

"The challenge now will be for everyone to use the new information to develop on-ground solutions that are not only economically feasible, but also socially and environmentally acceptable," Dr Edwards said.

"The containment of salinity in the Collie River so far – and the potential to reduce stream salinity even further – is a success story in the ongoing fight against this major environmental problem."

WE WOOD AWARD WINNER



Dr Glen Walker, winner of the National Dryland Salinity Program's 2001 WE Wood Award for excellence in salinity research and development.

Leading scientist Dr Glen Walker has won Australia's most prestigious accolade for innovation in salinity research and development – the National Dryland Salinity Program's 2001 WE Wood Award.

South Australian-based Dr Walker, who is senior principal research scientist with CSIRO Land and Water, is currently seconded to Primary Industries and Resources South Australia.

Dr Walker's recent research has influenced the management of dryland salinity by raising awareness of the scale of the problem, developing groundwater models to predict 'what if' scenarios and highlighting the inadequacy of current farming systems to deal with both groundwater recharge and discharge.

Australia's National Dryland Salinity Program (NDSP) sponsors this important award for outstanding scientific or technical excellence, which recognises a unique contribution to managing salinity by an individual or group over a sustained period of many years.

Previous recipients of the award include inaugural winner, Dr Tom Hatton, CSIRO Land and Water, in 1999 and Dr Richard George, salinity manager with the Department of Agriculture, Western Australia, in 2000.



2002

A Big Year for Conferences

Agroforestry Expo 2002

The 2002 Agroforestry Expo will be held on Sunday 13 October at the Mount Barker Recreation Centre in the heart of bluegum growing country.

Planning and design will again be a major focus for the Expo, incorporating soil testing, knowledge of rainfall patterns and an understanding of groundwater hydrology.

Western Australian experts from a range of agencies and organisations will be available on the day to assist visitors to the Expo with planning advice.

The Agroforestry Expo is being held in conjunction with the 2002 Australian Forest Growers Conference (14 to 16 October in Albany).

With a large national and international audience expected at both events, the timber industry is set to gain a high level of support in the Region.

For more information on the 2002 Agroforestry Expo visit www.agroforestry.progressrural.wa.gov.au

Dryland Drainage Sustainability/ Best Practices

A national workshop on dryland drainage will be held in Perth in October next year.

The conference will include discussion on:

- principles and design;
- on-site impacts/benefits;
- environmental considerations;
- disposal; and
- case studies.

The workshop is being organised by CSIRO with involvement from the Grains Research and Development Corporation, the Water and Rivers Commission and the Department of Agriculture.

More information is available from Viv Baker on telephone (08) 9333 6274 or email viv.baker@per.clw.csiro.au.

Prospects for Biodiversity, Waterways and Rural Communities in a Salinising Landscape

A week-long conference to be held in Albany in October 2002 will bring together national and international experts to discuss the management of dryland salinity and related processes.

Prospects for Biodiversity, Waterways and Rural Communities in a Salinising Landscape is being jointly run by the CRC for Plant-based Management of Dryland Salinity and the Centre of Excellence in NRM and will feature presentations and workshops focusing on practical solutions arising from cross-disciplinary collaboration.

The conference will include presentations from researchers and practitioners, a day of field trips, workshops and plenary sessions tackling the issues in detail.

Attendees can also take part in an optional tour from Perth through Great Southern towns and agricultural areas affected by rising salinity on their way down to Albany, or participate in a more extensive post conference trip to the Fitzgerald River National Park and Biosphere Reserve.

The speakers at the conference have not yet been finalised, but may include:

- Mr Peter Garrett, Chair of the Australian Conservation Foundation,
- Dr Tim Flannery, Director of the SA Museum,
- Dr Don Blackmore, CEO of the Murray Darling Basin Commission,
- Representative from the Vavilov Institute, St Petersburg and
- Representative from the Biosaline Agricultural Research Centre in Dubai.

For information, bookings or details of papers contact Marcus Blacklow on phone (08) 9368 4897 or email mblacklo@agric.uwa.edu.au.

Wake up Australia! PUR\$L 2002

The national Productive Use and Rehabilitation of Saline Lands (PUR\$L) conference will be held in WA in 2002 following the theme 'Wake up Australia! Saltland Opportunities – profit for our communities and the environment'.

The conference will be a platform for Australia's leading farmers and scientists in the PUR\$L area and will run from 17 to 20 September 2002.

The first two days of the conference will be held at the Esplanade Hotel in Fremantle. For the second stage delegates will travel by coach through the Wheatbelt and Great Southern inspecting examples of productive use and rehabilitation of saline land, with an informal dinner and reception in Kojonup, before going on to Katanning for the final day.

The conference and workshop will be a 'working meeting', where delegates can share knowledge and experience with farmers and scientists and those with responsibility for putting new ideas into practice.

Further information is available from the conference secretariat, Promaco Conventions Pty Ltd, on telephone (08) 9332 2900 or email promaco@promaco.com.au. Information is also available on the conference website at www.promaco.com.au/conference/2002/pursl.

ANZECC on Biodiversity

The Australian and New Zealand Environment and Conservation Council has released a report entitled "Implications of Salinity for Biodiversity Conservation and Management".

The report provides an overview of current knowledge, makes recommendations for on-ground actions and institutional change and identifies key research needs.

The report can be downloaded from the web at www.biodiversity.sa.gov.au/pub.html#salinity

Murdoch University researchers to combat dryland salinity Australia-wide

A new, three-year, national research project aimed at combating dryland salinity Australia-wide is being based at Murdoch University and partly funded by Land and Water Australia and the Grains Research and Development Corporation.

It will be headed by the School of Environmental Science's Associate Professor Dr Richard Bell and Murdoch University Research Fellow Dr Christopher Clarke, and will see close collaboration between the natural resource management agencies from every state in Australia, CSIRO, and the University of Melbourne.

The primary aim of the project is to complete the development of an innovative and very simple computer program known as *Flowtube* which will be available on the web.

Flowtube was originally developed by Warrick Dawes of CSIRO. Although simple in concept it was difficult to operate so the Department of Agriculture in Western Australia has commissioned Dr Robert Argent of the University of Melbourne to ensure *Flowtube* is as simple as possible to operate for the ways in which salinity develops in WA.

The new project will provide for thorough testing of the program and further development so that it can be used across all of the eastern States.

Dr Clarke, Dr Richard George of the Department of Agriculture (WA) and Dr Tom Hutton of CSIRO used *Flowtube* to provide advice to the State Salinity Council on the effectiveness of treatments to combat salinity in 1999; the advice was incorporated into the State Salinity Strategy released in April 2000.

For more details please contact Dr Clarke on (08) 9381 1003 or C.Clarke@murdoch.edu.au.

COMMUNITY GIS TRAINING



Alex Syme, community representative from Denmark, practices his newly learned GIS skills by preparing a thematic map of the Torbay subcatchment.

Twenty representatives of catchment and landcare groups from across the South Coast have been trained in geographic information systems (GIS) concepts and ArcView® software.

Two two-day training courses, plus a number of software licences, have been fully funded through the State Salinity Council Community Support Scheme 2000.

The "Opening the Data Tap" project is managed by the South Coast Regional Information Centre (the RIC), which is a project of the South Coast Regional Initiative Planning Team (SCRIPT).

The training demonstrated practical direct application of GIS as a tool in natural resource management problems and solutions on the South Coast.

The skills learned will help these groups make better decisions using some of the latest techniques in information technology.

The trainees are looking forward to being better able to make effective catchment plans, project applications and final reports.

Because there were over sixty people interested in the twenty training spots, the RIC will investigate the opportunity for further GIS training.

For more information, please contact RIC Manager Kristina Fleming on (08) 9892 8494 or kfleming@agric.wa.gov.au or visit www.scric.org.

ANOTHER NINE TOWNS JOINING SALINITY PROGRAM

Another nine Western Australian country towns have been accepted into the Rural Towns Program, the partnership between local and State Government to tackle townsite salinity.

The latest additions bring the total number of towns involved to 39 — from Mullewa in the north to Cranbrook in the south.

New towns will receive assistance with hydrological investigations and groundwater modelling leading to a salinity management strategy. This may include pumping and drainage work if this is appropriate. It will almost certainly involve more careful use of water to reduce recharge to watertables.

Drilling of about 20 groundwater monitoring bores, as a first stage, is expected between February and April 2002 in Boddington, Bullaring, Darkan, Goomalling, Narrogin, Nyabing, Trayning, Wandering and York.

Eucalyptus Sawlog Program – Mid Rainfall Zone

The Forest Products Commission, with assistance from the Water and Rivers Commission, the Department of Conservation and Land Management and the Department of Agriculture, is proposing the development of a new eucalyptus sawlog industry for the 450 to 650 mm annual rainfall zone of South West WA; this is outside the traditional timber production areas of the State and outside the main bluegum plantation zone.

The industry will be based on cleared private land and deliver multiple, complementary benefits to farmers, create rural and regional opportunities for employment and enable long-term ecologically sustainable development.

The most significant benefit will be reduced water tables and salinity levels and the potential for bio-energy development when the plantations mature.

The goal for stage one is to establish a resource, centered on water recovery catchments and covering about 20,000 hectares, with the capacity to produce 150,000 cubic metres per year of high-grade eucalyptus sawlogs.

The plantings will be designed with farmers so their economic and environmental goals are met, particularly relating to land and water threatened by salinity.

In stage two the goal is to increase the resource, in the remaining 450 to 650 mm zone, to an area capable of producing 1,500,000 cubic metres per year of predominantly high-grade eucalyptus sawlogs by the year 2030.

For more information, please contact Mike Buckton at the Forest Products Commission on telephone (08) 9475 8806 or email michaelb@fpc.wa.gov.au.

New guide on tree placement

A new guide for landholders on the best place in the landscape in which to plant trees for maximum effect in controlling salinity is now available from district offices of the Department of Agriculture.

Many landholders have suffered considerable disappointment and frustration when new trees have died soon after planting or had no impact on watertables, thus contributing little to salinity control, but much to lightening of pockets.

Current wisdom on tree placement for salinity was recently summarised by Don Bennett and Kim Brooksbank and published as Farmnote 76/2001.

The publication uses simple diagrams and the example of a hypothetical 100-hectare

catchment in the medium rainfall zone under four different tree planting scenarios.

It shows why three-row alleys planted at 50-metre intervals across the whole catchment or planting all high recharge soils may be more effective than wider alleys or planting a similar number of trees around the saline areas.

Under six-row alleys of trees planted at 100-metre intervals saline areas are shown to be likely to expand.

If no planting was undertaken, groundwater modelling indicated that the original 10-hectare waterlogged/saline area would eventually double in size.

The examples also highlight the need to understand the hydrology of the landscape and then plan appropriately before undertaking tree planting for salinity control purposes.

Contact your local Department of Agriculture office to obtain copies of the new Farmnote.



The Merredin Townsite Groundwater Pumping and Desalination Pilot Project (partially funded by the State Salinity Council's Community Support Scheme 2000) is moving ahead.

This photo shows Greg Jenkins from the Aquaculture Development Unit (on the left), hydrologist Rosemary Knott and Rural Towns Program Manager Mark Pridham (both from the Department of Agriculture) checking out the desalination unit that was installed in November.

The unit desalinates 10,000 litres of groundwater per day.

Greg Jenkins was on hand to test the groundwater for possible use in aquaculture projects.

A message from the Council's new Patron



Governor of Western Australia, His Excellency
Lieutenant-General John Sanderson AC

Returning to Western Australia as Governor after so many years away, I have found myself taking an intense interest in the sustainability of the ecology of this wonderful state.

This has drawn me towards those organisations addressing the vast problem of salinity and soil degradation in our interior. My acceptance of the role of Patron of the State Salinity Council is based on a desire to lend the encouragement and support of the office of Governor to all those involved.

For many reasons, the contribution of Western Australia to the overall prosperity and future of the Australian Federation is now of such a magnitude and importance that it exceeds the dreams of even the most ardent federationists of the late 19th Century. Export of an expanding quantity and range of minerals, including hydrocarbons, provides the bulk of that contribution, but the foundation of grain, wool, and meat and live animal exports continues to underpin our trade and provide the diversity and depth to our international standing. Our unique flora and fauna will also increase in importance as a sustainable asset as eco-tourism expands. The sustainability of this diversity is of increasing importance to the long term wellbeing of our State and our communities.

Our lack of early understanding of the effects of the application of Northern Hemisphere farming techniques to an ancient and desiccated landscape has created most of our enduring problems. The evidence of my own eyes suggests that we now have a situation of a magnitude that will demand more than platitudes and token resource allocations to stop vast wastes of our land staying under salt.

I am by nature an optimist, and take great heart from the fact that there is a growing awareness of salinity among the general population, and an emerging generation that is more deeply concerned with the ideas of sustainability. Building alliances between the general public, government bodies, research agencies, farmers and industry should be made easier by this growth in understanding. But leadership will be the glue that brings all this together, and such leadership must come from people like the members of the State Salinity Council, who have the expert knowledge in these fields.

Among those there are many people who I know have been engaged in this battle for many years. As Patron I want to acknowledge and thank them for their efforts. I look forward to promoting the work of the State Salinity Council and meeting with the council members and other groups involved in the year ahead.

GOVERNOR
November 2001

Dieback Resistant Jarrah Trees – A Big Step Forward

A state-run seed orchard of dieback resistant jarrah trees has been established at Manjimup in a big step forward to combat the disease, which has been killing jarrah trees since the early 1920s.

The project is a joint initiative between the Department of Conservation and Land Management, Alcoa World Alumina Australia, Murdoch University, Edith Cowan University and the Forest Products Commission and is financially supported by the Natural Heritage Trust.

Alcoa's support of the project started in the late 1980s with grants to the Universities to develop the tissue culture procedures.

At that time dieback was seen as a major threat to re-establishing jarrah trees in Alcoa's rehabilitated mined areas and the use of dieback resistant jarrah trees was seen as a way of overcoming this problem.

Early inoculation trials carried out by Department of Conservation and Land Management research scientist Mike Stukely established that some jarrah trees are more resistant than others to the dieback pathogen; high resistance trees were then cloned by Associate Professor Jen McComb (Murdoch University) and Dr Ian Bennett (Edith Cowan University).

However the cost of producing the clones is high – over \$10 each – so it is not feasible to use them directly in large scale field plantings. Hence the priority is now to use the clones in seed orchards set up using the expertise of the Forest Products Commission and use the seed produced to grow dieback resistant jarrah plants.

The seed from the orchard will be used to rehabilitate dieback affected forest areas, for more field trials in cooperation with community conservation groups and to continue studies into the mechanisms of resistance. Eventually the dieback resistant jarrah trees will be available for sale to the public.

For further information contact Mike Stukely from the Department of Conservation and Land Management on phone (08) 9334 0326 or Associate Professor Jen McComb from Murdoch University on phone (08) 9360 2336.

NEWS FROM COUNCIL

Change to contact details

The Council Secretariat has moved. New contact details are:

Street Address:

3 Baron-Hay Court, South Perth WA 6151

Postal Address:

c/o Department of Agriculture, Locked Bag 4,
Bentley Delivery Centre WA 6983

Fax: (08) 9474 3196

Phone:

Don Crawford, Executive Officer
(08) 9368 3163

Liz Yuncken, Communications Officer

(08) 9368 3937

Desiree Leech, Admin Officer

(08) 9368 3164

Email addresses remain the same.

Annual Report

The State Salinity Council is in the process of producing its first annual report.

The report will highlight the Council's achievements in the 2000-2001 financial year, and will outline some of its plans for 2001-2002. Information about expenditure, Council members and the Community Support Scheme 2000 will also be included.

The annual report will be available to download from www.salinity.org.au soon.

To receive notification of its availability, visit www.salinity.org.au today and join the mailing list.

For those without access to the internet, a small number of printed copies can be accessed through the Council's secretariat on (08) 9368 3164.

Investment Framework

The policy document for public investment in salinity developed by a working group of the State Salinity Council (see the June 2001 newsletter) is in the process of being endorsed by the Cabinet Standing Committee for Environmental Policy.

The working group has decided to stage a trial in the Avon Catchment Council's region in order to test the policy and develop guidelines to assist groups in using the framework.

The trial will be supported by a team that can provide technical assistance in gathering data, natural resource economics, change management and facilitation.

All other regional groups have been invited to observe the process and start work in their own areas concurrently.

The trial implementation will start early next year (pending the Cabinet Standing Committee's approval of the implementation plan at their December meeting) and a full process and set of guidelines will be

developed to make future implementation easier for groups at all levels.

Action following Merredin Conference

The State Salinity Council has considered the action required following the "Dealing with Salinity in Wheatbelt Valley" conference held in Merredin in July/August 2001.

A record of the group work developed in the workshop on day three and the results of the questionnaires was forwarded to participants in September.

Council also asked the Water and Rivers Commission and the Department of Agriculture to work through the Avon Working Group to network with conference attendees living and working on the land in the Avon area to develop a demonstration catchment and engineering options combined project under the Engineering Evaluation and Demonstration Catchment Initiative. The idea is to demonstrate the wheatbelt valley of the future (ie testing the 'vision' considered at the workshop).

Several other initiatives, such as developing the vision further, will form part of the response to the Salinity Taskforce report.

The effect of elections on salinity management

Following the recent federal election, it is timely to consider the election policies of the Liberal-National coalition government in the area of salinity management. A summary of these policies is below:

The coalition has promised to:

- develop an agreed national framework for environmental management systems (EMS) in agriculture and provide a maximum \$3000 tax rebate to eligible low-income landholders to develop and apply an EMS to their properties
- implement the \$1.4 billion National Action Plan for Salinity and Water Quality

- invest a further \$1 billion into the Natural Heritage Trust and simplify its structure and delivery processes
- work with the states and territories to develop, by December 2002, agreed national standards for salinity, water quality, terrestrial biodiversity and in-stream biodiversity
- require regional bodies to be responsible for setting investment priorities and their implementation.

You can read the full environmental and agricultural policies on the internet at www.liberal.org.au.

The portfolio responsibilities relating to salinity and natural resource management are:

Agriculture, Fisheries and Forestry
Minister: The Hon Warren Truss

Forestry and Conservation
Minister: The Hon Ian Macdonald

Parliamentary Secretary:
The Hon Judith Troeth

Environment and Heritage
Minister: The Hon Dr David Kemp

Parliamentary Secretary:
The Hon Sharman Stone

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