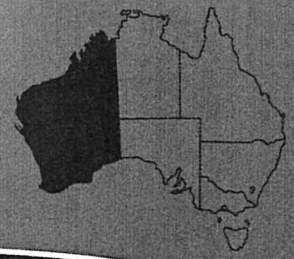




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SALINITY



Salinity Update WA

March 2006

- Extent of Salinity?
- Central wheatbelt deluge
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Extent of salinity? Different methods of measuring salinity in recent years often using different terminology have led to some varying estimates, and the CRC held a meeting on 9 March in Perth to look at current trends, particularly from a regional basis. The consensus from Department of Agriculture hydrologists was that salinity as indicated by water table levels is declining in several soil-landscape zones in the Northern Agricultural Region, but are continuing to climb in most areas throughout the rest of the agricultural area. More detail in a report under 'WA Node' on this website.

Central wheatbelt deluge. Heavy rain in the wake of Cyclone Clare in January, followed by further unseasonal drenchings, has left land managers in central wheatbelt areas wondering what has hit them. An early casualty was dry feed, leaving perennial shrubs such as saltbush, or perennial pasture such as lucerne as a lifesaver for hungry stock. On one research trial site near Lake Grace the growth rate of the saltbush in two months in the warm moist conditions was equivalent to a normal full 12 months. However, with germination of many plants since the rain, many farmers are now finding no shortage of green feed and not needing the 'green haystack' after all.

One worrying aspect of the rainfall is the likelihood of increased salinity in many wheatbelt valley floors. Department of Agriculture and CRC Salinity researcher Richard George warned that while the summer rain and run-off might have washed away surface salt, salt stored in the soil above the saline water table might be drawn to the surface. This could affect autumn seeding of crops, with delays or depression of germination. This has been the third case of heavy summer rain in recent years, and each time there has been evidence of increased salinity as water was evaporated from the soil surface and salt concentrated there.

Department of Agriculture principal researcher Dr Doug Abrecht from Merredin, said weeds could play a very useful role in drying out the top layer of soil, reducing the risk of waterlogging and salt damage to establishing crops – unlike in normal years when conserving moisture in the top layer was a priority before seeding. Evaporation from bare moist soil can draw water and salt from deeper layers by capillary rise, leaving increased concentration of salt in the seed zone, but roots from a transpiring summer crop or even summer weeds draw water from deeper layers and limit capillary rise of water and salt into the seed zone. An exception to this "let 'em grow" advice would be with vining weeds such as wireweed and melons which cause difficulties at seeding. Dr Abrecht said the weeds might only need to grow for a few weeks to have the desired effect, and could then be removed.

Reckoner for \$ investment in saltland pastures. Getting a handle on the real value of improved saltland pastures is not easy, but Department of Agriculture economist Allan Herbert is giving it a go by publishing a new Ready Reckoner for use by farmers or advisers. Over the last year Allan has visited about 26 properties involved in the Sustainable Grazing on Saline Lands (SGSL) project and wanted to summarise his findings for other farmers, especially as the most common questions related to cost of establishment and returns. The Reckoner is free

and involves estimating three variables — the number of sheep which might be run on the saltbush, the value of a sheep grazing day (you choose a value between 5 and 40 cents) and the cost of pasture establishment (between \$100 and \$800/ha). After that, it is a matter of lining up the numbers on a rotating wheel to reveal the number of years to pay off the costs and the cost-benefit ratio over 10 years. BCR = 3 means that you get back \$3 for every dollar invested. Allan admits it is probably just a starting point for discussion, and welcomes any feedback.

- *Contact: Allan Herbert on (08) 9368 3680 or aherbert@agric.wa.gov.au*

Future for Sustainable Grazing on Saline Lands? The SGSL activity draws to a close at the end of 2006 and already some research is winding up. SGSL has combined scientific research projects from leading scientists with smaller on-farm projects, of which there are more than 60 in WA alone. Later this month four workshops will be held at regional centres in WA — Katanning on afternoon 21 March, Corrigin morning of 22 March, Kellerberrin on Thursday, and Dalwallinu on the Friday morning — to determine requirements for further investment in managing saline land by Australian Wool Innovation Ltd, CRC Salinity and other prospective partners. The meetings will look at saltland from the 'triple bottom line' of economic, environmental and social drivers and constraints on development, with participants asked to rate three opportunities for investment in research, development or extension in each category that a new program could not afford to ignore.

- *Contact: Judy Andrews on (02) 6295 6300 or judy.andrews@kiri-ganai.com.au*

EverGraze trials in WA. Chicory is proving to be the stand-out favourite pasture of trial sheep in the EverGraze trial at Wellstead on the South Coast. EverGraze is a major CRC-Meat & Livestock Australia project aiming to increase livestock returns while providing environmental benefits through use of perennial pastures — in this case to reduce wind erosion and waterlogging. Site leader, Paul Sanford from the Department of Agriculture, said that of the main four species being investigated, lucerne establishment last spring had been slightly disappointing but kikuyu, tall fescue and chicory were all doing extremely well. Nearly 400 Merino ewes have been on the 60 ha plot since early February, moving daily through 2 ha cells. They are in excellent condition and being mated with Poll Dorset rams for a late July lambing.

Alternative subtropical grasses, setaria and green panic, are also being trialled and responding very well to the recent summer rain. A ewe ovulation study will begin soon comparing the effects of perennial green feed on ovulation rate in comparison to 'flushing' ewes with lupins on annual pasture. Another trial will concentrate on increasing winter pasture production in summer-active perennial pastures through the use of innovative species mixtures such as lucerne and winter-active fescue.

- *Contact: Paul Sanford on (08) 9892 8475 or psanford@agric.wa.gov.au*

Love potion found for river saltbush. Research at Kings Park and Botanic Garden in Perth, under a joint project with the CRC Salinity and the Sustainable Grazing on Saline Lands initiative, should lead to major cost savings in establishing river saltbush (*Atriplex amnicola*). Gibberellic acid, a commonly available and comparatively inexpensive plant hormone, has been found to increase germination rates 20 times, in a fraction of the time. Dr Jason Stevens from Kings Park has found that seed priming can cut germination from 30 days to five, with a 99 per cent success rate. This compares with normal field seeding where germination rates can be as low as 5 per cent. Interestingly, the gibberellic treatment had no effect on old man or wavyleaf saltbush which were also in the trials.

Dr Ed Barrett-Lennard from the CRC Salinity and Department of Agriculture, who supervised the research with Kings Park Director, Dr Kingsley Dixon, said unreliable germination had been a major obstacle to the wide-scale adoption of saltbush, which could play an important role in rehabilitating saline areas while providing valuable stock feed. He described the result as the first step in a larger investigation to improve establishment of a wider range of saltbush species on saltland and arid soils. Better ways to engineer placement of saltbush seed could prove just as beneficial as seed treatments, he predicted, bringing the success of seeding much closer to the more expensive establishment with seedlings.

- *Contact: Jason Stevens on (08) 9480 3639 or jstevens@bpa.wa.gov.au*

National Coordinating Committee for Salinity has agreed that there should be a National Land and Water Resources Audit II pilot project in each State to test the application of the salinity indicators/framework and processes to capture and report consistent data. This seeks to address the following questions:

- Where is land salinity monitoring data being collected and reported according to the agreed national standards?
- What information is useful for regional reporting? For national reporting? Spatially and temporally?
- What information is required that would provide a context in which to place specific information on salinity, and where is it? (For example climate and land use information, catchment and regional management action targets related to salinity?)
- What is the trend in salinity information at catchment and national scales as identified from information provided at monitoring sites?
- What is the size of salt-affected areas at a regional scale and how is that related to estimates of salt-affected areas at smaller scales of assessment.

The pilot projects will be run by the relevant agency in each State.

- Further information from Simon Veitch on (02) 6272 4643 or simon.veitch@daff.gov.au

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Coming events

SGSL Planning Workshops

Help shape plans for a second SGSL

Katanning (DAWA 1-4.30 pm Tuesday 21 March), Corrigin (Resource Centre 9 am-1 pm Wednesday 22 March), Kellerberrin (Cuolahan Pavilion 9 am-1 pm Thursday 23 March) and Dalwallinu (Wheatlands Motel 9 am-1 pm Friday 24 March). Refreshments provided, including lunch following morning workshops.

Contact: jhardy@agric.wa.gov.au or judy.andrews@kiri-ganai.com.au

Kwongan Colloquium – Native Plant Life of the Western Australian Sandplains

Saturday 25 March, at the University Club, UWA plus field trip on Sunday 26 March to Badgingarra and Lesueur National Parks and a nature reserve.

www.plants.uwa.edu.au/home/forthcoming_scientific_meetings/kwongan

13th Australian Society of Agronomy Conference

10-14 September 2006, Perth WA

www.agronomy.org.au

Any comments, queries or notice of up-coming events related to salinity, don't hesitate to contact:

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