

Australasian Chapter

Newsletter

IECA (Australasia) Presidents Report.

Michael Frankcombe



I recently received a phone call from a consultant working on behalf of the Qld Department of Environment and Resource Management (DERM) seeking my thoughts on good examples of soil and water management programs at a Local and State Government level.

For me this was an easy question to answer and I'm not suggesting that I have knowledge of every soil and water management program across our region but the good ones really do stand out. The top of the list has to be Auckland Regional Council (ARC). It is the premier program in our region bar none. It's been around for some time and works really well.

The second has to be the NSW Roads and Traffic Authority (RTA) with their Soil Conservation Specialists for high erosion risk road projects in NSW. This program has also been

around for a while. It needs a few tweaks but if we compare erosion and sediment control on NSW major road projects with the rest of Australia the success of the program is self evident.

Tied for third are Townsville City Council (TCC) and Sunshine Coast Regional Council (SCRC). TCC's program has been around for about ten years now and they were certainly one of the early pioneers in Qld. The program has lost some momentum since the amalgamation with Thuringowa City Council but hopefully the program will prevail and continue to improve. SCRC are the new players in the game but have achieved a massive amount in a short period of time and are certainly the tail wagging the ESC dog in South East Queensland at the moment. Of particular interest is their research on the degradation of water quality from creek systems eroding to compensate for changes in the runoff hydrograph due to development and the use of ARC flow through sediment basins.

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(Continued from page 1)

I was also asked what I thought the critical components of a successful program were. While there isn't sufficient space in the article to answer this question completely, the key points are:

- Multi-level erosion and sediment control education programs conducted by erosion and sediment control specialists (not just trainers)
- Regular and consistent enforcement of requirements by appropriate specialists
- The use of certified specialists (CPESC or own certification) for certification of erosion and sediment control plans and inspections.
- Removal of certification for non-compliance or false or misleading information
- Earth works shut down periods for high erosion risk periods or at least wet season and dry season erosion and sediment control plans.

I'm not sure what DERM are planning to use this information for. Hopefully this combined with recent changes to the *Environmental Protection Act* will mean a new era in the management of erosion and sediment control management in Qld and some welcome relief for those of us that have been trying to drive change in Qld since the introduction of the *Environmental Protection Act* back in 1994.

I can't believe another year is almost finished. It's been a big year for IECA and a successful one. Seasons greeting to you all and I look forward to catching up with you in the new year.

Michael Frankcombe
President.
IECA (Australasia)

IECA Australasia Seminar and AGM

Natural Sequence Farming Explained and Demonstrated.

Date:

Friday 5th March 2010

Location

Mulloon Creek Natural Farms,
3585 Kings Highway,
Bungendore, NSW

This is a 6000 acre property, owned by Tony Coote AM, it is a biodynamic farm, which hosts the only national Landcare demonstration of Peter Andrews' Natural Sequence Farming system along approx 5 km of the Mulloon Creek.

Tony Coote will give an overview of the farming and restoration practices, including NSF and Permaculture on Mulloon Creek. Following the introduction, Tony and other guides will lead a walk along the creek to see what effect Peter's work has on erosion control and the re-hydration of the floodplain. Very recently a further 5000 trees have been planted, using the Trees For Earth 'Plant Pink System' and this can be explained on the day by Matt Kilby, the designer of this successful planting system.

Details regarding cost and registration will be available early in 2010.

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South East Queensland Civil Contractor ESC Training a Success

The site foreman erosion and sediment control training courses run on the Sunshine Coast in Queensland during November have been heralded a success by the event organisers, the Sunshine Coast Regional Council (SCRC) and Civil Contractors Federation (CCF).

Due to the high level of demand for the training, two 2-day courses were run back to back. After the training, over 80 site foremen had completed the course.

All attendees carried out testing for a nationally recognised competency after the training. Students who successfully pass the exam will be recognised as suitably qualified by the SCRC to manage erosion and sediment control on construction sites in the Sunshine Coast Local Government area.

The course was organised by the Civil Contractors Federation in co-operation with the Sunshine Coast Regional Council, and delivered by a number of consultants including Southern Skies Environmental, Complete Water Treatment Pty Ltd, LandLoch and O2 Environmental.

The need for the course has been identified by the industry and regulators alike.

“There has been significant interest by a large number of earthworks contractors over the previous months in training in Erosion and Sediment Control,” said Sheila Donaldson of the Civil Contractors Federation. “This course has filled a much needed gap in available training for civil contractors.”

“Council is aware that many non-conformances occurring on the coast are resultant from a lack of contractor understanding of erosion and sediment control”. Maurice Mathews of the Sunshine Coast Regional Council said. “We hope that by supporting this training we can address this need.”



Each two day course was concluded by a visit to an active construction site at Peregrin Springs (near Noosa). This site is being developed by Shadforths civil contractors, who are working in co-operation with the Sunshine Coast Regional Council to trial automated flocculent dosing systems (developed by Landloch) and flow through basins.

The automated flocculating systems being trialled includes a small portable dosing system used to deliver Poly Aluminium Chloride to treat catchments up to 1.5 ha, and a solar powered dosing system capable of delivering large volumes of the

more benign flocculation product calcium chloride to treat areas greater than 1.5 ha.

Also on display were two 'flow through basins' based on the Auckland Council TP-90 design specification (available on the Auckland Councils website).

Recent field trials by the Sunshine Coast Regional Council, and studies commissioned by the same council have indicated that flow through basins with automatic flocculation can successfully remove 95% of the total sediment load from water discharging from the site. This is a substantial increase from the 30% treatment efficacy of standard F or D type basin that is used widely in South East Queensland.

Sunshine Coast Council have supported the use of flow through basins and automated flocculation on coast construction sites.

It is anticipated that the 2 day courses will be run again early in 2010 both in South East Queensland and in North Queensland. Interest for future course can be registered with Sheila Donaldson from the Civil Contractors Federation on 07 3360 7933.

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Reforms to coastal erosion management in NSW

Source: NSW DECC website Nov 2009,

<http://www.environment.nsw.gov.au/coasts/coastalerosionmgmt.htm>

Introduction

Coastal communities and local councils are facing difficult issues associated with coastal erosion along the NSW coastline. There are some 19 'hot spots' where erosion is severe and the coastline is actively receding (see Figure 1). The NSW Government has designed a new coastal erosion reform package that focuses on appropriate actions and provides a broader toolkit for both councils and communities when they are adapting to these challenging circumstances.

This issue is not new - there are records of coastal properties being affected by coastal erosion date back to the early 1900's. However the projections for [sea level rise](#) and increased storm activity, and the desire of ever more people to live and build close to the coast, has the potential to increase this risk considerably.

NSW has an established framework for managing coastal erosion risks, through the NSW Coastal Policy and the Coastal Protection Act. This sees local councils, with financial and technical support from the State, undertaking coastal hazard studies and developing coastal management plans which then inform land-use planning, development controls and coastal activities.

These plans and the related planning schemes should contain a range of suitable management strategies to inform the community about how coastal erosion will be dealt with in their communities and how individual landowners of properties at risk can and should respond. Progress on this coastal planning has been slow and needs to be accelerated. To date few coastal management plans have been completed for coastal areas with houses at immediate risk and a number of other plans in various stages of development need to be completed.

Recent storms in May 2009 once again highlighted the need for coastal hazards to be understood and to have planned emergency responses in place for all the 'hot spot' areas along the NSW coast as a matter of urgency. Without these plans in place, there remains uncertainty about how communities and landowners should respond in emergencies and into the longer term.

The NSW Government is now bringing forward a coastal erosion reform package to better equip the State and local councils with the tools needed to deal with the challenges of coastal erosion. The reforms include amendments to legislation, new guidelines, and additional support for councils to re-energise their planning processes.

Key elements of the reforms:

Sea level rise policy

A draft sea level rise policy was released in February this year and consultation is now complete. Feedback was supportive and a final policy is being prepared for release and workshopping at the NSW Coastal Conference in November. This will be supported by new guidelines that explain how the sea level rise benchmarks are to be applied in coastal and flood hazard assessments and in land-use planning. Comments will be sought from councils and other stakeholders on these draft guidelines.

Emergency management

To better prepare for future storms, a package of emergency management preparations will be implemented:

- Councils with 'hotspots' will be required to prepare



Erosion at Collaroy

coastal erosion emergency management plans by 30 June 2010. These will set out how landowners, agencies and councils will respond in the event of storm driven erosion. The Government will provide funding to help councils prepare their plans.

- The Department of Environment, Climate Change and Water (DECCW) will issue a Code of Practice that sets out appropriate temporary measures that can be used to protect property under immediate threat from coastal erosion.
- The Infrastructure State Environmental Planning Policy, Marine Parks and Crown Lands legislation will be amended to permit temporary landowner funded emergency works where they are consistent with the council's emergency management plan and the Code of Practice.

Legislative amendments

To upgrade the longer term toolkit for dealing with expected increases in coastal erosion hazards, the Government will introduce amendments to the Coastal Protection Act, the Local Government Act and various regulations to:

- include adaptation to sea level rise as a management objective
- enable councils that implement coastal erosion protection works through their approved coastal management plans to require benefiting landowners to make pro rata contributions to their costs, through a coastal protection service charge. The charges would be outside the system of rate pegging, and cover the private benefit share of design, construction and operational costs
- provide new powers to enable a council or the Minister to issue an order to stop an unapproved action likely to result in significant beach erosion, backed by increased penalties for unlawful works or activities. These orders may be appealed in the Land and Environment Court
- various operational and procedural matters.

Legislation will also be amended to permit appropriate landowner funded long term coastal protection works to slow erosion of their properties. Development consent under the Environmental Planning and Assessment Act would be required for these works from the relevant Joint Regional Planning Panel. These works would only be approved if they complied with stringent environmental and engineering requirements, including managing potential off-site impacts during construction and thereafter.

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The requirements to manage off-site impacts are important to ensure coastal protection works avoid any significant impacts on the State's beaches. Landowners would be responsible for paying into the future for any beach nourishment needed to minimise any impacts on beaches from their works. The Government recognises beaches are highly valued by the community.

Coastal zone management plans

To expedite the planning, the Minister will issue directions to those councils that have not yet completed overall coastal zone management plans (where the council area includes one or more of the State's identified 'hot spots'). These will require completion of these plans within 12 months or as otherwise agreed.

New coastal zone management planning guidelines

The 1990 Coastline Management Manual and the 1992 Estuary Management Manual will be replaced with new Coastal Zone Management Planning Guidelines for local councils. Draft guidelines will be released for consultation at the NSW Coastal Conference in November.

Indemnity provisions

To support councils in dealing with challenging issues, the Government will introduce amendments to the Local Government Act to clarify indemnity provisions. These will specify more clearly the limits of liability for property damage due to coastal erosion caused by natural processes, exacerbation by climate change, failure to upgrade works in response to climate change, or failure to undertake compliance to remove illegal structures or to require a landholder to maintain approved private works.

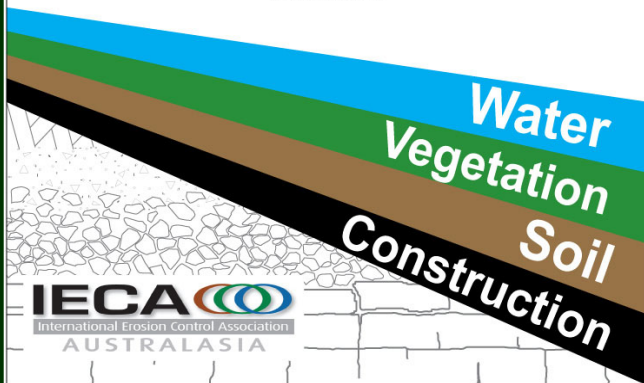
Implementation

While the immediate risks of coastal erosion have serious implications in some local communities, the large scale of the long term challenges caused by sea level rise is significant for the whole State. Potentially large numbers of buildings, infrastructure, iconic public recreation spaces and the natural environment face future risks. The issues are complex and there will be much to be learned in the years ahead. The Government and its agencies will work closely together with local councils and communities to implement the reform package. For further information and future updates please view the NSW DECC website site or contact the Director Urban and Coastal Water Reform, NSW Department of Environment, Climate Change and Water via info@environment.nsw.gov.au.

Best Practice Erosion & Sediment Control

Book 1 – Chapters

November 2008



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Best Practice Erosion and Sediment Control document
please go to www.austieca.com.au and down load the order
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Contributions to the Chapter Newsletter.

If you have or know of a case study you feel others in the industry would be interested in, and feel it would be an appropriate item for the Chapter Newsletter. Please forward it to admin@austieca.com.au.

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Presidents Technical Tip - Soil Testing for Re-vegetation, *Michael Frankcombe CPESC.*

Description:

Plants have a specific range of physical, chemical and organic parameters that are necessary for growth in soil. Testing of the soil is necessary to determine if the soil is suitable for plant growth and/or what ameliorants are necessary to change the soil to make it suitable for plant growth.

Application:

Soil testing should be undertaken for all revegetation works. Even the best looking soils can have physical, chemical and organic constraints that can dramatically limit the success of a revegetation program. In some circumstances the results of soil testing may indicate that it is more cost effective to import a good quality soil or utilise a compost blanket instead of ameliorating site soils.

Design/Construction Aspects:

Always test topsoil and subsoil as often the plant rooting zone will extend well beyond the depth of topsoil. The most difficult decision is determining how many soil samples to take. For insitu soils take samples where there is an obvious change in soil type (colour/structure etc) or where there is a change in topography/geography (eg hill top, swamp). My experience is that additional soil samples are always cheaper than re-treating revegetation failure.

Recently I was involved in revegetating a batter that had three different soils on it that were vastly different in terms of physical and chemical parameters and each soil required very different amelioration. This could only be determined by soil testing.

The photo above shows the difference in vegetation growth on an acid volcanic sub-soil that has been pH amended with super fine agricultural lime. Without the pH adjustment Al levels were toxic to plant growth and nutrients such as P and N were 'locked' in the soil and unavailable to plants.

Problems:

Always use a reputable independent NATA registered laboratory. The good ones will provide you with a report that takes the guess work out of interpretation of the results. Make sure you test for the right parameters. I always test for macro nutrients, micro nutrients, pH, Ca to Mg ratio, cations and anions, conductivity, dispersion and organic matter. More recently after working with Soil Scientist Dennis Baker I have added soil watability to this list to identify those soils that repel water. There are other parameters that you may consider depending on the location and conditions (eg sodicity, acid sulphate potential).



President's Technical Tips.

Over the last 7 years Michael Frankcombe has written a Technical Tip for each Newsletter.

These are a great reference source.

The accompanying table lists the topics covered and the Newsletter in which they were printed.

Past Newsletters can be found on the Chapter website.

www.austieca.com.au

Vol	Issue	Topic
8	#2 - Dec 2002	Bonded Fibre Matrix
9	#1 - April 2003	Update on Bonded Fibre Matrix
9	#2 - July 2003	Sediment Fences
9	#3 - December 2003	Erosion Control Blankets & Mats
10	#1 - April 2004	Sediment Basin
10	#2 - August 2004	Turf & Reinforced Turf
10	#3 - Dec 2004	Rock Filled Wire Baskets
11	#1 - April 2005	Hydro Mulch Tackifiers
11	#2 - Aug 2005	Composted Mulches
12	#1 - April 2006	Dispersive Soils.
12	#2 - Aug 2006	Compost filled filter tubes
12	#3 - Dec 2006	Erosion Mats
13	#1 - April 2007	Check Dams
13	#2 - August 2007	Concrete Lined Channels
14	#2 - July 2008	Construction Exits
14	#3 - December 2008	Clean Water Diversion Drains
15	#1 - May 2009	Amelioration of problem soils
15	#2 - August 2009	Gully Pit and Curb Inlet Traps

As IECA Australasia is an Association with the environment as its focus the Board have decided that the Newsletter will now be circulated to members in electronic format only. If you require a hard copy please contact the Chapter office.

TIME AND COST EFFECTIVE REGENERATION

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We carry out Site Soil Testing and Applications are designed to be site specific, with a detailed recommendation being submitted for consideration prior to commencement of works.

We carried out Tractor Seeding, Hydroseeding and Hydromulching with Wood Fibre and Sugar Cane Mulch on the Coolac Bypass Project on a total to date of 1,300,000 sqm and achieved results which satisfied the strict Erosion and Sediment Control

Requirements, even in an extended period of extreme drought.

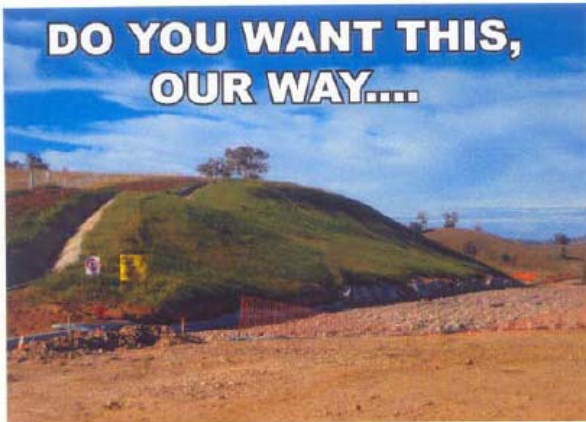
To enable timely completion of Traffic Switches are frequently completed up to 100,000 sqm per day to comply with the Abigroup Construction Programme.

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We are currently working for the Northern Hume Alliance where we have completed approx 3,300,000 sqm of Light Compost Blanket over the last two years, and are also working on the Ballina Bypass Alliance.

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