



ASSAY

A NEWSLETTER ABOUT ACID SULPHATE SOILS

No.8 December 1995

Attached to this issue of ASSAY is a survey asking you what information you want on acid sulfate soils. Your answers will help ASSMAC and the technical committee develop and produce the information you need. Whether you are landholder, government agency, consultant, scientist, student or interested onlooker, we want your feedback. Please take time to fill in the survey and post it back to us.

ASSMATC stated goal

At its meeting in November the technical committee decided on the following goal:

To develop and encourage the use of best practice for land and water management in areas of acid sulfate soils to ensure that acid sulfate soils are not contributing to the degradation of soil, water and biological resources, and to achieve ecologically sustainable production.

The committee is developing a submission for funding for rehabilitation of 10 demonstration sites in NSW.

RTASSLAC meets with Minister

Three members of Richmond Tweed ASS local action committee, canegrower Rob Quirk, Don Buckley of Tweed Shire Council, and amateur fishing representative Lindsay Doust, met with NSW Agriculture Minister Richard Amery in November to discuss the extent of ASS in the Tweed and Richmond catchments and the need for government resources to manage the problem. They have asked the Minister to visit the catchments in 1996.

Clarence ASSLAC to be formed

Clarence catchment management committee, estuary management committee and Maclean Council have agreed in principle to the formation of an ASS local action committee for the Clarence. A meeting to form the committee will be held early in 1996.

Taree LEP requires drain consent

Earthworkers and landowners met last month to discuss Greater Taree City Council's new Local Environmental Plan, gazetted in August 1995. Section 53 (1) of the LEP requires development consent 'for any works or other development on land for any purpose which has the effect of materially altering the shape or natural form of the land, including landfill, drainage works or maintenance of open drains'. Section 53(2) states that where council 'receives an application for consent to development for the purposes of drainage works or maintenance of open drains, it shall consult with NSW Fisheries before granting the consent'. Council's director of city planning & building services, Graham Gardner, told the meeting that council would work with Manning Acid Sulfate Soils Management Advisory Committee regarding the implementation of Section 53. If you would like more information about council's approach to acid sulfate soils management, ring Graham Gardner 065 913 243, or fax him 065 913 311.

NSW coastal plains project

Queensland consultant Adrian Webb has been appointed co-ordinator of a 12 month project to look at opportunities for improving the land and water management of the coastal plains of NSW. The project is jointly funded by the land & water, fisheries, sugar and dairy research and development corporations. Adrian Webb will work with Dr Colin Chartres of CSIRO's Division of Soils and Dr Rob Argent, of the Centre for Environmental Applied Hydrology at the University of Melbourne.

The project will have two parts. First, the co-ordinators will consult with the major stakeholders, particularly industry groups, to identify the issues which impact on land and water quality of the NSW coastal catchments and plains. If the stakeholders are fully supportive, a series of workshops will be run with them in one catchment to collate and

model their collective knowledge of the processes and land use impacts on that catchment, and to see how land management can be improved and what research and development work is needed.

Experience and knowledge out of the project will be assessed for application in the other catchments. For more information, contact Adrian Webb on 07 337 42686.

ASS conference

The second national acid sulfate soils conference is definitely on, and the date is definitely 12-13 September 1996, but you will have to wait until the new year for more information. Just keep those dates free! Conference organiser Bob Smith would like to hear from anyone interested in organising post-conference field tours. Please ring him on 066 283 472.

Drainage union study

Dennis Milling of the Department of Land and Water Conservation at Grafton is currently looking at all NSW drainage unions and drain management. He can be contacted on 066 432 222.

Fisheries Act and drains

NSW Fisheries have cautioned a landholder on the Manning River who deepened and cleared a drainage channel which enters the river. Under the new Fisheries Act, the Minister's consent is required for dredging or reclamation works unless the works are authorised by a relevant public authority or under the Crown Lands Act 1989. The new Act requires permission for dredging and reclamation works because they can destroy fish habitat, reduce habitat diversity and affect water quality.

Funds for watertable management

Hastings Shire Council has received \$60,000 funding from the Environment Trust to do a pilot study for the restoration and rehabilitation of Partridge and Fernbank Creeks. The drainage area of Partridge Creek is severely degraded by acid sulfate soils, and the drainage water affects water quality in Fernbank Creek and the Hastings River. Hastings Council's David Pensini says council will look at several options

for improved watertable management, including floodgate modification, drop boards, weirs, and drain design. For more information, ring David Pensini 065 832 099.

Roadworks in ASS

Mark Eastwood is the Roads and Traffic Authority's project manager for the construction of the Chinderah bypass south of Tweed Heads. The bypass is being constructed through acid sulfate soils and Mark is interested in exchanging information with other people involved in similar projects. He can be contacted at RTA's Grafton office on 066 401 363.

State of the environment reports

Most if not all NSW coastal councils need to address acid sulfate soils in their state of the environment reporting. Two councils who address this issue specifically in their reports are Shoalhaven City Council at Nowra, and Hastings Shire Council at Port Macquarie. Both councils are also looking at their planning provisions for land use on acid sulfate soils. If you would like to know more, contact Andrew Gibbes at Shoalhaven City Council 044 293 111 or David Pensini at Hastings Council 065 832 099.

Award for Maria River project

A research project on the effects of acid sulfate soils on the Maria River in the Hastings catchment has won a Rivercare award. The project was undertaken by research consultant Scott Johnston. A summary report and full report are available from David Pensini at Hastings Council 065 832 099.

Gold Coast field day

More than 40 people attended a Gold Coast field day in November. Four sites were inspected. The first was a cane field site at Hotham Creek near Beenleigh where the creek had a water pH of 3. The site is part of a water quality monitoring program involving the Northeast Albert Landcare Group, the Gold Coast City Council and the Department of Environment and Heritage. Soil analysis by DPI showed significant pyrite (4%) below 0.9m.

The second site was a tidal flat associated with the Mudgeeraba Creek floodplain at Merrimac, west of Mermaid Beach. The site is currently being grazed by cattle but lies inland of extensive canal developments and not far from a number of golf course resorts. Analysis of total sulphur (0.38-0.99%) and net acid calculations (224-742 mol H⁺/tonne) indicated significant pyrite (0.7-2%) below 0.8m. This site and similar areas of the Gold Coast are under enormous pressure from urban development.

The third site was part of the huge Robina development which extends onto the Mudgeeraba Creek floodplain and seems certain to encounter pyritic sediments, and the final site was Burleigh Waters Estate, where acidic materials have been subjected to a rolling, testing and liming program. An interesting aspect of the program was the monitoring of the quality of the canal water isolated onsite for a year before its connection to existing adjacent waterways. No untreated site discharge was allowed.

Thanks to field day contributors Peter Lehmann (NE Albert Landcare Group), Tony Blatch (BSES), Peter Joy (Gold Coast CC), Dennis Baker (DPI), Richard Birt (DEH), earth moving contractor Rodney Peachy and Neil Sutherland (Woodward-Clyde). The field trip organisers were Col Ahern, Bernie Powell, Monika Weinand-Craske, Dennis Baker and

Angus McIlnea of the Resource Management Institute, DPI, Indooroopilly

For more information about the field day, ring Bernie Powell 07 3896 9398 or Col Ahern 073896 9510.

Sulfate, not sulfate

ASSMAC and ASSMAC's technical committee have adopted the internationally accepted form of spelling sulfate. Sulfate and sulfide will be used in all publications. In some cases there will be a discrepancy as some pre-printed material such as the ASSAY masthead uses the spelling sulfate. All new stocks of printed material will use sulfate and sulfide.

Landholder information

ASS information officer Rebecca Lines-Kelly is preparing a range of information for landholders on management options for acid sulfate soils. These include information on liming acid water, liming acid soil, drain design and watertable monitoring. She is currently organising a workshop for advisory officers who work with landholders to ensure that they have up to date information on ASS management. The workshop will be followed by a series of landholder field days along the NSW coast.



Left: Field day participants investigate a scald site on the floodplain near Robina on Queensland's Gold Coast. The pit shows that the watertable is only 30 cm below the surface. The pyrite content at one metre below the surface reached 2%.

Tea tree guidelines

Guidelines for the management of acid sulfate soils in tea tree plantations are currently in production. The four page guidelines are written by Bruce Blunden of the EPA and endorsed by the Australian Tea Tree Industry Association. They will be officially launched at a tea tree field day in the new year.

Bruce is currently writing the first draft of ASS guidelines for extractive industries.

Floodgate modification

ASSMAC is currently developing information about floodgate modification for landholders and government agencies. This information will help people understand floodgate operations and their effect on acid sulfate soils.

Meetings

There have been several ASS meetings since the September issue of ASSAY. ASSMAC met at Ballina and meets at Wollongbar this month; ASSMATC met at Wollongbar; Richmond-Tweed advisory committee met twice at Murwillumbah and had three field inspections; and Manning advisory committee organised a meeting with landowners and earthworkers to discuss Taree Council's new LEP. If you have any field days or meetings about acid sulfate soils let ASSAY know so we can publicise them; ASSAY is produced to encourage exchange of information among all people involved in this issue.

Map orders

All back orders for NSW acid sulfate soil maps have been filled, so maps can now be supplied as they are ordered. Maps are \$10 each and can be ordered by ringing 02 228 6315. The Department of Land and Water Conservation's GIS mappers are now working on a series of catchment ASS maps, showing the acid sulfate soil probability for each river catchment. They hope to have these maps available early in 1996, cost still to be decided.

Jes Sammut appointed to NSW Uni

Acid sulfate soils researcher Jes Sammut has been appointed a lecturer in the School of

Geography at the University of NSW. Jes is currently completing his PhD thesis on the effect of acid sulfate soils on aquatic organisms. He can be contacted by phone 02 385 4389, fax 02 313 7878 or e-mail J.Sammut@unsw.edu.au.

e-mail addresses

ASSAY e-mail sent to some subscribers has been returned to sender due to computer malfunction somewhere in the system. Unfortunately we have no other way of contacting these people. If you wish to subscribe via e-mail please include a postal address as well so that we have an alternative if your e-mail goes astray.

RECENT ASS PUBLICATIONS

Dent, D.L. (1995)

Resurrection of soil surveys: a case study of the acid sulfate soils of the Gambia. *Soil Use and Management* 11:2, 69-76.

Lin, C., Melville, M.D. & Hafer, S. (1995)

Acid sulfate soil-landscape relationships in an undrained, tide-dominated estuarine floodplain, Eastern Australia. *Catena* 24 (1995) 177-194. (This paper refers to the floodplain of Webbs Creek, a tributary of the Hawkesbury River north-west of Sydney.)

White, I., Melville, M., Lin, C., Sammut, J., van Oploo, P. & Wilson, B.P. (1995)

Fixing problems caused by acid sulfate estuarine soils. In C. Copeland (ed.). *Ecosystem Management: The Legacy of Science*. Halstead Press, Sydney (in press).

White, I., Melville, M.D., Lin, C., van Oploo, P., Sammut, J. and Wilson, B.P. (1995).

Identification and management of acid sulfate soils. In P.A. Hazelton, and A.J. Koppi (Eds). *Soil Technology - Applied Soil Science. A Course of Lectures*. Australian Soc. Soil Science Inc (NSW Branch) and Dept of Ag. Chemistry and Soil Science, University of Sydney, Sydney, pp.463-497.

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ACID SULFATE SOILS SURVEY

What do you want to know about acid sulfate soils (ASS)? We are producing information and want to provide what you want to know. Below is a list of topics. Please tick the topics that interest you and add any that you think are relevant.

I want to

- address ASS in state of environment reports
- analyse ASS in the laboratory
- assess development applications on ASS land
- assess environmental impact statements (EIS) on ASS land
- design drains in ASS areas
- excavate land in ASS areas
- manage tea tree crops on ASS
- manage floodgates
- manage aquaculture in ASS
- manage sugarcane crops on ASS
- manage pastures in ASS areas
- manage the watertable
- monitor the watertable
- recognise ASS in the landscape
- recognise and treat acid water
- rehabilitate ASS scalded areas
- take soil samples in ASS areas
- treat ASS with lime
- understand local government's role in managing ASS
- understand the effect of groundwater on ASS
- _____
- _____
- _____
- _____
- _____

Please tick which group you belong to. It is important that we know this so that we tailor information to your needs.

- farmer
- landowner (but not farmer)
- fisherman
- local government
- consultant
- government agency
- _____

How would you like your information delivered?

- field day
- printed material
- e-mail
- seminar
- _____

Please complete the following section if you would like us to advise you of relevant information.

Name _____

Address _____

Phone _____

Fax _____

If you know someone interested in acid sulfate soils and their management, please copy this survey and pass it on. Please return the survey to

Rebecca Lines-Kelly
 Acid sulfate soils information officer
 Wollongbar Agricultural Institute
 Bruxner Highway
 Wollongbar 2477

or fax it to 066 285 925.

Final date for returns: 31 January 1996

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