

Professor Malcolm Oades has been awarded the 2003 J.A. Prescott Medal of Soil Science. The medal was presented at a special function in recognition of World Soil Day (5th December) by two of J.A. Prescott's granddaughters.



Above: Ms Anne Prescott (L) and Ms Kate Prescott (R) at the presentation of the Prescott Medal to Professor Malcolm Oades in Adelaide.

Professor Malcolm Oades made outstanding achievements in both theoretical and methodological aspects of soil science. These advances have altered the way soils are investigated experimentally and managed for crop production. His high profile brought many international postgraduate students to Australia and did much to enhance the reputation of Australia as a place of opportunity for excellent research in natural resource management. See Page 17 for summary of achievements.

LATE NEWS

RESULT OF IUSS ELECTION

- SEE PAGE 5 -

PROFILE

AUSTRALIAN SOCIETY OF SOIL SCIENCE INC.

ARBN 080 783 106

ABN 96 080 783 106

The Australian Society of Soil Science Incorporated (ASSSI) was founded in 1955 to work towards the advancement of soil science in the professional, academic and technical fields. It comprises a Federal Council and seven branches (Qld, NSW, Riverina, ACT, Vic, SA and WA). Liability of members is limited.

The ASSSI is committed to:

Advancing soil science

Providing a link between soil scientists and members of kindred bodies within Australia and other countries.

Specific ASSSI Objectives

- To promote the field of soil science
- To further the expertise in soil science of members
- To be a forum for discussion on soil science
- To increase government and community awareness of soil science
- To liaise and cooperate with other organisations in support of mutual interests
- To encourage research and extension in soil science
- To promote wise management of the soil resource throughout Australia

ASSSI MEMBERSHIP

For all Membership and CPSS Application and renewals, subscriptions, queries and address changes contact Linda Bennison, ASSSI executive officer on telephone 03 5622 0804, facimile 03 5622 0806, email asssi@bigpond.net.au

ASSSI WEBSITE

<http://www.asssi.asn.au> <http://www.asssi.asn.au>

PROFILE

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email to organic@agric.uwa.edu.au

Advertisements

Advertisements relevant to some aspects of soil science are welcome. Charges are full page \$220, half page \$110, quarter page \$55 (GST inclusive).

All contributions are welcome, text preferably by email.

Please send to the editor for 2004 Lyn Abbott, School of Earth and Geographical Sciences (Soil Science), M087, The University of Western Australia, Nedlands WA 6009 Western Australia

Fax 08 9380 1050 Email - organic@agric.uwa.edu.au

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From the ASSSI President

Cameron Grant

2003 was an interesting year for the Society, and one that brought us to a cross-roads of sorts. Before I explain myself, let me first report that the IUSS election is well underway and we should have a president and vice-president on deck by the middle of January 2004 (Editor's Insert: See Page5). Now to the cross-roads.

Successive Federal Councils have worked hard since ASSSI's inception in 1956 to bring the practice of soil science onto a professional and relevant footing in Australia. We gradually organized more frequent *National Soils Conferences* (every 4 years until 1996, now every 2 years – will we move toward annual conferences one day?) We introduced several awards to recognize excellence in soil science (e.g. *JA Prescott Medal* since 1972, *ASSSI Publication Medal* since 1979, *JK Taylor Medal* since 1984, and now the *CG Stephens Award* since 2002). We have re-engaged in formal strategic planning (since 2000) and focused our activities and governance on a national scale rather than on a regional one. (Having said this, the regional activities continue to be the life-blood of the Society – they are just open to all members of ASSSI). We made a submission in October to the House of Representatives *Inquiry into the Coordination of Science to Combat the Nation's Salinity Problem* (this report can be viewed in this issue of *Profile* - Page 20). Perhaps most importantly, the Society introduced its accreditation scheme in 1996 – the *Certified Professional Soil Scientist, CPSS*. This had a somewhat shaky infancy, but it is now well organized and accepted among many users of soil information.

I have been told on numerous occasions during 2003 that ASSSI now teeters on the brink of becoming either a significant professional organization capable of making a major contribution to Australia, or else slipping back into a minor parochial body that engages in endless navel-gazing and just bumbles along. Of course most of us want to be part of the truly relevant and professional group, but it's not so easy as it sounds. Nevertheless, if we are not to be pushed into irrelevance by the growing number of other professional associations catering for soil scientists, we will have to get our skates on and stay in front of the pack.

Furthermore, if we want to exert serious influence (i.e. control) over standards of practice in soil science, we probably need to follow the 'true' professionals (e.g. accountants, engineers, architects etc) and get a grip on professional strategic planning (which we do well), plus business and market planning (which we don't do at all). This big jump into the world of 'professionalism' cannot be done with our current administrative arrangements and without full-time executive support. At the moment, we operate a humble office in Warragul, Victoria (please note the recent move from Mornington), with an excellent – but part time – Executive Officer, who is run off her feet. With the CPSS program and a growing ASSSI membership, her responsibilities have expanded well beyond the secretarial duties she was originally hired for. This is a clear indication we are on the cusp of expansion and change.

So, which way will we head? Will we rule a line and go-slow on 'professionalism' or will we leap into the future with the reins in our hands? If we decide to bumble along, there is no urgency to do anything. If we take the big leap, however, we must gain new skills in business and market planning and possibly raise the fees. There are indications we can move ahead significantly without raising fees at the moment, so let's not get bogged down on that issue just now. I would like to invite discussion on this issue through *Profile*, and look forward to hearing your views on such questions as:

Do we want to remain the peak body on matters pertaining to soil science, or do we simply want to be an open club for those who have a peripheral interest in soils (e.g. *Soils Association of South Australia*)?

If we want remain the peak soils body, how can (and to what extent should) ASSSI exert authority over the professional behavior of associations and bodies that practice soil science?

Should we raise our credentials by linking membership in ASSSI with membership in CPSS?

On a final note, it is time for us to start thinking about how we will celebrate the golden anniversary of the Society in 2005. Federal Council will be considering the matter in 2004 and we would welcome your views on what can be done. Feel free to raise this at Branch meetings or with any of the Federal or State Executives.

Cameron Grant.



From the Editor

Lyn Abbott

Thank you for the prompt response to my request for early submission of material for this edition.

Please note the following: There has been a change in phone and fax numbers for ASSSI office (see below) and a change in web addresss for viewing AJSR (See Page 23).

New ASSSI Office phone	03 5622 0804
New ASSSSI Office fax	03 5622 0806

IUSS Secretary General, Prof Stephen Nortcliff

Greetings from the north!

As I write this brief note we are moving towards the end of 2003 and it will be Christmas in the next few days. I am almost at the end of my first year as Secretary General of IUSS during which I have had to 'learn the ropes' and adjust to the very different demands of an international organisation when compared with those of a national organisation. For me this first year has been most enjoyable, I have found myself in contact again with many friends who I have met over my years as a relatively well travelled soil scientist, but I have also made many new contacts with soil scientists who I had not previously known. Whilst sometimes we may curse the immediacy of electronic communication and that for ever full 'inbox', I find that this means of communication allows me to respond to enquiries more quickly and often address enquiries and problems which otherwise would have been prolonged over weeks given postal delays and the like. For the first time this year Alfred Hartemink and I published the Bulletin (No 103). This was a much smaller circulation than in previous times because, given the change from individual membership to National Society membership, it went only to National Societies, Honorary Members, Library subscriptions and individuals who have subscribed to the Bulletin separately. In addition to producing this Bulletin in Paper format we also produced some 250 CD copies. We would like to produce future issues of the Bulletin in this format or for it to be circulated as an email attachment, and we anticipate that National Societies might abstract parts for their own websites or newsletters. Our switch to these electronic formats are part of our attempt to reduce the costs of running IUSS. The printing and postage charges of two issues of the Bulletin in the old format accounted for well over 40% of our annual income. As our website (www.iuss.org) becomes even more established we hope the need for these mass mailings will be reduced even further (the Bulletins are up on the website prior to dispatch by mail), although I regret the response to my questionnaire seeking a switch from paper to electronic versions of the Bulletin has not seen the number of switches we had hoped for.



The year has been a mixed one if I look at Soil Science in a global context. The lows have been that a number of Soil Scientists have seen their positions disappear in 'efficiency drives' or 'reorganisations to allow a focus on the key issues facing the environment'. It is difficult to see what IUSS can do directly to address these actions other than to stress in as many fora as possible that it must be recognised that soils are a key component in the environmental system and that the soil must be understood and managed appropriately if we are to move towards sustainable development. As a counterpoint and an indication of the 'highs' I look to 'my own backyard' in the United Kingdom and Europe where soils have moved markedly up the environmental agenda. In England there will be a launch of the 'Soils Action Plan – 2004-2006' early in January 2004, this following an extensive consultation in which the Soil Science community have been actively involved. Moving to a broader European perspective, this year has seen the establishment by the European Commission of the 'Thematic Strategy for Soil Protection'. This is a major initiative which has identified the threats to soil and the importance of understanding the key role of soils in environmental systems. Winfried Blum and I, together with a number of Soil science colleagues from around Europe are actively involved in these activities as co-chairs of the Working Groups and there is strong participation from a wide range of members. We hope this recognition by the European Commission of the importance of soils as part of environmental management will be taken up by national, regional and global policy makers.

Looking forward to 2004 we have during late April our Inter-Congress Council Meeting in Philadelphia. This meeting which will give me another opportunity to meet colleagues, is a combination of Council Meetings, Meetings of Divisions and Commissions and Scientific Meetings. Full details may be found on the IUSS website. On the Council Meeting Agenda we have a number of important matters to discuss and to vote upon including the revised Statutes and Bye-Laws and the formation of new Commissions. We would also seek to open up a debate on how we should more strongly develop the links from individuals through national societies to IUSS. We must ensure that there is an efficient means of information flow in both directions if IUSS is to serve the needs of soil scientists globally. I would welcome any thoughts and comments you have (iuss@rdg.ac.uk) or alternatively pass these through to your Headquarters and have them present these ideas in Philadelphia. One other action at the meeting in Philadelphia will be to endorse your selection of President and Vice-President for the 2010 World Congress. The Bureau of IUSS look forward to working with your selections to ensure that the 2010 World Congress is a success.

Finally you would not expect me to sign off without thanking you for being such excellent hosts to the Rugby Union World Champions! I wish you all well in 2004 and look forward to maintaining and developing close ties with you all. A happy and successful 2004!

Stephen Nortcliff
Secretary General IUSS,
Department of Soil Science,
University of Reading, Reading, RG6 6DW, United Kingdom

IUSS Election (Australia) RESULTS

The ASSSI election for IUSS President Elect and Vice-President Elect to take office in 2006 (to 2010) has been completed and the successful team is:

**Professor Roger Swift (President Elect) and
Associate Professor Neal McKenzie (Vice-President Elect)**

Congratulations from ASSSI members and thank you to all of the candidates for their participation. 210 members of ASSSI voted in the election, all candidates polled well but the successful team had a clear majority vote.



ASSSI Awards

**ASSSI Website:
www.asssi.asn.au**

Call for nominations for 2004 ASSSI Awards

Nominations are now called for the following ASSSI Awards. Please refer to eligibility criteria in the ASSSI Constitution on the Web, and take note of the closing dates to prepare your submissions early.

Visit the ASSSI Website for eligibility criteria

ASSSI Publication Medal:

Closing date: March 31st 2004.

Committee: Dr Phil Smethurst (TAS), Dr Richard Bell (WA), Dr Heiko Daniel (NSW).

JA Prescott Medal:

Closing date: March 31st 2004.

Committee: Mr Col Ahern (QLD), Dr Aravind Suripaneni (VIC), Dr Christoph Hinz (WA).

JK Taylor Medal:

Closing date: March 31st 2004.

Committee: Dr Cameron Grant (SA), Dr Heiko Daniel (NSW), Dr David Jasper (WA), Mr Richard MacEwan (VIC), Dr Annie McNeill (SA).

CG Stephens Award:

Closing date: June 30th 2004.

Committee: A/Prof Neal Menzies (QLD), Dr Evan Christen (NSW), Dr Adrian Peck (WA).

Honorary Memberships (Life Member and Limited-term Member):

Closing date: September 30th 2004.

Committee: Dr Cameron Grant (President, SA), Prof Lyn Abbott (Past-president, WA), A/Prof Neal Menzies (Vice President, QLD).

NSW Branch Soil Photo Competition

The ASSSI NSW Branch has just concluded a soil photographic competition amongst NSW and ACT members. There were two categories: (i) Soils and Related Landscapes (Technical); and (ii) Soils and People. Within each category there were book voucher prizes to the value of \$200, \$100 and \$50. The competition was jointly sponsored by Environmental & Earth Sciences Pty Ltd. Judging criteria was based on overall interest and visual impact of the photo.

Jonathan Geay reported that over 60 fine photos were submitted and choosing the prize winners proved difficult. From a shortlist of 18, which were kept anonymous, the winning photos were voted on by all members present at the last General Meeting. The winning entries are presented below:

Soils and Related Landscapes (Technical) Category:



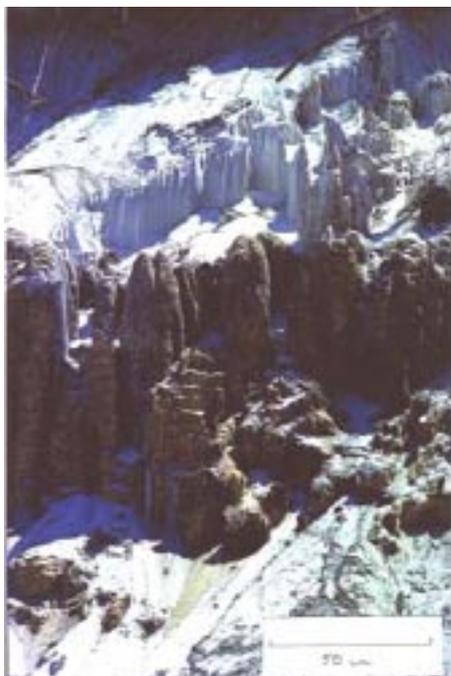
1st: Robert and Ann Young

Miocene lateritic profile, "not stratigraphic",
Ben Boyd National Park, NSW,



3rd: Chris Guppy

Cracking clays with dunes, Sossusvlei,
Namib Desert, Namibia



2nd: Robert and Ann Young

"Not snow on mountains". Well developed
Podsol with domed Bh horizon,
Salamander Bay, NSW

The NSW Branch Committee thanks all members who contributed to the competition.

Jonathan Gray
ASSSI NSW Branch Secretary

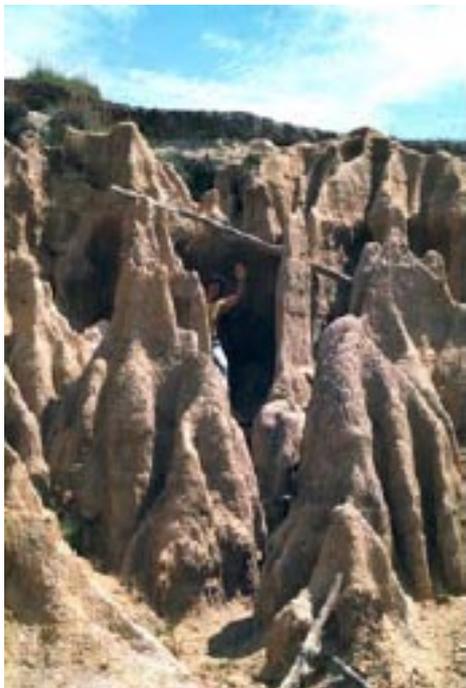
NSW Branch Soil Photo Competition

Soils and People Category:



1st• Stephen Cattle

“Pedological admirer over Red Chromosol”,
West Wyalong, NSW



2nd• Janet Wild

“Self portrait in Ghost Gully”, Tenterfield, NSW



3rd• Ben McDonald

“Two geophagists smell the bouquet of a Finnish acid sulfate soil” (Prof’s Ian White & Mike Melville), Finland

Congratulations to all the Winners
and
to the NSW Branch for this initiative.

Are the other Branches going to follow
the lead of the NSW Branch?

NZSSS/ASSSI Conference

5-10 December 2004

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ASSSI Strategic Plan 2002-2006

website:<http://www.asssi.asn.au>

“ASSSI promotes the field of soil science and its important relationship with wise management of the soil resource throughout Australia.”

What is ASSSI? The Australian Society of Soil Science Incorporated (ASSSI) was founded in 1955 to work towards the advancement of soil science in the professional, academic and technical fields. It currently comprises a Federal Council and seven Branches (Qld, NSW, Riverina, ACT, Vic, SA and WA). Liability of members is limited. Federal Council consists of: Federal Executive: President, Vice President, Secretary, Treasurer Branch Presidents, Newsletter Editor. An Executive Officer is employed by ASSSI to be responsible for dealing with membership issues, promotional material and administration of CPSS.

Accreditation for soil scientists is available: Certified Professional Soil Scientists (CPSS)

What does ASSSI do?

- Promotes soil science to the wider community as essential for natural resource management and production.
- Sets professional standards related to soil science.
- Provides a forum for wide debate of soil science issues.
- Provides opportunities for professional development in soil science.
- Coordinates a national focus on issues related to soil, its use and its management
- Provides leadership opportunities for members, including junior soil scientists
- Provides international links (IUSS) through participation in international meetings and initiatives related to research on soil, policy development and implementation
- Participates in policy development and debate related to soils in all environments in Australia
- Takes a leadership role in discussion on education and training related to soil
- Holds conferences (joint with NZ, national and local)
- Supports the bid for IUSS Conference in 2010
- Initiates seminars, workshops, field days, field trips
- Disseminates information - books, articles, affiliation with the Australian Journal of Soil Research

Enduring Outputs

Nationally recognised accreditation for practicing soil scientists
High profile of soil science in the community
High profile of soil science in environmental decision-making processes
High quality educational opportunities and support for students
Benchmarking with related organizations
Effective communication among members
Effective communication with stakeholders
Effective communication within the community
International links
Affiliation with other related organizations

Areas of strategic initiatives related to 6 key ASSSI objectives

1. To support initiatives which enhance the profile of soil science in Australia

- Accreditation of Soil Scientists (CPSS) • Educational materials • Public presentations
- Discussion with key government and industry sectors

2. To enhance expertise in soil science

- Development opportunities for junior soil scientists
- Seminars, workshops, training, field trips

3. To recognise excellence in soil science

- Medals for excellence • Student prizes and travel awards

4. To provide a forum for discussion

- Website, email, newsletter, seminars, conferences, workshops

5. To increase government and community awareness of soil science

- Media updates • Workshops

World Soil Day in South Australia - 5th December



The presentation of the Prescott Medal was followed by a special poster display held in honour of World Soils Day, December 5th. This was supported by six PhD students: Damian Adcock, Louise Clark, Warwick Dougherty, Sean Mason, Therese McBeath, and Ian Oliver; plus three postdoctoral fellows: Dr Kris Broos, Dr Dean Lanyon, and Dr Ron Smernik, all of whom outlined how their research is helping to solve international problems in soil science. The meeting concluded with refreshments around the poster displays.



Photos:

Above Left: Dr Cam Grant and Prof Sally Smith

Above Right: Dr Rob Fitzpatrick and Prof Malcolm Oades

Centre Left: Prof Malcolm Oades and Dr Geoff Baldock

Left: Dr Richard Merry and Dr Jock Churchman

New Members of ASSSI

Welcome to ASSSI

Ms Jane Aiken
University of Western Sydney
Richmond Campus
PENRITH SOUTH NSW 1797

Mr Kris Broos
CSIRO Land and Water
GLEN OSMOND SA 5064

Mr Dougal Currie
University of Adelaide, Waite Campus
Soil and Land Systems
GLEN OSMOND SA 5064

Ms Wendy Meech
WJB Consulting
ROSEWORTHY SA 5371

Miss Jeanene Thacker
MAIDEN GULLY SA 3551

Mr Mark Thomas
CRC Leme
CRAFERS WEST SA 5152

New members are invited to submit a brief outline of their interests for inclusion in the next edition of *Profile* (Due date: 15th March 2004)

***18th World Congress of
Soil Science
July 2006
Philadelphia, USA***

Visit the NZSSS Website
<http://nzsss.rsnz.org/>

THE EMAIL ADDRESS
FOR
ASSSI Executive Officer
Linda Bennison
is
asssi@bigpond.net.au

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WEBSITE
www.iuss.org***

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PROFILE BY
15th March 2004**

**to
organic@agric.uwa.edu.au**

**Include news,
thesis abstracts,
ideas,
information,
conferences etc.**

**NZSSS/ASSSI
Conference
5-10 December 2004
www.icms.com.au/supersoil
@ The University of Sydney**

PhD Thesis Abstract

Karen Smith

Title: The effects of properties of designed soils on growth of *Corymbia maculata*

Karen D. Smith

Supervisors, Dr Peter May & Prof Robert White, University of Melbourne

The establishment of urban vegetation has become more difficult as urban soils are disturbed or destroyed, and as post industrial sites are becoming used to develop public open space. This creates the opportunity to design soils for the establishment of specific vegetation types in the urban environment. There are little data on designed soils, their chemical and physical characteristics, or the growth responses of trees to them. In particular there are no data on growing Australian eucalypts in designed soils, particularly with respect to nutrition.

This thesis aims to use a single species (*Corymbia maculata*, Spotted gum) to assess growth responses to a range of nutrients and soil profile designs. It also aims to assess foliar nutrient responses to different nutrient regimes and profile designs, and to assess the suitability of the soil physical properties of the designed soils for tree growth.

To achieve these aims a factorial N:P:K structure was used to explore how tree shoot growth responds to the nutrient status of a designed soil. Shoot growth was analysed by examining shoot height, stem diameter and dry weight. In addition, foliar nutrient concentrations were used to explore shoot growth responses. Seedlings of *C. maculata* were grown in columns of fine sand, 220 in diameter, cut into 450 mm lengths, with a 150 mm surface layer amended with 0 or 5% by volume of coir fibre. The experiment ran for a 5-month period over spring and summer.

The fertilizer treatments were ammonium nitrate, superphosphate and potassium sulfate, applied to the soil surface. N was applied at rates of 0, 31.2, 62.5 and 125 g m⁻²; P at rates of 0, 12.5 and 25.5 g m⁻², and K at 0 or 50 g m⁻². Micronutrients were applied in the form of Micromax® at 0.8 kg m⁻³, and dolomite was added at 1.0 kg m⁻³.

A second experiment explored the hypothesis that tree shoot and root growth responds to variations in constructed profile design, and that a range of soil physical properties could be modified by the soil profile design. Factors explored were profile design, organic matter amendment and the concentration of organic amendment. Shoot growth responses, foliar nutrient concentration, and root length density were measured over a 5-month period during spring and summer. Soil physical properties were explored by measuring water release characteristics, bulk density, profile slumping, hydraulic conductivity and air-filled porosity. The designed soils were composed of sand and coir, sewage sludge or green waste mixed into the sand at a rate of 0, 5, 10 or 20% by volume. The profiles were either layered, with a surface 150 mm organically amended layer, or non-layered, with uniform organic amendment down the profile. Fertilizer was applied in a slow release form, at a rate of 98 g N m⁻², 8.5 g P m⁻², and 0 or 34 g K m⁻², at planting and after 3 months. Micronutrients and dolomite were also added, at the rates mentioned previously.

Tree shoot growth responded to the nutrient status of the designed soil, and shoot and root growth responses responded to differences in profile design and organic amendment. Foliar nutrient analysis, in conjunction with growth responses, was found to be a reliable way of assessing the nutrient status of *C. maculata* growing in designed soils. Shoot growth responded strongly to the interaction between N and P application, but showed no response to K. Organic matter increased the nutrient status of a uniformly amended profile, stimulated root growth, decreased bulk density and improved total porosity. Organic amendment increased the biological activity of the soil and improved soil structure.

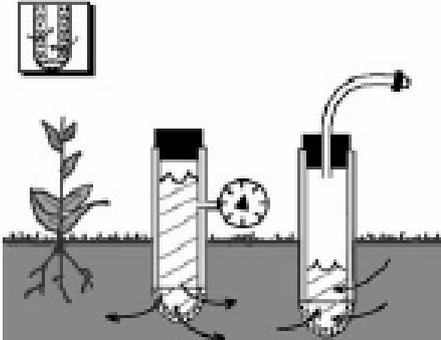
Profile design had a major influence on shoot growth, and root length density and distribution. Trees growing in uniformly amended profiles had greater shoot growth, higher root length density, and a uniform distribution of roots down the profile. Root growth also had a significant effect in improving soil structure.

The physical properties of the designed soils (layered or non-layered) were found not to limit shoot or root growth. Bulk density decreased with organic amendment, total porosity increased, and slumping of the profiles was minimal. Air-filled porosity was adequate for at least 2/3rds the length of all the designed profiles. The water release characteristics showed that organic amendment increased the water holding capacity of the soil. However, the available water capacity was relatively low. Hence these designed soils would require frequent irrigation. Amendment with 20% by volume of organic matter gave the highest available water capacity.

Composted sewage sludge and green waste were found to be the most chemically stable for organic amendment, with C:N ratios of 14. Coir had a C:N ratio of 108 and so was low in available nitrogen, which helped explained the low shoot and root growth compared to sewage sludge and green waste. Organic amendment at the 20% level did not lead to anaerobiosis in the uniformly amended profiles. For the best tree growth responses, uniformly amended profiles of composted sewage sludge and green waste, and coir are recommended at rates of 20% by volume.



Soil Moisture and Soil Solution Sampling for Waste Water Management



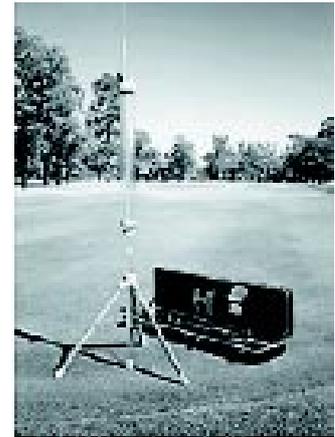
Suction Lysimeter or Soil Water Sampler

Obtain a sample of soil water from the surrounding soil for nutrient monitoring and analysis.

Guelph Permeameters

Easy to use instrument to measure in-situ hydraulic conductivity. Determine maximum effluent disposal rates.

- septic system design
- irrigation and drainage planning
- soil survey



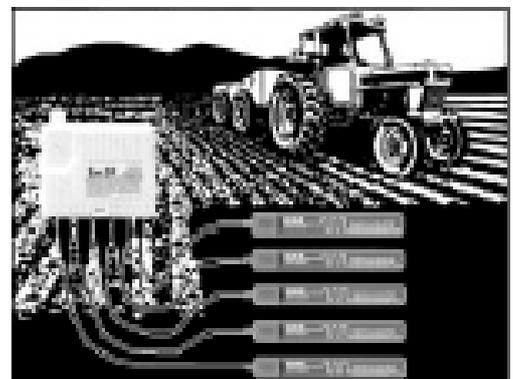
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- determine tree water use for appropriate land development
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Developments in Acid Sulfate Soils

Acid sulfate soils (ASS) and their management continues to be an area of considerable interest to soil scientists, developers, local councils and government agencies in coastal regions of Australia. In Queensland, where there is an estimated 2.3 million hectares of ASS, the Department of Natural Resources and Mines (NR&M) has responsibility as the government's lead agency to provide advice and information on these potentially damaging soils. To this end, the Department, in collaboration with other stakeholders, is in the process of progressively developing the *Queensland Acid Sulfate Soil Technical Manual*.

The aim of the *Queensland Acid Sulfate Soil Technical Manual* is to provide technical information and guidance on a range of ASS issues; when complete, the Manual will include chapters outlining legislation and policy relevant to acid sulfate soils, updated soil sampling guidelines, soil treatment and management, acid sulfate soil laboratory methods, water treatment and management, environmental management plans, industry guidelines and remediation guidelines. It is expected that the Manual will be used by the development, agricultural, fisheries, extractive and waste management industries, land managers from local and state government, conservation groups and other relevant community organisations.

The *Soil Management Guidelines* chapter was released in November 2002 and is available for download from www.nrm.qld.gov.au/land/ass (then click on Publications and Products). The *Soil Management Guidelines* provide clear guidance on acid sulfate soil management strategies to assist in achieving best practice environmental management when disturbing these soils.

The chapter dealing with legislation and policy relevant to ASS (*Legislation and Policy Guide*) is currently in draft form and was sent out for public comment in October 2003. Comments received are currently being reviewed and this chapter will be finalised early in 2004.

The first draft of the *Laboratory Methods Guidelines* chapter (for dried samples) was sent out for public comment in August 2003. Once comments and changes are incorporated, the chapter will be re-distributed for further comment, before finalisation of the chapter in early 2004.

Chemical methods for analysing ASS has been (and continues to be) the subject of concerted research by soil scientists in Australia. As part of the process of developing the *Laboratory Methods Guidelines*, (which are being prepared under the auspices of NatCASS, the National Committee for ASS, and are likely to be adopted by the eastern mainland states as well as Western Australia), there has been a concurrent process in collaboration with Standards Australia where Australian standard methods for the chemical analysis of ASS are also being prepared. The Standards Australia sub-committee [comprising Associate Professor Leigh Sullivan (Southern Cross University), Col Ahern and Angus McElnea (NR&M), Ian Wallace (Australian Laboratory Services) and Dr Steve Dobos (Dobos & Associates)] is chaired by Glenn Barry (NR&M) and sits under the umbrella of Standards Committee EV-009 (for the *Sampling and Analysis of Soils and Biota*). Associated with the Methods Guidelines/Australian Standards process will be a laboratory sample exchange program aimed at improving the proficiency of laboratories at performing these methods, and hopefully providing a range of certified reference materials (CRM's), something that is conspicuously missing for ASS.

To obtain a copy of either draft chapter, please contact Kristie Watling, NR&M Indooroopilly, kristie.watling@nrm.qld.gov.au

New Phone and Fax Numbers for ASSSI Office:

ASSSI Office phone 03 5622 0804
 fax 03 5622 0806



New AJSR Website details:

AJSR Webpage
<http://www.publish.csiro.au/nid/84.htm>

AJSR Contents page
<http://www.publish.csiro.au/nid/85.htm>

News from the Queensland Branch of ASSSI

Since the last Federal Council meeting, we have held two OGMs. In October, we heard from two quite diverse speakers - Dennis Baker on the topic of artificial soils, potting media and sporting fields, and Sgt Al Piper on soils aspects of forensic science. A lively discussion followed the speakers, in which the topic of soil science standards was pre-eminent (Dennis touched on this in his talk), and noted as a matter of importance for the society to deal with. The annual undergraduate awards night has been held recently in which the best student from each of the Queensland universities with a soils degree present their work.

News from the Riverina Branch of ASSSI

The 2002 John K Taylor Gold Medal in Soil Science was presented to David at a recent meeting of the Riverina Branch held at Wagga Wagga. Branch President, John Thompson, presented the award on behalf of the Federal President (on behalf of a member of the family of J K Taylor). This medal is awarded for excellence in both research and its communication. It is awarded by a national committee at 2 year intervals. Dr. David Strong was awarded the medal for his work on the physical microstructure of soil and its impact on microbial processes (primarily nitrogen mineralisation and nitrification). The work was published in a series of papers (5) in AJSR vol. 36 and 37. (More photos on Page 18)



David Strong with other ASSSI members at the Riverina Branch Presentation of the JK Taylor Medal (See also Page 18)

News from the NSW Branch of ASSSI

SuperSoil 2004 Conference: Progress towards the December 2004 joint ASSSI/NZSSS conference is well under way. Graeme Tupper received advice from Australia Post regarding his proposal for an "Eminent Soil Scientist" stamp issue to coincide with the Conference. However, this is not possible as it is now too late for 2004 and attendance by a Head of State is required. We will aim for a 2010 stamp release. *This should be raised with Federal Council.*

New England Excursion: Planned for Thurs 4 to Sat 6 March 2004.

State Soil: The deadline for nominations had been extended to mid November. Approx half a dozen formal nominations have been received, in addition to those suggested in earlier member responses.

ASSSI Constitutional Issues: Greg Chapman reported on current situation being discussed by Federal Council.

NSW Branch Website: The Federal website has changed, most of us don't like the new style, being rather dark and gloomy. We are proposing a NSW Branch web page within the ASSSI web page.

Annual Branch Lecture: Greg Chapman is proposing an annual Branch Dinner and Lecture, as they have in Queensland and Victoria.

News from the SA Branch of ASSSI

The SA Branch held its AGM on Fri Dec 5th 2003 at the Charles Hawker Conference Centre, on the Waite Campus, Urrbrae, South Australia. Dr Annie McNeill, (acting) Branch Secretary, minuted the proceedings. Thirty-two people attended, including two guests: Ms Kate Prescott and Ms Anne Prescott, granddaughters of the late Professor J.A. Prescott. The outgoing (acting) SA Branch President, Dr Cameron Grant, reported on the activities of the Branch over the last 3 years, and spoke about the increasingly professional approach to soil science that the Society is taking. The SA Branch Treasurer, Mr Bernie Zarcinas, presented the audited financial statements and indicated the finances are in good shape for future activities. A report on the financial status of the JK Taylor Trust Fund was presented by one of the Funds' Trustees, Mr Cedric Wells (other Trustees include Dr Jock Churchman and Mr Malcolm Wright). The new SA Branch Executive was elected unopposed, including: President: Dr Jock Churchman, Vice President: Mr Warrick Dougherty, Secretary: Dr Tapas Biswas, Treasurer: Mr Bernie Zarcinas (contact details at end of *Profile* 136). The J.A. Prescott Medal of Soil Science was presented to Professor J. Malcolm Oades by two of Prescott's granddaughters, Ms Kate and Ms Anne Prescott (see photos). The presentation was followed by a special poster display held in honour of World Soils Day, December 5th. This was supported by six PhD students: Damian Adcock, Louise Clark, Warwick Dougherty, Sean Mason, Therese McBeath, and Ian Oliver; plus three postdoctoral fellows: Dr Kris Broos, Dr Dean Lanyon, and Dr Ron Smernik, all of whom outlined how their research is helping to solve international problems in soil science. The meeting concluded with refreshments around the poster displays.

News from the Victorian Branch of ASSSI

Leeper Lecture (see Page 17)

2003 GW Memorial Lecture by Prof RE White was well attended like every year. This year's highlight was live transmission to Tasmanian members. Nine people attended the lecture at the University of Tasmania's north west centre in Burnie. They represented organisations from across the north west of Tasmania. (See Report on Page 17) Nominations for the 2004 Lecture will be called in shortly.



Dr Aravind Surapaneni, President of the Victorian Branch (left), with Dr Nick Uren, Prof. Robert White and Prof. Bob Richardson, Dean of ILFR at Melbourne University (right) enjoying refreshments in the Systems Garden after the Leeper Lecture.

Dr Aravind Surapaneni congratulates Ms Gemma Hamilton for winning the Frank Gibbons Award (below).

Frank Gibbons Award

At the conclusion of the G.W. Leeper Memorial lecture, a commemorative prize was given in honour of Frank Gibbons, an outstanding and well-respected Victorian pedologist. This award is offered annually for a student essay of high scientific merit and relevance to soil science. This year the prize was granted to Ms Gemma Hamilton from Monash University for her essay entitled: "The effects of fire of different intensity and frequency on soil properties in both the short-term and long-term".

The Award consists of a two years subscription to the Australian Society of Soil Science Inc. and \$250 cash



News from the WA Branch of ASSSI

A joint seminar between ASSSI and the Centre for Land Rehabilitation, UWA on *Field Identification and Testing of Acid Sulphate Soils* was held at UWA on 14 November, 2003. Thirty attendees heard Steve Appleyard, Phil Mulvey and Bob Gilkes describe the theory and practical implications of acid sulphate soils on the Swan Coastal Plain in the lecture theatre, laboratory and field.

The final draft sections of the *Soil Reference Book* have been prepared and is on schedule for the second printing to occur in 2004.

The G.W. Leeper Memorial Lecture 2003

by David Burrow

Introduction

Approximately 75 Victorian scientists gathered together on Friday 21 November 2003 for the annual Leeper Memorial lecture and were served a diet of thought-stimulating words and graphical images by Prof. Bob Richardson, Dr Nick Uren and Prof. Robert White. The Victorians were joined by approximately one dozen Tasmanian soil scientists via video linkup with careful orchestration from Drs Aravind Surapeneni (chairman) and Tony Weatherly (trans-Tasman video producer). As usual, the diet of words was well washed-down after the lecture with fine food, wine and a later meal at the local *Il Vicolo* restaurant. The messages communicated during the formal speeches were sometimes humorous, but more often left the listener introspective – questioning the wisdom of our scientific forbears and peers, or defensive – questioning the set of necessary assumptions underlying the models and concepts alluded to in the memorial lecture.

A memorial to Prof G.W. Leeper – Dr Nick Uren

In an introductory and frequently humorous talk, Nick Uren outlined his association with Prof Geoffrey Leeper, firstly as a PhD student at Melbourne University and then later as a colleague – despite Nick's assertion that the relationship was always that of master and student. Nick showed the audience projected images of Leeper's letters and described their frequent discussions of politics, University life, farming practices and of course, soil science. We learnt that Geoffrey Leeper was not a "greenie", nor a Marxist – having been immunized from this popular brand of University politics following a full reading of *Das Kapital* at the age of 30. The audience was left with the strong impression that Geoffrey Leeper possessed a passion and penchant for numerous "intellectual" topics, a fearless logic and a desire to see his students do their best – aided by regular personal meetings covering well-defined topics.

The 12th annual Leeper lecture – Prof. Robert White

Prof Robert White delivered the 12th Annual G.W. Leeper Memorial Lecture entitled "What has soil got to do with water?" In just over 40 slides, we were inducted into thinking about water resource management by "bio-physical" landscape management - while not disregarding the social implications associated with attempts to harvest more water from the land.

Robert began by describing the current media battle – with each media conglomerate seeking to portray the most despairing picture of Australian rivers. However, deficiencies exist in the current debate about the health of Australian rivers. These deficiencies hinge on the dominance of engineering solutions (regulating flow) rather than bio-physical solutions and the paradox that although there is too little freshwater available in rivers, in many regions there is too much groundwater available. The catch is that much of this readily available groundwater is saline.

Robert then outlined the basic pathways for water flow over and through soil, showing the large variability in dominant pathways for different soil types and landscapes. For example, soils with surface crusts or duplex character were likely to have less partitioning of water to groundwater and more to overland or subsurface lateral flow. However, the greater risk was portrayed for the more permeable soils where accessions to groundwater have led to raised watertables, salt mobilisation and slow soil salinization.

The response to land salinization, driven in part by CSIRO modelling efforts in the 1990's and taxation offsets, was tree plantation. The tragedy of such a response was that plantations were often established on the profit motive rather than for environmental benefits. The result was inappropriate planting of trees in the fertile soils of the high rainfall zones, usually in close proximity to paper mills. The extent of this planting in the high rainfall, upper catchment zones was sufficient to reduce yields of water and its availability for farmers lower in the catchment. In Robert's words, the "profit motive has knock-on effects...for the environment".

With the advent of the Murray-Darling Basin "Cap" on irrigation allotments (based on the level of irrigation development in 1993-94) the monetary value of water has increased and the search for new water resources has become more important. Based on the work of the "Sustainable Grazing Systems" modellers, Robert then argued that water harvesting can be increased (or decreased) by strategic allocation of vegetative crops or trees to certain soil types at different positions in the catchment. The aim being to partition water in a specific area either towards runoff (to replenish water storages) or adequate supply of crop demand for a particular soil type. The role of densely planted trees in this study was critical for control of deep drainage and long-term control of potential soil salinization. Similarly, the degree of plant "perenniality" was inversely related to average water surplus generated from runoff at a particular site.

The optimisation of land use for water harvesting and salinity control is very important if the projected impact of climate change reduces water availability over the next few decades. However, one of the biggest challenges, as suggested by Robert, will be to ensure the adequate management of the socio-political changes associated with land and water use optimisation since these changes would need to extend across over whole catchments and even across state borders.

Prof White's lecture was a salutary reminder of the range of broad-scale problems facing Australian soil scientists in the future. Although the talk focussed on water and salinity issues, it is also likely that other issues such as erosion and nutrient movement will need to be included in general landscape-water harvesting models. Future work will also need to include a detailed analysis of runoff patterns from the mountain and alpine regions, and the relationships between these patterns and engineered storage structures.

Professor Malcolm Oades - 2003 Prescott Medal



Professor Malcolm Oades had a distinguished career as a soil scientist, mainly at The University of Adelaide. Appointed as a lecturer in soil science in 1963, he played a major leadership role in developing soil science as an independent discipline at the University, and became the first Head (later Professor) of the Department of Soil Science, established in 1977. He was instrumental in launching the first successful bid for a Cooperative Research Centre (in Soil & Land Management) and in establishing the Soil & Water Environs on the Waite Campus, to co-locate researchers in The University of Adelaide with collaborators in CSIRO Land & Water, and the South Australian Department of Primary Industries & Resources (PIRSA and SARDI). In addition to his roles in research and leadership he was a valued teacher of undergraduate and postgraduate students in soil science across Australia and internationally. From 1995 until his retirement in 2001, he served as Dean for the University of Adelaide's Faculty of Agricultural & Natural Resource Sciences and as Director of the Waite Agricultural Research Institute.

In his research, Malcolm Oades made important contributions to the fundamental knowledge of the interactions between mineral colloids and organic matter and how these control the properties of soils. His work has important implications for understanding water and nutrient availability for agricultural crops and for developing sustainable practices to protect Australia's fragile soils. His work also has broad implications for managing the quality of our drinking water by managing the colloids in the catchments surrounding water reservoirs.

He supported his group's research by obtaining substantial and continuous funding from the Australian Research Council, the Grains Research & Development Corporation, the Australian Wool Corporation, the South Australian Department of Engineering and Water Supply, SA Water, and other sources. With collaborators he established the solid-state NMR facility on the Waite Campus of the University of Adelaide, which was the best such facility in the southern hemisphere for studying soils and arguably one of the best in the world.

His work was published between 1963 and 2001, in approximately 170 refereed papers, book chapters and invited reviews. In 2001 he was awarded the ISI®-Citation Laureate Award which recognized his authorship of multiple high-impact papers during the period 1981 to 1998.

Malcolm Oades contributed to research & teaching in soil science in three main areas: 1. Aluminium and iron oxides, properties of colloid surfaces and organic matter. 2. Organic matter and soil aggregation, and 3. Fractionation of soils; using ¹³C-NMR spectroscopy to study soil organic matter. In addition to his three main areas of research, Malcolm Oades published extensively on topics such as: phosphorus in soils and the mechanisms by which it is mobilized in the landscape; soil development, particularly of fragile red-brown earths, influence of soil properties and management on water quality in reservoir-catchments; and causes and remediation of non-wetting soils.



Prescott Medal



JA Prescott

David Strong: 2002 Publication Medal Recipient



David Strong receives medal from Dr John Thompson (President Riverina Branch ASSSI)



PhD Thesis Abstract

Abstract from PhD thesis "Mobility of colloids in soils" by Angela G. Noack (2003)
University of Adelaide

Mobile colloids in the landscape have implications for soil and water quality, contaminant transport and how ecosystems function, yet the factors controlling their transport through soils are poorly understood. The objective of this project was to evaluate the factors controlling colloid mobility through soils and relate these to what may occur in the natural landscape.

Laboratory experiments passed illitic clay suspensions through stable soil columns under near-saturated conditions and showed that colloid mobility was directly related to the relative sizes of the soil pores and mobile colloids, which suggested a mechanism that may apply in the natural landscape.

Further column experiments evaluated chemical and hydrological factors by leaching dispersive soils with water or salt solutions, then drying and further leaching them with water. The total cation concentration plus the total amount of sodium added were found to be the primary chemical factors generating colloids. Cycles of wetting and drying, or wetting and draining indicated that wetting after a drying cycle usually generated colloids, and that continued addition of water resulted in a marked decline in colloids. When the columns were drained (rather than dried) and then leached again, the concentration of colloids exceeded that produced initially from the dry state. The transport of colloids was thus limited by their diffusion to the conducting pores. Sodium-treated soils generated more colloids than Ca-treated soils, which suggested that in mildly-sodic landscapes exposed to successive periods of rainfall and drainage without drying (Mediterranean winters), mobilized colloids may be readily flushed from the landscape.

The role of wetting and drying cycles in the gradual formation of argillic B-horizons was examined by repeatedly wetting columns to a specific depth before drying them. A zone of modest clay accumulation was observed after only 25 cycles of wetting and drying in a coarse-textured soil.

It became clear that factors influencing colloid mobility cannot be considered in isolation from one another; physical, chemical and hydrological factors are all important and they operate by interaction. A constraint to the movement of dispersed colloids through soils appears to be their diffusion into paths of transport where they can be flushed from the soil.

The work reported here, albeit based entirely on re-packed soil columns, will support efforts to evaluate the potential of different landscapes to generate mobile colloids and thereby restrict their movement.

Papers from thesis so far:

Noack AG, Grant CD, Chittleborough DJ 2000. Colloid movement through stable soils of low cation exchange capacity. *Environmental Science & Technology* **34**, 2490-2497.

Waters AG, Chittleborough DJ, Grant CD, Oades JM 1998. The generation and mobility of colloids in soils. IUSS Congress, Montpellier, France. August 1998. Symp No.4, CD ROM Whole Paper No.1112 (7 pages); Abstracts Vol.1, p.89. International Soil Science Society.

Waters AG, Grant CD, Chittleborough DJ, Oades JM 1998. Diffusion-limited colloid transport during unsaturated flow in aggregated soil. Proc. Austr. Soc. Soil Sci. Nat. Soils Conf. pp. 355-360. Brisbane. 27-29 April 1998.

Waters AG, Chittleborough DJ, Grant CD, Oades JM 1996. The role of particle size in the mobility of colloids through the soil. Proc. Austr. NZ Nat'l Soils Conf. Vol. 3 (Poster Papers) pp 271-272. Melbourne, July, 1996.

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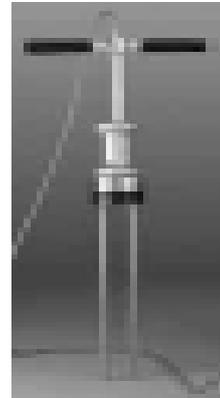
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ASSSI Submission to:

House of Representatives Inquiry into Coordination of the Science to Combat the Nation's Salinity Problem

Introduction

The Australian Society of Soil Science Inc. (ASSSI) believes that soils play a central role in the manifestation of salinity problems. Soils moderate the hydrology of the landscape, they store salt and can be managed in ways that minimize its movement through runoff and deep drainage. Soils can also control the plant species that thrive in regions of water re-charge and discharge in the landscape. ASSSI believes a good understanding of soil science and its related disciplines (e.g. hydrology, ecology, plant physiology and genetics) in the Australian environment are crucial tools for solving our country's salinity problems. Our members are nationally and internationally recognised for their work on salinity, and are employed variously by universities, government agencies, as well as by community- and private-sector organisations. Among other things, they engage in research, communication, policy-development and regulation of science related to saline soils. Many of them are professionally accredited through the Certified Professional Soil Scientist (CPSS) scheme, and as such, they are in an excellent position to provide input to this House of Representatives Inquiry. Information about ASSSI is listed on the web: <http://www.asssi.asn.au/asssi/flash/>.

The President of ASSSI, Dr Cameron Grant (University of Adelaide), invited key members of the Society to provide feedback using the Terms of Reference from the Inquiry Information. Contributors were asked to focus particularly on the coordination of science associated with Australia's salinity programs. All feedback was coordinated by Mr Adrian Webb (Webbnet Land Resource Services Pty Ltd, Queensland) and evaluated by the Federal Council of ASSSI prior to submission. Our comments on the Terms of Reference conclude with five recommendations in bold-face print as follows: ASSSI recommends...

The Society thanks the House of Representatives Standing Committee on Science and Innovation for giving us the opportunity to provide input to this inquiry, and if its members have questions about our submission, we invite them to contact either the President of ASSSI, or the coordinator of this submission (contact details below):

Dr Cameron Grant (ASSSI President)

School of Earth & Environmental Sciences, University of Adelaide, Waite Campus
PMB No.1 Glen Osmond, SA 5064.

Ph. (08) 8303 7404; Email: cameron.grant@adelaide.edu.au

Mr Adrian Webb (Coordinator of this Submission)

Webbnet Land Resource Services Pty Ltd
65 Savages Rd, Brookfield QLD 4069

Ph. (07) 3374 2686, 0412 672 283; Email: adrianwe@msn.com.au

CDG. October 31st 2003 Term of Reference a)

[Use of the salinity science base and research data (including the development of new scientific, technical and engineering knowledge) in the management, coordination and implementation of salinity programs.]

A. Issues related to Strategic Management

As noted in the explanatory documents for the Inquiry, salinity is a complex issue that requires knowledge and understanding of a wide range of sciences reflecting the different components of the landscape and how it is used. Soil science and hydrogeology are key disciplines that underpin research into the evaluation of management options, and these are affected by: A critical mass of people engaged in the disciplines of science, its communication and policy-development.

Development and maintenance of corporate knowledge.

Collection and maintenance of data.

An environment of co-operation (versus competition) among government departments, scientists, communicators, and policy-makers.

A critical mass of people:

A competent science-base requires a critical mass of people in related disciplines. This has been significantly depleted over the past several years across Australia in our universities, government agencies and in private/community organisations. The depletion of expertise has resulted in a loss of capacity to respond to strategic threats such as the spread of salinity at a time when natural resource scientists are desperately needed to manage these problems.

It is typical of State-government agencies to re-allocate staff to (often disjointed) projects receiving external funds, which last for only between 2 and 5 years. As an example, many of the salinity extension-staff in New South Wales are funded only until the end of 2003. Similarly, the Queensland Department of Natural Resources & Mines has gradually cut its salinity staff to the point where there remain only a handful of scientists for the whole of Queensland. Funding cuts, re-allocation and departure of staff invariably deplete the critical mass of valuable experience and knowledge gained during periods of short-term funding.

These cuts highlight our nations' failure to recognize the need for a long-term critical mass of scientists engaged in research to help governments and communities fight salinity.

Continued on Page 21

ASSSI Submission to:**House of Representatives Inquiry into Coordination of the Science to Combat the Nation's Salinity Problem** *Continued from Page 20.*

The development of regional bodies under the National Action Plan for Salinity and Water Quality (NAPSWQ) has done little to resolve this problem, particularly because many of the staff employed by regional bodies are extension officers rather than scientists. Because they are employed on short-term contracts (typically < 2 years) they are often inexperienced and must be trained in the broad range of natural resource systems (often across large geographic regions). For this reason, they are often unable to contribute much before their positions are terminated.

A nation-wide casualty of the short-term nature of funding arrangements is often the transfer and application of knowledge and skills in the areas of salinity risk-assessment and land-use change. There is a critical shortage of specialists, for example, with skills in landscape analysis and the application of geophysical data (e.g. airborne radiometrics, magnetics, and electrical conductivity). An understanding of how these data sets can be used to develop frameworks to assess, monitor and evaluate changes to land use is crucial – this requires a long-term commitment to the development of a critical mass of trained people.

Development and maintenance of corporate knowledge:

A critical mass of trained people has the responsibility to maintain the so-called 'corporate knowledge'. In relation to salinity, much of this is 'grey knowledge' (i.e. that which accumulates over time through research, field observation, and through communication with colleagues and landholders). Data about salinity tells only a small portion of the salinity story. The power of good science lies in its ability to evaluate the relevance of information, to place it in context, and to convert data into useful strategies for making decisions about land management and risk assessment.

Collection and maintenance of data:

The science to combat salinity is only as rigorous as the data that underpins it. A significant amount of this data has been lost due to declining numbers of research staff caused by regular shifts in government funding. Two key issues concern the maintenance of existing (historic) databases and the ongoing collection of new data. Failure of our nation to recognise the value of key salinity-databases as scientific tools will significantly hinder the science that underpins our dispersed salinity programs. As only one example, the assessment of the condition of our natural resources and land-use-change was severely constrained by the lack of current and historical data used by government agencies in preparing the National Land & Water Resources Audit in 2001. The Audit in relation to salinity was based upon incomplete, disjointed and partial sets of data, and so in many respects is not very useful.

An environment of co-operation:

Good science requires an open, sharing environment. The increasingly competitive environment for funding has hampered collaborative research efforts among scientists in CSIRO, State-government departments, and universities (although there are notable exceptions to this, particularly where funding is not a central factor). We must recognise the benefits that result from collaboration among different research bodies to develop skills and data to maintain the long-term knowledge base in the nation's salinity and water quality problems. An environment of co-operation will be essential for the success of, for example, the NAPSWQ.

B. Issues related to Delivering Information

All regions of Australia possess unique characteristics that are the major driving factors for salinity (e.g. climate, landscape and hydro-geological characteristics). Information from salinity research therefore needs to be packaged and developed for different regions, and this is not being done properly.

For example, the outputs from the NAPSWQ are currently being delivered to regional groups, which have responsibility for planning and coordination of activities. These regional groups, however, have inadequate scientific training and increasingly must rely on expertise, advice and recommendations from CSIRO Land & Water, State agencies, which are decreasingly supported to do this kind of work.

The National Dryland Salinity Program (NDSP) has attempted to provide relevant scientific information to regional groups and State agencies, but to date this has been only variously successful. Some material from the National Land & Water Resources Audit (NLWRA) and its on-line version, the Australian Natural Resources Atlas (ANRA), has been incorporated into the communications program of the NDSP, but we are aware there is a lot more material (used to prepare the NLWRA and ANRA) which has NOT been made available. This material, which is highly relevant to managing dryland salinity needs to be uncovered and made accessible. Another important output from the NDSP was an evaluation of how data from airborne geophysics can help to produce maps of salinity risk assessment. A cost-benefit analysis of airborne geophysical data is also available, but little of this has been promoted to potential users. An evaluation of the methods currently used to assess and map salinity is being undertaken for the Department of Agriculture, Fisheries & Forestry Australia (AFFA) and Environment Australia (EA), and this may provide an objective assessment of the utility of airborne geophysics. We recommend these findings be widely promoted when they surface.

Continued on Page 22

ASSSI Submission to:

House of Representatives Inquiry into Coordination of the Science to Combat the Nation's Salinity Problem *Continued from Page 21.*

C. What about an Australian Centre for Salinity Research?

As indicated in the Introduction, combating salinity requires an understanding of soil science, hydrology, ecology, plant physiology and genetics in the Australian environment. However, knowledge is being pursued in only some of these areas, and in those – only partially. For example, most research currently focuses almost exclusively on dryland salinity (i.e. that induced by shallow water tables – where up to 16% of the dryland cropping areas may be affected by 2020). Even here there is a great lack of scientific knowledge on dryland salinity, particularly in relation to how hydrogeological characteristics of the regolith of major landscapes (at an appropriate scale) can be used to manage salinity in whole-catchments. Furthermore, many soils used for cropping and grazing have salt-levels in the root-zone that restrict plant production. This is sometimes called “transient salinity” (Rengasamy 2002; Fitzpatrick et al. 2003), and may affect up to 67% of our cropping areas and cost the Australian farming economy up to \$1.3 billion annually.

To deal with these Australia-wide problems, it has been proposed that Australia consider the USDA-ARS model (United States Salinity Laboratory, USSL) and develop a Centre of Excellence in Salinity that could coordinate efforts to combat salinity nationwide, particularly in relation to the science required. The CRC for Plant Based Management of Dryland Salinity currently occupies this role, but its funding needs to be substantially enhanced to cover all the issues that the USSL covers. Such an organisation could create links with people conducting related research (e.g. on soil acidification, which is increasingly linked to salinization in Australian landscapes).

ASSSI recommends:

The Commonwealth & State governments consider establishing longer term funding arrangements for salinity programs (eg. ≥ 5 years). This will avoid losing data and corporate knowledge about salinity and its management.

The Commonwealth government consider establishing an Australian Centre for Salinity Research (ACSR) with a mandate along similar lines to that of the USSL. The ACSR could organize regionally specific research and management strategies as required across Australia.

NEW MEMBER PROFILE Nathan Robinson - Bendigo, Victoria

Primary Industries Research Victoria

Background: I have been working for the Department of Primary Industries Bendigo for over four years as a Land Resource Assessment/Enhanced Resource Assessment Officer. This position has required me to take on a variety of roles, from soils analysis and field collection, GIS analysis and processing, mapping and analytical processing, management and conferencing with stakeholders and clientele, report preparation and presentation.

This follows study in Applied Science (Geology) at the University of Ballarat in 1997, undertaking further studies and completing honours in 1999. Currently I am completing studies in GIS and remote sensing (Grad. Dip.) as well as business management.

Qualifications: 1994 –1997 Bachelor of Applied Science (University of Ballarat)

1998 – 1999 Bachelor of Applied Science (Hons.) (University of Ballarat)

Thesis title: *Soils of the Bulart Land Management Group, Eastern Dundas Tablelands, Western Victoria.*

Areas of study: Geographic Information Systems.

Soil mapping and sampling, Soil attributes (nutrition, physical properties eg. field texture, organic matter), Radiometrics and Magnetics, Integration of remote sensing techniques, Soil salinity and acidity, Laboratory procedures and findings.

2002 – current Graduate Diploma of GIS and remote sensing (Charles Sturt University)

Current Certificate IV in Business Management (Bendigo Regional Institute of Tafe)

Areas of expertise in soil science:

Soil and landscape mapping, regolith mapping and land use capability/suitability, Enhanced Resource Assessment processes (ie. Spatial modelling, geostatistical analysis), Project management and mentoring, Report writing (Lake Eppalock, Goulburn Broken and Glenelg Hopkins reports), Soil analysis (chemical and physical properties), Geographic Information System analysis/manipulation, computer programming and data management, Digital elevation modelling, Regression modelling (ie, polynomial, power, linear, exponential, logarithmic and moving average methods), Geophysical interpretation and processing (e.g. radiometrics, magnetics and gravity), Image processing (Imagine 8.6) / ENVI 3.6, Geology and geomorphology

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New AJSR Website details:

AJSR Webpage

<http://www.publish.csiro.au/nid/84.htm>

AJSR Contents page

<http://www.publish.csiro.au/nid/85.htm>

Do you know your ASSSI Federal Executive?



ASSSI Federal Executive 2003-2004

President:	Dr Cameron Grant (SA Branch)
Vice President:	A/Prof Neal Menzies (Qld Branch)
Secretary:	Dr Annie McNeill (SA Branch)
Treasurer:	Mr Keith Lindbeck (WA Branch)
Newsletter Editor:	Prof Lyn Abbott (WA Branch)

*See Page 35 for
Contact details*

Branch Presidents are also members of Federal Council

Queensland:	Mr Andrew Biggs
New South Wales:	Mr Greg Chapman
Riverina:	Mr John Thompson
Victoria:	Dr Aravind Surapaneni
South Australia:	Dr Jock Churchman
Western Australia:	Dr Andrew Harley
Tasmania (observer)	Dr Philip Smethurst
AJSR Representative	Dr Andrew Rate

Federal Council Meetings in 2004

FC No 216	Friday February 6th (1pm WST; 3:30pm CDT; 3pm EST; 4pm EDT)	teleconference
FC No 217	Friday March 12th (1pm WST; 3:30pm CDT; 3pm EST; 4pm EDT)	teleconference
FC No 218	Friday May 7th (1pm WST; 2:30pm CST; 3pm EST)	teleconference
FC No 219	Friday July 2nd (1pm WST; 2:30pm CST; 3pm EST)	teleconference
FC No 220	Friday Sept 3rd (1pm WST; 2:30pm CST; 3pm EST)	teleconference
FC No 221	Friday November 5th (1pm WST; 3:30pm CDT; 3pm EST; 4pm EDT)	teleconference
FC No 222	Sunday December 5th (1pm EDT)	in person, Sydney

ASSSI Federal Council Meeting 214

Australian Society of Soil Science Inc.
Minutes for Federal Council Meeting 214 Teleconference
Friday September 26th 2003

1 Opening:

The meeting opened at 1.30pm WST, 3.00 pm CST and 3.30pm EST.

2 Attendance (alphabetical order):

Present were: Lyn Abbott (Profile Editor), Linda Bennison (Executive Officer), Andrew Biggs (Qsld Branch Pres), Greg Chapman (Branch Pres NSW), Cameron Grant (Federal President), Andrew Harley (Branch Pres WA), Keith Lindbeck (Federal Treasurer), Neal Menzies (Fed. Vice President), Annie McNeill (Federal Secretary), Aravind Surapaneni (Branch Pres. VIC), Fletcher Townsend (Member NSW).

3 Apologies: John Thompson (Pres Riverina).

4 Incorporation and Constitution Issues

Following extended discussion of letter tabled by Keith regarding incorporation and potential changes to constitution the following several actions were approved by Federal Council:

- a) EO to contact Consumer Business Affairs Victoria and report to Treasurer
- b) Treasurer to follow-up legal advice on issues relating to transfer of incorporation to Victoria and the EO becoming Public Officer. Time frame urgent – also need advice for short-term cover.
- c) EO to draw up a revised 'draft' constitution for ASSSI based on 'Grassland Society' experience.
- d) Treasurer to establish costs for proceeding with ASSSI as a DGR
- e) Branches to carry out all activities under the auspices of ASSSI Federal body to ensure proper procedure and full insurance cover.

The NSW Branch President enquired about the position of ASSSI in regard to tenders for funding, contracts or consultancies etc. The Qsld Branch President raised the issue of corporate membership. It was agreed that all decisions on such activities should be endorsed by Federal Council and that the rules (by-laws) for this should be included in the draft constitution. Federal Treasurer pointed out that by-law issues are secondary to the major current issue of incorporation and should be considered later.

Action: L. Bennison, K Lindbeck

Fletcher Townsend left the meeting at this point

5 Business arising from minutes of Federal Council Meeting 213

Perth 2002 conference proceedings: The EO will put electronic copy on web-site with an index facility. **Action: L. Bennison**

Allocation of \$5K for web site: Briefly EO reported programming has cost \$2K to date. Site really needs to be hosted independently to be professional - \$60 per month. Will allow restricted member access. Derek Yates to remain web-master. E-commerce would cost \$1,000 to set up; the bank charges a one-off fee \$350 plus a monthly fee of \$35. Altogether cost similar annually to current cost of issuing subs plus reminders. See EO Report for further details.

Fed Council approved independent hosting of the site by Optus as provider

EO to report to next meeting on E-commerce

Action: L. Bennison

CPSS Duplication of acronym: Correspondence on-going – final outcome will be reported at next meeting

Action: L. Bennison

6 President's Report

See attached.

Australian IUSS Pres by IUSS Congress in 2010: ASSSI Federal Pres to contact current IUSS president (Don Sparks) re process for appointing successor.

Action C. Grant

Society invited to make a submission to House of Representatives Inquiry into the co-ordination of science to combat the Nation's salinity: After discussion following actions approved by Fed Council:

- a) Funds to value of \$2K for consultant to co-ordinate
- b) Fed Pres to contact Adrian Webb (Qsld Branch) to be a contributor and co-ordinator. Other suggested contacts: Bob Nulssen (WA) BruceMunday (SA)
- c) Draft submission to be circulated to Fed Council for comment.
- d) Fed Pres to confirm a timeline for extension for submission.

Action C. Grant

Greg Chapman left the meeting at this point

7 Executive Officer's Report

See attached.

EO asked if Federal Council intended for Subs to remain same as last year with discount for early payment. President indicated members would be keen to have no increase in next financial year.

Treasurer suggested council make a formal decision at next meeting based on budget (could provide earlier if EO needed to start process for next year).

General issues for discussion in the future: EO suggested that electronic access for AJSR at reduced rate (about \$20.00 per annum) could potentially be an integral part of ASSSI membership – another positive step in the professional approach of the Society. It was pointed out there was a possibility such action would deter some members – although they may represent a minority. EO will continue to look at this.

Action: L. Bennison

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8 Secretary's Report

Nothing to report

9 Treasurer's Report

See attached

Council Members present approved financial statements

Treasurer also pointed out agenda item to be addressed from previous meeting on complimentary membership for students submitting poster at the 2004 ASSSI Conference. In the absence of a NSW representative the item will be tabled for next meeting

Action: A. McNeill

10 Profile Editor's Report

Profile Editor reported next edition was almost ready – called for more contributions. WA and SA Branch Presidents promised to send articles.

Action: C Grant, A Harley

11 Branch President's Reports

See attached for SA, Qsld and WA Reports

Vic Branch activity (Workshop) in early October approved by Council

NSW Branch activity (Bus Trip) in October approved by Council

12 General Business

11.1 ASSSI New Members

List attached

8 new members for the Society (Proposed by C Grant, Seconded by A Biggs) were approved by Federal Council

11.2 Annual planning day for ASSSI (Linda)

EO asked for feedback on scheduling a Federal Council combined planning day in alternate years to the conference – possibly the last meeting this year in Nov. To be held at a central venue – maybe in Adelaide? Council members agreed a good ideas but cost could well be prohibitive. Fed President to explore cost-benefits and budget matters with Federal Treasurer.

Action: C Grant, K Lindbeck

13 Other business

Notes on the ISCO conference provided by Mike Grundy:

We have just been through the Call for Abstracts process and now enter a fairly busy phase of review and allocating them. We received 411 through the electronic lodgement process before it closed and a small number have been received since which we will feed into the system. This was extremely satisfying and the conference is clearly on track to get at least the attendance we are aiming for.

The next major event in the process is the registration brochure that is currently in preparation for release in November. People who had submitted abstracts will have been invited before then to submit a paper or poster.

We are actively pursuing further sponsors currently and talking to our existing sponsors about their involvement in the conference itself.

Finally, the tours are coming together and make a very attractive package – many thanks to those involved in the various states. EO confirmed that the conference is covered by insurance as an ASSSI activity.

14 Close

Meeting closed at 3.40 pm WST, 5.10pm CST, 5.40pm EST.

15 Next Meeting:

Date of next meeting: Friday 28 November 2003

ASSSI Federal Council Meeting 215

Australian Society of Soil Science Inc.

Draft Minutes for Federal Council Meeting 215 Teleconference

Friday November 28th 2003

1.30 pm WST, 4.00pm CST, 4.30 EST

1 Attendance (alphabetical order): Lyn Abbott (Profile editor), Linda Bennison (EO), Andrew Biggs (Qsld Pres), Greg Chapman (NSW Pres), Cam Grant (Fed Pres, Acting SA Pres), Keith Lindbeck (Fed Treasurer), Annie McNeill (Fed Sec), Aravind Supraneni (Vic Pres), Neal Menzies (Fed Vice-Pres)

2 Apologies: Andrew Harley (WA Pres), John Thompson (Riverina Pres)

3 Approval of minutes of last meeting : Acceptance proposed by Neal.Menzies Seconded Cam Grant (Keith Lindbeck abstained)

4 Business arising from minutes of Federal Council Meeting 214

Perth 2002 conference proceedings: The EO will put electronic copy on ASSSI web-site with an index facility. David Bickford potentially to provide index? The Fed. President proposed EO leave this action until 2004 as other more pressing business

New web site up and Derek Yates able to work on it. Comments on gloominess noted from NSW branch and they are having a photo competition that may produce a winner.

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Minutes of ASSSI Federal Council Meeting 215 continued from Page 26

E-commerce – the EO is watching progress on the grasslands site to see how it works. FC approved the costs for set up as shown in last minutes.

CPSS Duplication of acronym by spatial scientists: No longer an issue

See Federal President's report for progress on Australian IUSS presidential elections

Society submission to House of Representatives collated by Adrian Webb (Qsld Branch) circulated to Fed Council for comment.

Funds to be paid to him to value of \$200. Federal Treasurer to send cheque to Fed Sec to be sent with letter of thanks.

Action: Keith Lindbeck and Annie McNeill

Late fee for journal as well as late membership fee.

A proposal for electronic access for AJSR at reduced rate (about \$20.00 per annum) for all members to be made compulsory was put forward by the EO- after discussion FC decided to defer any action on this for a few years. The link to CSIRO should be on the ASSSI web site – EO to do this

Action Linda Bennison

5 President's Report

See attached (see Page 10 of *Profile* 136)

AGM Meeting on 19th December to ratify 2002 accounts. Meeting required in early 2004 to ratify 2003 accounts. Date set as Friday March 12th to hold both AGM and Fed Council Meeting. Further changes in AGM procedures to be finalised and discussed after new constitution is organised.

Annual Planning Day: options discussed, branch input emphasised

Meeting would be in years either side of National Soils conference

It was suggested that Fed Pres and EO in these alternate years visit each branch

Costs may be defrayed under other activities carried out at same time but there should be a fund item in the budget. It was agreed that Fed Pres would prepare an action plan and likely costs

Action: Cam Grant

Insurance for CPSS Board and FC: Papers from all FC (Keith and Lyn) required by EO to get insurance quote. May need to use in short term.

Fed. Treasurer to find out how changes to constitution could be effected to make sure no FC member is liable

Action: Keith Lindbeck

Election of next federal Council: call for nominations to be put in 1st Profile for 2004 (April)

CPSS Accreditation Board.

Fed Secretary to write thankyou letter to the outgoing chairman (Bob ??)

Replacement candidates discussed: Approach Pam Hazelton as a first choice but only after AIAST sort out their firm nomination in case it is not Graham Price who was invited by ASSSI. Suggestion to co-opt GP if that is the case as scheme is growing and board should be too. Await AIAST before action

Action: Annie McNeill

Awards –

.A. Prescott, Taylor and Pub medals - call for nominations in next profile

CG Stephens - Fed Vice-Pres to draft some criteria and circulate to FC

Nature of award: discussion on medal versus certificate plus cash latter option cheaper but maybe less prestigious – Fed Pres to get quotes for medals

Action: Neal Menzies and Cam Grant

Honorary Memberships

A motion was proposed that the present EO should be an Honorary Member for period of office due to excellent contribution to running of the society. Accepted and passed by FC.

Potential was noted also for a clause in revised constitution that EO is automatically an honorary member. A suggestion was also made to revise constitution so number of honorary members is a proportion of total number of members - taking into account the age distribution. Fed Pres. to prepare paper on Hon Life Membership in the future of the society to be considered in 2004

Action: Cam Grant

New life members (see Pres Report for names) were ratified by FC:

Fed Sec to send letters to nominators and nominees

Fed Pres to give summary to Profile

Action: Cam Grant and Annie McNeill

6 Executive Officer's Report

See attached

Subs – FC sanctioned use of tax invoice as receipt

Discussion ensued on introduction of an early bird reward or staying with late fee.

Fed Treasurer proposed staying with late fee but consider introducing the early bird fee in a year when an increase in fees is being introduced

EO asked if branch payments needed to be included in current financial statement but Fed Treasurer stated they are generally included in next financial year accounts.

Lyn Abbott left meeting after giving Profile Editors brief report- see below

7 Secretary's Report

No report – activity mostly covered by Pres Report

8 Treasurer's Report

No report as Fed Treasurer has been out of office. Will send report late. Accounts provided by EO (see attached) - approved by FC Approval was given by FC for Auditor payment (see Keith's emails). Keith to contact Cameron Varcher (Qsld) re outstanding payment (A Biggs)

Action: Keith Lindbeck

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Minutes of ASSSI Federal Council Meeting 215 continued from Page 27

Greg Chapman left meeting

9 Profile Editor's Report

Final date for submissions is 15th December

10 Branch President's Reports

See attached reports for WA, NSW, SA, Riverina, Victoria and Qsld.

Additional item: Possibility of a proposed audit of the Qsld Branch mentioned by A Biggs

11 General Business

11.1 2003 National AGM 4.00pm Adelaide Friday 19 December

Discussed above

11.2 ASSSI-AIAST agreement for CPSS (CDG to speak to attached)

EO suggested amendment to Item 11 to give some further benefit to ASSSI members in line with AIAST members. FC agreed there should be further negotiation with AIAST by the Fed. President and report to Board/FC. **Action: Cam Grant**

11.3 Time committed to CPSS by EO, Linda Bennison (does it need to increase?)

Issue really is what are the duties that should be allocated and should some duties be devolved to FC members. The Fed President requested the EO send him a copy of original contract for him to follow up at next meeting **Action: Linda Bennison**

11.4 Election of members to CPSS Board (Prof. R.E. White not re-nominating)

See pres report

11.5 Honorary Members for Life (Committee Report for ratification)

See pres report

11.6 Prescott Medal (Committee Report for ratification)

Final approval by FC

11.7 Revision of ASSSI Constitution (Progress report from Keith Lindbeck)

Done earlier

11.8 Web site arrangements (New South Wales Committee) plus general comment on style

In cornstalk – resolved Annie to check

11.9 ASSSI New Members

Proposals ratified by FC

11.10 Eminent Soil Scientist Stamp Issue for the 2010 conference

Greg said not able to be completed in time for 2004 so consider for 2010.

Discuss later.

12 Next Meeting: Feb 6th 2004 Schedule of dates to be arranged for 2004. Dates provided by Fed Pres to all FC members by Email recently Change noted: meeting in March on the 12th for early AGM Meeting for FC including planning day after Conference in Dec 2004

International Soil and
Reference Information
Centre in Wageningen,
The Netherlands

<http://www.isric.nl/>

New Phone and Fax
Numbers for
ASSSI

ASSSI Office
phone 03 5622 0804
fax 03 5622 0806

STAGE 3

Mr Colin Ahern
Natural Resources and Mines
80 Meiers Road
INDOOROPILLY
QLD 4068

Dr. Peter Bacon
Woodlots and Wetlands
67 David Road
CASTLE HILL
NSW 2154

Dr. Richard Bell
Murdoch University
School of Environmental
Science
MURDOCH
WA 6150

Dr. Warren Bond
CSIRO Land and Water
GPO Box 1666
CANBERRA
ACT 2601

Dr. Stuart Boucher
Monash University
School of Geography &
Environmental Science
PO Box 11A
MONASH UNIVERSITY
VIC 3800

Mr Howard Briggs
1/12 Bellview Pde
TARINGA
QLD 4068

Mr. Greg Chapman
Dept of Land and Water
Conservation
PO Box 3720
PARRAMATTA
NSW 2124

Dr. Alexander L Cogle
Dept. Natural Resources
PO Box 1054
MAREEBA
QLD 4880

Dr Ross Coventry
James Cook University
School of Tropical Biology
PMB
TOWNSVILLE
QLD 4811

STAGE 3

Dr. Bob Crouch
Bob Crouch Consulting
"Sentry Box"
BUNDARRA
NSW 2359

Mr. Rob Cumming
Reme Soilmaster
PO Box 2
GOULBURN
NSW 2580

Dr. David Edwards
The University of
Queensland
School of Land and Food
Sciences
BRISBANE
QLD 4072

Dr. Robert Fitzpatrick
CSIRO Land and Water
Private Bag No 2.
GLEN OSMOND
SA 5064

Mr Peter Fogarty
Soil & Land Conservation
Consulting P/L
PO Box 485
JAMISON
ACT 2614

Mr. Bruce Forster
Department of Natural
Resources & Mines
PO Box 736
ROCKHAMPTON
QLD 4700

Mr. Neil Griffiths
NSW Agriculture
Advisory Office, Tocal
PATERSON
NSW 2421

Dr. Pam Hazelton
University of Technology,
Sydney
106 Ellesmere Road
GYMEA BAY
NSW 2227

Mr. Clifford Hignett
Soil Water Solutions
45A Ormond Avenue
DAW PARK
SA 5041

STAGE 3

Mr Bruce Hodgson
PO Box 147
MELTON
VIC 3337

Mr Lindsay Jones
5 Kellet Grove
KEW
VIC 3101

Mr. Roy Lawrie
NSW Agriculture
PMB 8
CAMDEN
NSW 2570

Dr. Robert Loch
Landloch Pty Ltd
PO Box 555
DARLING HEIGHTS
QLD 4350

Mr Stuart Macnish
8 Greenrigg Court
INDOOROPILLY
QLD 4068

Dr. David McKenzie
Precision Land Management
PO Box 2171
ORANGE
NSW 2800

Dr Michael McLaughlin
CSIRO Land and Water
PMB 2
GLEN OSMOND
SA 5064

Mr. Paul Milham
NSW Agriculture
77 Eddy Road
CHATSWOOD
NSW 2067

Mr Richard Merry
CSIRO Land and Water
15 Sun Valley Drive
GLENALTA
SA 5052

Mr. Rick Morse
Morse McVey and Associates
Pty. Ltd.
PO Box 138
PICTON
NSW 2571

STAGE 3

Mr Philip Mulvey
Environmental and Earth
Sciences P/L
PO Box 380
NORTH SYDNEY
NSW 2059

Dr. Brian Murphy
NSW Dept. of Sustainable
Natural Resources
PO Box 445
COWRA
NSW 2794

Dr John Murtagh
49 Pebble Beach Drive
RUNAWAY BAY
QLD 4216

Dr. David Nash
1480 Warragul Road
STRZELECKI
VIC 3950

Mr David Orr
Impact Fertilisers
PO Box 87
LAUNCESTON
TAS 7250

Dr. Robert (Bob) Patterson
Lanfax Laboratories
PO Box W90
ARMIDALE
NSW 2350

Mr. Bernard Powell
QLD Department of Natural
Resources & Mines
80 Meiers Rd
INDOOROPILLY
QLD 4068

Mr Graham Price
Nutrient Management
Systems PL
PO Box 823
CLEVELAND
QLD 4163

Dr Gottfried Scholz
Scholz Environmental
Consulting
PO Box 692
ARMADALE
WA 6112

STAGE 3

Mr Mark Seeliger
5 Kurrua Grove
DERNANCOURT
SA 5075

Dr George Smith
45 Kuhls Road
HIGHFIELDS
QLD 4352

Mr. Henry Smolinski
Dept. Agriculture, WA
145 Orange Valley Road
KALAMUNDA
WA 6076

Assoc. Prof. Leigh Sullivan
Southern Cross University
School of Env. Science &
Management
PO Box 157
LISMORE
NSW 2480

Dr. Peter Thorburn
CSIRO Sustainable
Ecosystems
306 Carmody Road
ST LUCIA
QLD 4067

Dr. Robin Thwaites
QUT: School of Natural
Resource Sciences
Env. Sciences: Pedology/
Geomorphology
GPO Box 2434
BRISBANE
QLD 4001

Dr. Ian Webb
QLD Dept. Natural
Resources and Mines
PO Box 1054
MAREEBA
QLD 4880

Mr Kenneth Wetherby
KG and CV Wetherby Soil
Survey Specialist
PO Box 59
CLEVE
SA 5640

Mr. Larry White
Paladin-White P/L
PO Box 686
STRATHFIELDSAYE
VIC 3551

STAGE 3

Prof. Robert White
The University of Melbourne
ILFR
School of Resource
Management
PARKVILLE
VIC 3010

STAGE 2

Ms. Laura Beaupeurt
Toepfers Environ. Rehab. &
Ecol. Serv. P/
24/177 Glenayr Ave
BONDI
NSW 2026

Mr. Peter Cousins
PO Box 31
CRYSTAL BROOK
SA 5523

Dr. Guy Geeves
DLWC
PO Box 445
COWRA
NSW 2794

Mr. Brendan George
NSW Agriculture
Coordinator, Farm Forestry
Advisory Unit
RMB 944
TAMWORTH
NSW 2340

Mr Ian Hollingsworth
EWL Sciences Pty Ltd
PO Box 39443
WINNELLIE
NT 820

Mr Geoff Kew
PO Box 413
WILLETTON
WA 2601

Dr Gunnar Kirchof
Land Resource Science
School of Land & Food
Sciences
The University of QLD
BRISBANE
QLD 4072

STAGE 2

Mr Jamie McMaster
Outsourced Environmental
PO BOX 169
THE BASIN
VIC 3154

Mr. Philip Newton
Dept. Primary Industries
Rutherglen Research
Institute
RMB 1145
RUTHERGLEN
VIC 3685

Ms. Danielle Oliver
CSIRO Land and Water
PMB 2
GLEN OSMOND
SA 5064

Mr. Henry Parsons
Golder Associates Pty Ltd
PO Box 1734
MILTON BC
QLD 4064

Mr. John Rasic
19 Columba St
MORPHETT VALE
SA 5162

Ms Melissa Salt
conSalt Pty Ltd
PO Box 114
UPPER STURT
SA 5156

Ms Robyn Tucker
FSA Consulting
2 Lewis Street
HORSHAM
VIC 3400

Mr Craig Wissell
Elders Ltd
PO Box 122
BURRA
SA 5417

STAGE 1

Dr Geoffrey Anderson
3 Haynes Street
WEMBLEY DOWNS
WA 6019

Mr Bruce Dalgliesh
9 White St
DARLINGTON POINT
NSW 2706

Mr. Mark Delaney
Robert Carr and Associates
PO Box 175
CARRINGTON
NSW 2294

Mr. Cliff Dillon
115 Shepparton-Euroa Rd
SHEPPARTON EAST
VIC 3631

Mr. Simon Eldridge
NSW Agriculture
Locked Bag 4
RICHMOND
NSW 2753

Mr. Justin Galloway
FSA Consulting
19 Sondergeld Court
TOOWOOMBA
QLD 4350

Dr. Richard Greene
The Australian National
University
Forestry, School of
Resources, Environment &
Soc.
GPO Box 4, ANU
CANBERRA
ACT 2000

Mr. Scott Hardy
Whitsunday Shire Council
Whitsunday Rivers
Integrated Catchment
Management
8 Whitehaven Crescent
CANNOVALE
QLD 4802

Dr. Patrick Hulme
PO Box 130
WARREN
NSW 2824

STAGE 1

Assoc. Prof. Geoffrey
Humphreys
Macquarie University
Dept. of Physical
Geography
MACQUARIE
UNIVERSITY
NSW 2109

Ms Wendy Meech
WJB Consulting
PO Box 181
ROSEWORTHY
SA 5371

Mr. Martin Philcox
MBP Consulting
PO Box 11
MOUNT PLEASANT
SA 5235

Dr. Pichu Rengasamy
Adelaide University
Dept of. Soil and Water
PMB 1
GLEN OSMOND
SA 5064

Dr. Christian Roth
CSIRO Land and Water
Davies Laboratory
Private Mail Bag
AITKENVALE
QLD 4814

Assoc. Prof. David Smith
University of Newcastle
4 Sakonia Close
WALLSEND
NSW 2287

Mr. Mark Stuckey
Environmental and Earth
Sciences P/L
PO Box 1090
ST.KILDA
VIC 3182

Dr. Jonnie White
Agrow Australia
PO Box 936
BILOELA
QLD 4715

Mr. Peter Zund
Soil Specialist
18 Douglas Street
LAUNCESTON
TAS 7250

CPSS Pending 2003 Accreditation

Mr. Jean-Pierre Baumgartner
NCS International
PO Box 160
LANDSBOROUGH QLD 4550

Dr. Greg Bowman
DLWC
Centre for Natural Resources
PO Box 189
QUEANBEYAN NSW 2620

Dr Eric Craswell
Aust. Team Leader. CARDI
Assistance Project
c/- Hassall and Associates
International
GPO Box 1877
CANBERRA ACT 2601

Mr Jon Firman
14 Giddens Court
NORTH LAKE WA 6163

Dr. Simon Lott
PO Box W1029
ARMIDALE NSW 2350

Prof. Steven Riley
University of Western Sydney
School of Engineering & Ind.
Design
Locked Bag 1797
PENRITH SOUTH DC NSW
1797

Assoc. Prof. Hwat Bing So
University of Queensland
School of Land and Food
Sciences
ST LUCIA CAMPUS
UNIVERSITY OF QLD QLD
4072

Dr. Wayne Strong
Wayne Strong
3 Catto Street
TOOWOOMBA QLD 4350

Dr Robert Van de Graaff
Van de Graaff and Associates PL
14 Linlithgow St
MITCHAM VIC 3132

Mr. Alan Barton
Brisbane City Council
Principal Program Officer,
Conservation Land Management
15 Eromba Crescent
FERNY HILLS QLD 4055

Mr Murray Chapman
RMB 2040
BADDAGINNIE VIC 3670

Ms. Linda Henderson
Dept. Land and Water
Conservation
PO Box 3935
PARRAMATTA NSW 2124

Miss Kylie Hey
81 Kulcha St
ALGESTER QLD 4115

Dr. Mark Johnston
7 Acacin St
MUNDINGBURRA QLD
4812

Mr. Christopher Lehmann
PO Box 421
NARRABRI NSW 2390

Mr John Rubsov
Road and Traffic Authority
Geotechnical and Scientific
Services
PO Box 3035
PARAMATTA NSW 2124

Mr. Adrian Webb
Webbnet Land Resource
Services P/L
PO Box 1512
KENMORE QLD 4069

For further information about
CPSS, see the ASSSI website

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ASSSI CONTACTS

FEDERAL COUNCIL

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Dr Cameron Grant
University of Adelaide
PMB 1
Glen Osmond SA 5064
Tel (08) 8303 7404
Fax (08) 8303 6511
cameron.grant@adelaide.edu.au

Vice President

A/Prof Neal Menzies
University of Queensland
Tel (07) 3365 2059
n.menzies@uq.edu.au

Secretary

Dr Annie McNeil
Department of Agronomy and
Farming Systems
University of Adelaide
Roseworthy Campus
Tel (08) 8303 7879
Fax (08) 8303 7979
ann.mcneill@adelaide.edu.au

Treasurer

Mr Keith Lindbeck
PO Box 144
Bull Creek WA 6149
Tel (08) 9332 0671
Fax (08) 9332 0672
lindbyka@ca.com.au

Executive officer

Linda Bennison
PO Box 525 Mornington
Victoria 3931
asssi@bigpond.net.au
Tel (03) 5974 1758
Fax (03) 5974 1141

Profile Editor

Prof Lyn Abbott
UWA, Crawley, WA 6009
Tel (08) 9380 2499
Fax (08) 9380 1050
organic@agric.uwa.edu.au

ASSSI WEBMASTER

Derek Yates
derek.yates@uts.edu.au

ACT

see contacts for NSW Branch

SA President

Dr G.J. Churchman
Department of Earth &
Environmental Sciences,
University of Adelaide,
Waite Campus
PMB No.1 Glen Osmond,
SA 5064
Tel (08) 8303 7232
jock.churchman@adelaide.edu.au

SA Vice President

Mr Warrick Dougherty
Department of Earth &
Environmental Sciences,
University of Adelaide,
Waite Campus
PMB No.1 Glen Osmond, SA 5064
Tel (08) 8303 6519
warwick.dougherty@adelaide.edu.au

SA Treasurer

Dr Bernie Zarcinas
CSIRO Land and Water
PMB 2 Glen Osmond 5064
Tel (08) 8303 8429
Fax (08) 8303 8565
Bernard.Zarcinas@csiro.au

SA Secretary

Dr Tapas Biswas
CSIRO Land & Water
PMB No.2 Glen Osmond, SA 5064
Tel (08) 8303 8585
Email: tapas.biswas@csiro.au

WA President

Dr Andrew Harley
Environmental & Earth
Sciences Pty Ltd
PO Box 196
Nedlands WA 6909
Tel (08) 6389 0862
Fax (08) 6389 0863
eeswa@eesi.biz

WA Treasurer

Mr Martin Wells
Land Assessment Pty Ltd
PO Box 117
Subiaco WA 6008
Tel (08) 9388 2427
Fax (08) 9381 4727
landass@iinet.net.au

WA Newsletter Editor

Dr David Allen
Chemistry Centre,
125 Hay Street, East Perth 6004
Tel (08) 9222 3031
Fax (08) 9325 7767
allen1@iinet.net.au

VIC President

Dr Aravind Surapaneni
DNRE, ISIA, Ferguson Rd
Private Bag 1
Tatura, VIC, 3616
Tel (03) 5833 5223
Fax (03) 5833 5299
aravind.surapaneni@nre.vic.gov.au

VIC Vice President

Dr Robert Edis
The University of Melbourne
ILFR85 Howard St
North Melbourne VIC 3051
Tel (03) 8344 7131
Fax (03) 9328 1250
Mobile 0419 334 573
roberte@unimelb.edu.au

VIC Secretary

Ms Alice Melland
NRE Dairy research Institute
RMB 2460, Hazeldean Rd
Ellinbank VIC 3123
Tel (03) 5624 2281
alice.melland@nre.vic.gov.au

VIC Treasurer

Ms Karen Smith
24 Henham St
Hawthorn VIC 3123
Tel (03) 9250 6800
Fax (03) 9250 6885
ksmith@unimelb.edu.au

NSW President

Mr Greg Chapman
NSW Dept Sustainable Natural
Resources,
PO Box 3720
Parramatta, NSW 2124
Tel (02) 9895 6172
Fax (02) 9897 7985
gchapman@dlwc.nsw.gov.au

NSW Vice President

Dr Balwant Singh
University of Sydney,
Camperdown 2006
Tel (02) 9351 2237
Fax (02) 9351 5108
b.singh@acss.usyd.edu.au

NSW Secretary

Mr Jonathan Gray
NSW Dept of Sustainable Natural
Resources
PO Box 3720 Parramatta NSW 2124
Tel (02) 9895 6159
Fax (02) 9895 7985
jgray@dlwc.nsw.gov.au

NSW Treasurer

Mr Fletcher Townsend
NSW Dept of Sustainable Natural
Resources
PO Box 3720 Parramatta NSW 2124
Tel (02) 9895 5047
Fax (02) 9895 7255
ftownsend@dlwc.nsw.gov.au

RIVERINA President

Mr John Thompson
NSW Agriculture
PO Box 736
Deniliquin NSW 2710
Tel (03) 5881 9928
Fax (03) 5881 3719
john.thompson@agric.nsw.gov.au

RIV Secretary/Treasurer

Mr Lindsay Evans
NSW Agriculture
PO Box 736, St. Michael St.
Deniliquin NSW 2710
Tel (03) 5881 9906
Fax (03) 5881 3719
lindsay.evans@agric.nsw.gov.au

QLD President

Mr Andrew Biggs
Dept Natural Resources
PO Box 318
Toowoomba Qld 4350
Tel (07) 4688 1062
Fax (07) 4688 1487
andrew.biggs@nrm.qld.gov.au

QLD Vice President

Dr Robin Thwaites
School of Natural
Resource Sciences
Queensland University of
Technology
GPO Box 2434
Brisbane QLD 4001
Tel (07) 3864 2400
Fax (07) 3864 1535
R.Thwaites@qut.edu.au

QLD Secretary

Dr Robin Bruce
24 Cassandra St
Chapel Hill Qld 4069
Tel (07) 3378 6229
Fax (07) 3878 1801
brucer@uq.net.au

QLD Treasurer

Mr Cameron Vacher
Landloch PL
PO Box 555
Darling Heights QLD
4350
Tel (07) 4631 1393
Mobile 0408 753 158
Fax (07) 4631 1870
vacher@usq.edu.au

QLD Newsletter Editor

Ms Philippa Tolmie
Dept Natural Resources
& Mines
PO Box 318
Toowoomba QLD 4350
Tel. 07 46881429
Fax: 07 46881193
philippa.tolmie@
nrm.qld.gov.au

TASMANIA

Dr Philip Smethurst
CSIRO Forestry & Forest
Products, GPO Box 252-
12, Hobart 7001
Tel 03 6226 7953
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