ASSAY

A NEWSLETTER ABOUT ACID SULPHATE SOILS

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Tweed Shire guidelines

Tweed Shire Council has produced "Acid Sulphate Soils Guidelines", for distribution to all intending developers in the shire.

The guidelines were produced after concern was expressed about the environmental impact of developing acid sulphate soils. Council consulted with landowners, developers, government departments and river-users when drawing up the guidelines.

A copy of the guidelines is available on request from the Tweed Shire Council, for further information phone Mark Tunks on (066) 720 440.

Easy identification

The ratio of chloride:sulphate in groundwater has emerged as an indicator of potential acid sulphate soils.

Phil Mulvey, consultant engineer and hydrologist, has used this ratio to detect potential problem soils because it is cheap, reliable and landholders can collect their own samples without the use of special sampling equipment.

The technique relies on the fact that apart from pyrite, the other main source of sulphate in coastal areas is seawater. A normal seawater ratio of chloride:sulphate is 7:1. A 4:1 ratio indicates the abnormally high sulphate levels associated with potential acid sulphate soils.

One or two water samples is adequate to identify potential acid sulphate soils using this technique. As most chemical laboratories measure chloride and sulphate for about $30, this procedure is a **cheap** way for developers and farmers to detect these potentially hazardous soils.

The conference team - Bob Smith, Richard Bush and Jan Edwards.

ASS conference feedback

Strong interest has been shown in the National Conference on Acid Sulphate Soils. Organisers say the initial estimate of 100 delegates may need to be doubled.

A broad range of topics will be covered at the conference, addressing all the issues of ASS relevant to Australia.

The field tour is generating a lot of interest with many potential delegates confessing they have not seen ASS first hand. The specific nature of ASS and its management on each site will be discussed. A soil profile and simple field identification tests will also be demonstrated.

Contact: Bob Smith, Agricultural Environment Officer, NSW Agriculture
Wollongbar Agriculture Institute, WOLLONGBAR 2477 Telephone: (066) 240349 Facsimile (066) 281 744.

Shallow drains the best

The NSW Environmental Protection Authority (EPA) is experimenting at Nowra on the NSW South Coast with the use of shallow, wide drains on potential ASS as an alternative to existing deep, narrow drains.

The disturbance and oxidation of underlying potential ASS is minimal with shallow drains. And if the drains are wide enough they can still remove excessive run-off rapidly.

Mark Pease, EPA Wollongong, is comparing water quality (including pH, electrical conductivity, aluminium concentration) and drainage efficiency between the two drain options.

Army paratroopers, who practise landing on the experimental field, are thrilled with the new shallow drains, which they find much easier to get out of.

Land management

The NSW Department of Planning has released "Acid Sulphate Soils Advisory Circular F11" to assist local government with the management of ASS, highlighting the planning and development implications.

Councils are advised to approach the development of low lying coastal land with caution.

The circular also recommends that councils work with Conservation and Land Management (CaLM) to identify and map potential problem areas. These maps will help establish land-use plans and development guidelines that will limit the disturbance of ASS and related impacts.

For further information contact Greg Chapman (CaLM) on Fax (047) 210 181.

Fisheries feel burden

According to Duncan Leadbitter, Ocean Watch, "the economic cost of ASS to the fishing industry is increasingly being seen as an unjustifiable burden".

Estuaries are the productive engines of the commercial fisheries, with almost two thirds of commercially valuable species dependant on estuaries at some stage of their life-cycle.

The fishing industry has a strong interest in the protection of water quality and fish habitats and is undertaking a major program to promote the management of ASS.

EPA co-ordinates effort

Stuart Naylor from the Environmental Protection Authority Grafton, is preparing a report highlighting the role of individuals, organisations and government authorities involved in the management of ASS.

The report aims to encourage a co-ordinated approach to the management of ASS, which the EPA believes is necessary to limit environmental degradation.

Advisory campaign

Representatives of several NSW government departments met in March to develop an advisory campaign to help landowners understand ASS.

The objectives of the campaign are:

- to increase farmers' awareness of the implications of acid sulphate soils on their land, and help them address the problem;
- to provide local government councils with updated information and;
- to incorporate the topic into the secondary school curriculum on the NSW north coast.

The Environment Trusts, administered by the Environment Protection Authority, is currently considering an application for a grant to improve awareness of this issue on the NSW north coast.

Mangroves implicated

Chuxia Lin and Dr Mike Melville, University of NSW, have found that the highest concentrations of sulphate in tidal swamps occur in mangrove roots, suggesting mangroves actively accumulate sulphate.

It is widely known that highest concentrations of pyrite in tidal swamp sediments are found in dead mangrove roots. In most tidal swamps sulphate is the limiting factor to pyrite formation. Active accumulation of sulphate partly explains why decaying mangrove roots are so rich in pyrite.

Editor - Richard Bush