



Has the resource management wheel turned?

This year is going to be very interesting for resource managers. Some fairly substantial promises are coming out of Wellington, and there is a flurry of activity around several initiatives and ideas that NZARMers need to know about. The following feature article from Bob Cathcart highlights where and how NZARMers should be sitting up and taking notice. Dave Cameron's more specific take on hill country erosion is also a must read.

The national and international focus is returning to our bread and butter. Over the next twelve months there will be a real opportunity for NZARM members to participate in some very important and far-reaching policy development projects. While politicians at all levels are beginning to understand what you the practitioners have been telling them for many years about sustainability, they need your expertise to flesh out their policies and to implement them. The very skills referred to in other articles, the Exec Profiles and Regional Roundup in the Broadsheet are what can turn the high level objectives of the policy makers into reality on the ground. Some of the policy issues in which your input is required are:

Climate Change - Those of you with a background in soil conservation must just quietly smile and resist the temptation to say "I told you so!", or "that's b---y obvious". The blame, if that is what is needed, should be laid at the door of the Government/Treasury policies that put an end to extensive soil conservation programmes.

Just quietly accept that all this soil erosion and flooding in the Manawatu-Rangitikei-Wanganui hill country is due to "weather bombs" and climate change. The fact that it has all happened before and we have known all along what we can do to reduce the risk doesn't really matter. It is now politically correct to blame it all on climate change, accept the new concept that flood plains flood, and to acknowledge that to reduce soil erosion and flooding requires a whole-catchment approach. Make the most of it; your time has come.



Over the next two months, new whole-catchment policies will be announced by Government. The recognition that the risk of flooding cannot be alleviated by structural means alone will influence Government policies and most probably result in a National Policy Statement on the issue. Thanks to the sacrifices of the lower North Island and Bay of Plenty in 2004 and 2005, and most recently reinforced by eastern Northland, the focus will return to integrated catchment management. Re-read the Soil Conservation and Rivers Control Act 1941; yes, it is still "live" and is a very valuable tool in catchment management.

Some of you may also be involved in civil defence and emergency management. Even if you don't get to where a hi-viz vest and a hard hat in your local EOC, you may well be in a position to identify natural hazards and to advise on ways to reduce the risk from such hazards. Brush off your land resource inventory, land use capability, and urban land use capability handbooks and start mapping the hazards. Don't just hand over the maps and expect some planner to include them in district plans. Work alongside them, yes regional and district council staff working alongside each other, and together help fulfill the purpose of catchment boards – to protect property from damage by flooding and erosion.

Climate Change and Sustainable Land Use – Those of you who participated in the public meetings on this discussion document will remember the bit about increased whole farm planning and wondered where the personnel and funding would come from to provide this consultancy service. It's pretty obvious that MAF is not going to be able to do it, having retreated to a policy-only organisation and with a presence in only a few parts of the country. MAF is currently carrying out a survey amongst regional councils to assess the staff resources available in the sustainable land management/erosion control field. Let's hope that they don't drop some extra functions on regional councils just before the local government elections.



Climate change and soil carbon - You know that black stuff in the dirt. As noted in a recent Landcare Research newsletter, there is a greater volume of carbon in the soil profile than there is together in the biomass and the atmosphere above the soil. Managing soil organic matter is just good soil husbandry, an old fashioned philosophy but one which needs to be resurrected.

The concern highlighted in a couple of papers at the New Zealand Society of Soil Science Conference in Rotorua last year is that soil carbon levels are dropping, in New Zealand and around the World. Scientists can't account for all of the losses. Some will be due to increased use of nitrogen fertilisers, some to more urine from more stock, some to soil compaction under heavy stocking, some to increased cultivation

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NZARM

The New Zealand Association of Resource Management (NZARM) is an incorporated society that provides support and focus for people who share a professional interest in the sustainable management of New Zealand's natural resources.

NZARM's purpose is to champion the resource management cause, to promote professionalism, and to maintain a strong community spirit of meeting, sharing, and generally having a good time. Members receive benefit through an annual conference, regional workshops, a Broadsheet newsletter three times each year, and the opportunity to become a recognised professional and accredited practitioner of resource management (CPRM).

Further information, including membership registration details, can be obtained from the NZARM website (www.nzarm.org.nz) or by contacting the secretary:

The Secretary
C/- NZARM
Private Box 5280
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www.nzarm.org.nz

BROADSHEET

BROADSHEET is the newsletter of the New Zealand Association of Resource Management. It is now published three times per year.

The Editor welcomes correspondence, reviews of recent publications, interim reports of current research or resource management issues, news items, other articles, and lighter items about members activities and career movements. An invitation to make submissions to Broadsheet is sent out 2 – 4 weeks prior to the publication date. However, SUBMISSIONS CAN BE MADE TO THE EDITOR AT ANY TIME. Generally submissions are sent to NZARM regional coordinators or directly to the Editor. Copy sent by E-mail is preferred, although typed copy is also acceptable. Items can be sent to:

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Broadsheet is occasionally made available to non-members on a cost recovery basis (\$2.50 per issue).

Editor's note

Are we on the edge of a resource management renaissance in New Zealand? (literally 'a revival of learning and culture'). Rumbblings out of Wellington promise as much, so all NZARMers should endeavor to hear what MAF's Paul Reynolds has to say on the future of SLM at this year's Conference.

My very first introduction to resource managers was through my father - a tough as nuts dairy farmer from the better side of Eketahuna. Catchment Boards were regarded as interfering so-and-so's who pinched totara logs from the river and sold them to the local mill for beer money. And they never built the stopbank high enough either.

Enlightenment came a little later, with Mike Tuohy introducing me to the massive machine that was once soil and water conservation in NZ. With a little more digging I became aware of the almost-overnight destruction of this 'machine', and what was essentially a highly effective and successful system built up over decades.

Compared with today, this system was well organised, well funded, and had realistic timeframes to operate under (although the well organised part is apparently subject to interpretation). For example, some of you may remember that targets were set for the number of farm plans needed in NZ to control the worst farmland erosion. These were set back in 1960, with a target of around 9556 plans to be implemented within a 50 year period. Over 6055 plans had been prepared before the plug was pulled in the late 1980s. They were actually on target (rate of ~200 plans/yr), and had they been able to continue, could have achieved their aim of having the worst erosion controlled.

Change in the 1990s saw a lot of experimentation with new ideas for getting resource management going behind the farm gate. Progress, however, has been debatable. Good things are being done, and people are trying hard within the resources they have, but the juggernaut of agricultural intensification is tumbling along at a pace that is difficult to keep up with.

Some of you may also remember the 15-year promise that the Government would 'get tough' if voluntary approaches of the 1990s proved ineffective. Two or three authorities are now trying to realise this promise, particularly in the nutrient management arena.

However, rather than getting tough with new land use controls, the greater trend seems to be one of 'getting serious, honest and realistic'. In recent months there has been some masculine grunts coming from Wellington around soil conservation, climate change, flood control, water management, and a few other things besides. The difference from previous years is that these calls are being backed by activity.

On that note it is very appropriate that the first two articles in this Broadsheet edition are dedicated to Government's current interest in resource management. Much is promised, and some important announcements are due around September, which just happens to coincide with this year's NZARM conference in Palmerston North. All NZARMers should be aiming to come to the Conference, if for no other reason than to hear the latest developments in national resource management policy. Where there's change, there's also opportunity.

Ahh the annual NZARM Conference. A time to catch up with peers, colleagues, friends, and to be updated with latest resource management goings on from around the country. NZARM tends to turn on a good annual conference, and this year is no exception. See page 11 for updated conference details.

NZARMers should also consider taking part in THE TOURNEY. From what I understand this involves teams of three being asked resource mgt trivia, and taking part in competitions such as 'guess that beer or wine'. Prizes are quite exceptional - top of the line SWAZI gear (built to last & one of only two outdoor clothing firms that are still 100% kiwi made). This is the type of gear I always want, but tend to pass over in favour of the cheaper rubbish.

Lastly, feedback on Broadsheet design has been favorable, so expect the same at least for short term.

Andrew Manderson

Has the resource management worm turned?

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...for fodder crops rather than 100% pasture, and some may be due to rising temperatures.

Those of you who studied soil science at Massey or Lincoln, (as well as Bala and our other new Kiwi mates) will recall the emphasis placed on the role of organic matter in soil structure, soil biology, and soil chemistry. Organic matter, and in particular soil carbon, is what buffers the soil against extremes. It is what makes nutrients more available and is an essential component of soil structure. Soil is not some inert growing medium to which you add nutrients and extract production. It is a very complex ecosystem which must be nurtured and protected.

Make sure you have your say at all appropriate levels on issues relating to climate change, sustainable land management and carbon trading. You are the experts in this field.

Water – Another major issue on which your voice needs to be heard is that of water management. The droughts in Australia and competition for limited water resources along the eastern side of both the North and South Islands have led to a realisation that water is indeed precious.

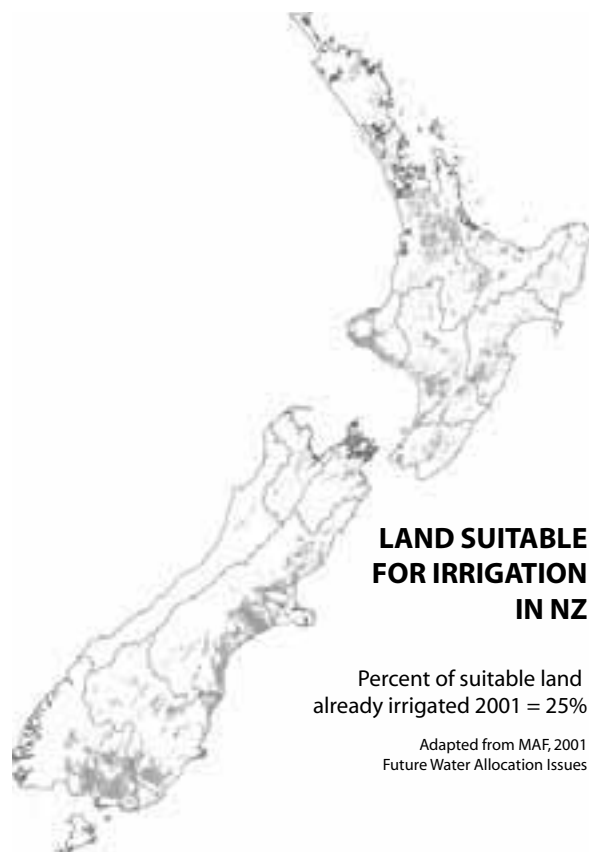
Whether you are involved in investigating water resources, allocating its use by way of regional plans or resource consents, creating land holdings each of which need water, or are in some way more directly involved in water use, remember you are managing a very precious resource. It is not good enough to just take a passive role in its management. You are the practitioners, and politicians at all levels need to hear you loud and clear.

Remember, if we don't get the management of our water resources right, we will be drinking our own like many Australian cities are planning, whether they are referring to Fosters, XXXX, or VB.

Bob Cathcart

Land Operations Manager, Northland Regional Council

(42.5 years experience in soil conservation and land management at the beginning of July 2007, but still just a boy compared with Dex!)



Has the wheel also turned for hill country erosion?

The recent spate of storms has pushed hill country erosion back into the lime-light. And by crikey struth the Government is doing something about it! However, what they are proposing will likely bring a wry smile to those who remember the hey days of soil conservation. Dave Cameron reports on what Government has been up to.

The last few months have been exciting, particularly for crusty old soil conservators who with the aid of a Braille pad or notes scribbled on the back of a packet of Park Drive can remember the 1970's and 80's and the days of national grants for soil conservation.

Recent announcements have rekindled hopes for a new partner entering the fray. It gives me great hope that those of us who have been beavering away over the last 15 years on the smell of an oily rag (regional assistance grants) will hopefully be part of a new era of central government support that will provide a direct and meaningful contribution.

I have plagiarised two documents to bring readers up to date with some recent developments. The first is a Jim Anderton speech (info box on page 5), and the second

is a 'capacity building' investigation presented by Peter Ettema. Peter's work deserves particular acknowledgement (key findings of the investigation are discussed over the page).

Jim Anderton's speech is encouraging. It has since been followed by the release of the MAF commissioned study into capacity building within local government to ascertain the ability of that sector to deliver on the announced national measures.

The fine detail on the measures themselves is due to be finalised by the end of September 2007.

Within the Sustainable Land Management (Hill Country Erosion) Framework there will be an allocation of funding (probably 20% i.e. \$500,000 pa) to ensuring

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Has the wheel turned for hill country erosion?

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...that capacity is built and sustained within Regional Councils so that the outcomes for Government can be achieved.

Capacity Building

This next section contains the highlighted points from a MAF survey on Regional Council capacity in the area of sustainable land management. It was presented by Peter Ettema from MAF Policy to a gathering of Senior Land Managers. The capacity building programme will have the following aims:

- Activities aimed at strengthening and/or developing skills and techniques within an organisation that enables people to successfully undertake specific activities and meet organisational goals.
- Programme aims to contribute to capacity building at the regional level
- Focus on employees working directly with farmers, their families and wider rural community
- Part of an on-going programme of better understanding local government needs in mitigating erosion

Summary of Human Capability Survey

- Current levels of staffing levels are not enough to fully meet erosion objectives
- Focus of work is on education and farm planning with a wide variety of tools used
- Recruitment and retention is critical
- Common range of competencies sought
- Considerable investment in training and professional development

Staffing Levels

- Approximately 7.5 FTE employed on sustainable land management activities (Range 0.4 -14)
- 2.5 FTE specifically on erosion (Range 0 – 10)
- 5 FTE needed to fully meet erosion objectives (particularly those councils with significant erosion issues)
- 4 councils are planning to increase staff numbers working on erosion

Focus of Work for Land Management Staff

- Main focus on education and farm plans
- For those councils that use farm plans focus varied considerably (Range 10% - 95%) (Average 55%)
- Compliance was not a significant focus

Recruitment and Retention

- Average of 3 new staff employed (Range 0-6) in past five years

- Being able to recruit the right people with the right skills and qualifications is an area of concern
- Increasing focus on integrated catchment mgt will increase demand for staff with broad skills
- Retention of staff is critical in maintaining relationships with farming community
- Turnover rates of 5-10%

Employee Skill Set and Key Competencies

- Tertiary qualification in NRM, Applied Sciences (Ag., forestry, geography, environment or earth science)
- Level of experience varied from a new graduate to someone with two – five years experience
- Range of competencies similar:
 - Rural understanding and empathy with farming
 - Communication skills inc. facilitation & negotiation
 - Knowledge of farming systems
 - Sound technical knowledge
 - Good academic background

Professional Development

- Challenge to recruit and retain skilled & experienced staff for SLM/erosion programmes
- Need for extensive training for new employees and on-going professional development a common theme
- Concerns over quality & applicability of Uni courses:
 - graduates without training to meet councils' needs
 - too many qualifications – need focused course
 - few links between farm mgt & environmental mgt
 - low student numbers threaten core SLM subjects, such as soil science and land mapping.

Options for Government Involvement

- Scholarships and internships
- Professional development short courses
- Annual Land Management Conference

Scholarships & Short Courses

- Neither seen as viable options for direct Government involvement
- Better suited to inclusion into Sustainable Land Management (Hill Country Erosion) Framework
- Framework has a capacity building component
- Enables each council to identify solutions that best meet their capability needs for erosion objectives

Annual Conference

- Seen as viable for Government involvement
- Need for increased opportunities to share knowledge and skills between councils
- Opportunity for networking, get a broader perspective of sustainable land management/ erosion issues and solutions

CONFERENCE

NZARM holds an annual conference to promote new learning, information sharing, networking, and a sense of community in the field of resource management. Venues alternate between the North and South Islands, and one of NZ's 16 regional authorities will usually host the conference itself. November is most favoured as the time to hold the conference.

This year's conference "**From Policy to Practice – achieving changes on the ground**" will be held in Palmerston North on 25-27 September. We will be exploring how changes can be made looking at case studies for Hill country issues, water quality and land use intensification. Field trips will look at some practical examples of what is being done.

Registrations are now open – visit www.nzarm.org.nz for more detail.

MEMBERSHIP

NZARM welcomes new members, particularly if you have an interest in sustainable resource management. Prospective members can apply anytime, by obtaining a registration form from the website (www.nzarm.org.nz) or from the NZARM secretary. Candidates are nominated by two existing members (contact the secretary if this would be a constraint).

Annual subscription is a discounted \$50 **if paid before the 31st March**. Late payments incur the full subscription cost, which is an extra \$20 (late payments extend administration requirements and end up costing the Association money). All membership enquires to:

The Secretary
C/- NZARM
Private Box 5280
PALMERSTON NORTH.

As a member of a registered association, members must inform the secretary in writing when they cancel or let their membership lapse. Otherwise the member will continue to be billed for the annual subscription.

PROFESSIONAL ACCREDITATION

The system that NZARM uses for professional accreditation is currently being reviewed.

Budget funds to combat hill country erosion

This excerpt contains the elements of a speech delivered by the Hon. Jim Anderton at the "Wise Use of Nitrogen" conference.

Budget 2007 has set aside \$10 million over the next four years to fund a Sustainable Land Management (Hill Country Erosion) Framework, Agriculture Minister Jim Anderton announced today.

"Reducing the vulnerability of the rural sector, and communities located on flood plains, to extreme rainfall events is a major priority for the Labour-Progressive Government. This funding will allow us to support regional initiatives that target the most erosion-prone land," he said.

Speaking at the "Wise Use of Nitrogen on Hill Country" Conference in Palmerston North, Jim Anderton said "New Zealand has a massive erosion problem in some areas and for our agricultural production to be truly sustainable we need to arrest this erosion. Hill country erosion has been estimated as a \$100-150 million per year problem through the loss of soil and nutrients, loss of production, damage to houses, fences, roads, phone and power lines, damage to waterways and aquatic habitat. It also has a huge social cost to the communities affected. But treating erosion-prone land can reduce the level of damage within a catchment by up to 90 percent."

The Sustainable Land Management Framework will part-fund regional initiatives to work with hill country farmers to treat erosion and work in conjunction with

incentives to promote afforestation, in order to deal with problems which are anticipated to arise from climate change. "The Framework will give priority to proposals which achieve the greatest gains in treating land, reducing sediment flow and protecting lower catchment communities," Jim Anderton said.

Later this year the Government will also be announcing a comprehensive package of climate change initiatives. "This package will include a further incentive for planting in erosion-prone catchments. Afforestation grant schemes will provide councils and their rate-payers with financial support to target critical, priority catchments.

"Along with the East Coast Forestry project which has \$6.5 million available each year for planting erosion-prone areas, these initiatives provide a range of tools that can be used to develop locally-appropriate work programmes.

"With climate change and expected increases in extreme weather events we can expect more pressure on erosion-prone country. This funding is part of the Labour-Progressive Government's sustainability agenda aimed at the economic transformation of our agriculture sector into the most sustainable primary production system in the world," Jim Anderton said.



Supply and Training of Graduates

- Long-term
- Strengthen relationship of MAF & Tertiary Education Commission
- Key outcome of Tertiary Education Strategy 2007-12 to increase professional achievement of qualifications
- Current tertiary education reforms provide opportunity for greater employer engagement in qualification design

Comments

With the pending announcements on the SLM (Hill Country Erosion) Framework timed for September and additional announcements on an Afforestation Grant Scheme under the Climate Change Framework to be unveiled before the end of the year there is a clear need for Regional Councils to prepare for changes. This will involve a significant amount of work if maximum advantage is to be gained.

I see the key elements being (but not limited to):

- A formal partnership with the hill country community that links directly into respective Regional (or UA) Council Committees
- A strategy for combating hill country erosion at the regional level (Horizon's SLUI)
- A co-ordinated training programme for Land Managers (Soil Conservators) to fully understand the range of new initiatives e.g. PFSI, AGS, HCEF, ECFP
- A process to ensure that the next LTCCP fully encapsulates these initiatives, including the education of Councillors, many of who will be new to local government.
- The ongoing development of tertiary education programmes, including scholarships and short courses to enhance and sustain capacity.

David Cameron
Manager, Land Management, Greater Wellington.

MEETINGS

Regional meetings are key elements of NZARM's mission and service to its members. These meetings are usually designed around a particular regional issue and tend to involve members and interested people from both within, and from adjacent regions.

NZARM supports such events by providing financial support via seed money. Applications can be made to the National Regional Coordinator at any time. Visit the NZARM website for more information (www.nzarm.org.nz), or contact the NZARM secretary.

There is one regional meeting planned (see Events below).

www.nzarm.org.nz

EVENTS

NZARM 2007 Conference. FROM POLICY TO PRACTICE - achieving changes on the ground. Palmerston North, 25-27 September 2007. www.nzarm.org.nz

NZARM Regional Meeting. Forest Conversions and Environmental Effects hosted by Environment Waikato. October 19th 2007 somewhere near Pataruru. May also involve VSA and an update on what's happening within the hydrolakes catchment. Contact Ross Abercrombie, EW, cell 021-471 683. Email: Ross.Abercrombie@ew.govt.nz

Soil Science Society 2008 conference SOIL – THE LIVING SKIN OF PLANET EARTH, 1-5 Dec 2008, Massey University (joint conference with Australian SSS). <http://conferences.massey.ac.nz>

Contact the editor if you have an event you want added

Kiwi erosion expertise in Laos

Here's an interesting article about an NZARMer with an unusual soil conservation niche in Asia. It is good to see that Kiwi resource mgt expertise is valued well beyond our own backyard.

Over the last two years, René Weterings has been regularly travelling to Laos where he has been providing forestry and environmental expertise to the Nam Theun 2 hydro project. He is currently contracted to Electricité de France, a French power company, as Environmental Adviser to specifically deal with erosion control and revegetation of the roads within the project area, one of which is constructed in steep terrain through a National Biodiversity and Conservation Area.

A reasonable ability in French and a rapid assimilation of basic Lao has been necessary to demonstrate the construction of runoff controls, diversion banks and sediment ponds. One of the major successes of his input has been the adoption of runoff controls by the Thai roading subcontractors to disperse water away from cut slopes to forest. As a result, the reduction in eroding slopes and therefore the amount of revegetation work required has been significant, and allows the vigorous tropical natural regeneration to establish more effectively.

While natural regeneration is the basis for much of the revegetation work by recovering and spreading topsoil from the construction zone, the mainstay of the revegetation program has been vetiver grass, *Vetiveria zizanioides*, which is used predominantly in the South East Asia region for erosion control in high risk areas.

With technical input from the Vetiver Network and a lot of support from fellow kiwi John Greenfield, a recently retired World Bank soil conservation expert who spent much of his career in the tropics involved with vetiver grass, the project embarked on the development of a nursery to provide 1 million tillers for the 2007 wet season program.

René developed the nursery system near the project site using local Hmong labour, and production has been in progress since January with stock provided by the Huayson Huaysa Agriculture Development and Service Centre in Vientiane. With 2500 mm of precipitation within the three month wet season (June – August), the labour intensive program needs to be carefully coordinated to ensure all tillers are planted within the time frame. Extensive mapping of cut and fill slopes and identifying potential slope failure zones has resulted in a 2 year revegetation program which will see some 50 km of road network treated.

The project nursery is the largest production nursery of vetiver grass in Laos and regularly attracts visitors from a range of agencies. A further million tillers will be developed for the 2008 wet season from production beds established in this current wet season along the road corridor.



“Vehicle crashes and breakdowns are a common occurrence and the entire circus is a safety officer's nightmare”

A key issue has been the removal of large volume of biomass from what will become a shallow reservoir and the water quality problems that will result from this. Since logging only removes a small portion of the biomass, there are no agreed options that are really feasible and practical to deal with this given the area to be flooded, about a quarter of the size of Lake Taupo. Plus the prolific rate of natural regeneration would severely curtail the effectiveness of any land clearing operation. Given the area was heavily bombed during the Vietnam War, all construction areas are cleared of UXO before any works commence. So any land clearing operations to remove the biomass is further constrained.

Large 750lb bombs are still found along this section of the old Ho Chi Minh trail, and the ever present 'bombies', small cluster bombs, are a major hazard to the rural based local population. The area was also a dumping ground for ordinance when bombing missions over Vietnam were not successful. The suggestion by one Aussie to use some of the inventory of the remnant Agent Orange seems to have fallen of deaf ears. While there was practical merit in this suggestion, it appears politics and emotion has ruled this out.

Logging has resulted in a bonanza revenue for the Government but an oversupply of wood onto the local market. Despite the increased volume of wood, it is unfathomable that local processing facilities, sawmills, kilns, veneer plants have closed in the last year. Given the politics of forestry in such places, one's opinions are not always appropriate. Since the local capacity to utilise this extra wood is limited, much of it has been



WANTED: Truck drivers. Must have nerves of steel and a yee haa! attitude. Complete disregard for safety is desirable, although full training will be provided to the right applicant.

exported to neighbouring Vietnam where the capacity to absorb any resource appears infinite. This has given rise to an amazing armada of logging trucks whereby safety is the least concern and where nerves of steel are necessary. Vehicle crashes and breakdowns are a common occurrence and the entire circus is a safety officer's nightmare.

René Weterings
Environment Bay of Plenty

Advance notice: NZARM AGM

NOTICE IS HEREBY GIVEN that the Annual General Meeting of the New Zealand Association of Resource Management will be held in the Palmerston North Convention Centre, Main Street, Palmerston North on Tuesday, 25 September 2007, commencing at 5.00pm.

AGENDA

Apologies

Item 1a Confirmation of Minutes of 2006 AGM

1b Matters Arising

Item 2 President's Report

Item 3 Treasurer's Report

Item 4 Regional Coordinators Report

Item 5 Auditors Report/Election of Auditor

Item 6 General Business

General Business to include discussion on CPRM, the NZARM Website and Broadsheet.

T Manderson, Secretary.

Nitrification inhibitors – all you need?

The use of N-inhibitors in farming has incredible implications for improving water quality and reducing greenhouse gas emissions. Sue Page provides an industry perspective on recent inhibitor developments.

Over the past few years there has been an increasing amount of media coverage given to nitrification inhibitors, much of it focused on their ability to reduce nitrate leaching, curtail nitrous oxide emissions and grow more grass.

With so much positive talk, you could be forgiven for thinking that these substances were a panacea for nitrogen-related environmental issues. Indeed, in the Government's Sustainable Land Management and Climate Change – Options for a Plan of Action document, one of the proposed interventions for the farming community is the provision of a subsidy on nitrification inhibitors (and a complementary tax on nitrogen fertilisers).

There's no doubt that, used correctly, nitrification inhibitors do work. Trials in New Zealand typically show a 75% reduction in nitrous oxide emissions when DCD-based nitrification inhibitors are used on urine patches, and nitrate leaching can be retarded by around 32%.

However, the extent of this mitigation depends on many factors, including soil type, soil temperature, rainfall patterns, and timing of application relative to the deposition of urea or urine. It is quite possible for a farmer to apply a nitrification inhibitor and receive very little benefit from it, either in terms of environmental protection or in additional pasture growth.

To prevent this from happening we need a systematic study of the factors that influence the behaviour of nitrification inhibitors in real-life farming situations. Ballance commissioned AgResearch to carry out some work along this line, as part of the development of its DCn nitrification inhibitor. These trials were carried out in three different regions – Southland (sedimentary soil), Waikato (ash soil) and Rotorua (pumice soil). One of the most important findings from this work was the importance of application timing. To be effective, a nitrification inhibitor has to be in the soil while nitrogen is still in the urea or ammonium state. Once the nitrogen has been converted to nitrate, adding an inhibitor is the same as shutting the stable door while the horse tears off down the race. At the moment, Ballance recommends applying nitrification inhibitors one week either side of grazing, although we would like to see further research into this.

Another important factor is timing of applications relative to local rainfall. In Southland, for instance, we found that you need to apply inhibitors in April, because most of the nitrate typically leaches out of the soil in May. If cows are wintered off, then a second application may not be necessary. On the sort of well-drained soils typically seen around the Rotorua district, two applications are needed; the first, in April/May stops nitrate leaching out over winter; the second, in July/August, helps retain the nitrogen in the soil so it can be used during the spring growth flush.



"Great news on our greenhouse targets. We've bred a cow that doesn't release any methane".

www.nicholsoncartoons.com.au (legally reproduced).

We also know that nitrification inhibitors are likely to be far less effective in areas where the winter soil temperature is greater than 12C (e.g. Northland), and in areas of high rainfall (such as the West Coast). So the indications are that nitrification inhibitors can play a role in reducing the environmental impact of nitrogen, but they are only one of many strategies that can be used by farmers.



Practices that reduce the amount of nitrogen entering the soil in the first place are also important tools in the battle to manage environmental impacts of farming. Since the most significant source of nitrogen on pastoral farms comes from animal urine and dung deposited on the soil, it makes sense to try to reduce

this. Using low-nitrogen feedstuffs is one option, and could be combined with restricting the amount of time stock spend grazing pasture during the critical autumn months.

Even greater control can be achieved if stock can be kept off the land for all or some of the time. Winter barns and feeding pads enable farmers to collect animal waste and then control when and where it is returned to the land, so helping to manage the nitrogen loading of the soil.

If fertiliser nitrogen is applied, then any environmental impact can be minimised by following the Code of Practice for Nutrient Management. In addition, fenced, planted riparian strips help protect waterways by providing a physical buffer and by removing nutrients before they reach the water.

Combine one or more of these practices with nitrification inhibitors and you are likely to get even greater environmental benefit. In each situation, consultants, fertiliser representatives, regulators and other interested parties need to work together with the farmer to determine which suite of approaches will work best on that particular farm. As is often the case, one size definitely does not fit all.

Sue Page
Ballance Agri-Nutrients

ORARI RIVER ICM COMMUNITY GROUP

The Orari River in Canterbury is a prime example of the problems faced by sustainable resource management (namely finding a balance between recreation, natural values, and the use of water for development).

Environment Canterbury, in partnership with the NZ Landcare Trust initiated an Integrated Catchment Management process in the Orari Catchment, South Canterbury, in May 2005. The purpose of the Integrated Catchment Management process is to draw together the diverse range of groups, individuals and organisations with an interest in the catchment, and facilitate the development of a management plan or strategy, that reflects these interests.

One of the fundamental principles of this process is that it is community driven, rather than directed by any single agency. This ensures that the resulting strategy or plan accurately reflects the needs and wants of the entire community, and aids in directing statutory agencies like Environment Canterbury, District Councils and other organisations in their various activities as they relate to the Orari River.

To date the process has involved identifying key issues, sharing technical information and community viewpoints, workshops to work through how the issues should be managed, and a fieldtrip around the catchment.

The formation of a representative Steering Committee to review the draft management plan has been the latest achievement of the group. This committee of 12 will set priorities, timelines and cost estimates and initiate the implementation of the Management Plan.



Blue Duck from the Orari River. Picture from Mike Jolly's "Orari river birds" presentation to Landcare Trust.

Julia Laming and Shelley Washington will be making a presentation at the NZARM conference about the ICM process and its benefits and challenges that have arisen from using it as a planning tool.

Julia Laming and Shelley Washington
Landcare Trust

From the Secretary's Desk

The Exec have had two teleconferences, generally business as usual. NZARM remains in a healthy state financially, the Exec would like to see funds put to good use and are always open to ideas for Regional Meetings. Membership numbers remain steady at 240, most recent members are listed below.

Dave Houlbrooke – *PhD Soil Science, Massey Uni, Dairy effluent management and nutrient loss from a mole-pipe drained intensive dairy farm. MSc, Earth Science, Waikato, BSc Earth Science, Waikato. Previously worked in Department of Agriculture, Western Australia. Currently works for AgResearch, research interests include*

- Impacts of intensification on soil & water quality
- Impacts of soil compaction on pasture response
- Improving management of farm dairy effluent
- Best environmental mgt practices for dairy farming
- Irrigation management and water use efficiency

President's comment

Hi to all members

You should have all received the registration form and information for this years 54th NZARM conference, to be based in Palmerston North. I trust as many of you as possible are going to attend what is going to be a lively gathering, discussing policy to practice. NZARM conferences are worth the effort as they are very enjoyable, relatively informal, and memorable!

We have been fortunate to have had such a good conference committee, led by Tabitha Anthony, to put together the interesting programme. The 'tourney' looks new and exciting also. Please come to the AGM this year, the Exec want a longer than normal robust discussion on CPRM, regional meeting/training opportunities, amongst other things. Support your annual conference!

Most of New Zealand seems to have been battered by winter storms recently. No doubt we will collectively eulogise about climate change and its effects. But, irrespective of the weathers vagaries, the simple fact is NZARM members are going to be required to use their knowledge and skills, most of it in a reactive mode I suggest. Some will have the satisfaction of work well done in the past.

The storms just add to the current growth in sustainable land management awareness and need across the

Tony Faulkner – *Land Management Officer, Greater Wellington Regional council. Degree in geology and began career working in oil and gas exploration in Australia. Since moved into environmental science, has worked with salinity issues and more recently contaminated land and landfills working for URS in Wellington. Now with GW focusing on soil conservation for hill country farmers in Wairarapa.*

Ryan Standen – *Environmental Management Officer – Soils, Horizons Regional Council. B Apl Sc, NRM, Massey. Involved with SLUI farm plans in the Wanganui Catchment.*

Nathan Cruickshank - *Land Sustainability Officer, Environment Southland. Worked at Environment Southland for 6 years, most of that time as Environmental Data/hydrology. Previously worked for Topoclimate South.*

Wayne Anderson, Julia Laming, Reuben Hansen

countryside. As the oldest, and I think, only professional association with members specialising in sustainable land management we need to be ready to take advantage. Anyone entering the broad resource industry we work in needs to know of, and about, NZARM and want to belong.

They will want to belong because we have a strong presence. We provide a strong network for members, provide training opportunities with supportive funding, run an excellent conference, and finally, provide a useful broadsheet and website. Plus a credible professional certification process known as CPRM. But most of all, we support, involve, and network amongst each other, to help the country achieve some form of sustainable land management. (Putting aside the fact that individually we all do things we want to and enjoy)

That's why we belong. Belonging to NZARM supports your professional credibility and supports your own professional growth. In the future this is going to be very important because soon you will realise that there aren't many people with the skills you have. And, with 'capacity building' being a buzzwords, I know just the organisation and people to help.

A te wa koutou, na

Simon

Conference update

By the time this Broadsheet comes out, you won't have a lot of time left to register for NZARM's 54th Annual Conference. Which is why we've enclosed a registration form. Please be aware that a LATE FEE applies to any tardy individual who forgets to register before the **3rd of September**.

That said, this conference is gearing up to be something special. For starters, we have Paul Reynolds and John Greer from MAF updating us on the latest developments in SLM and hill country policy (see Bob & Dave's articles, this edition).

Secondly, every so often a council gets inspired and rolls out a bundle of new and

innovative ideas. This time around it is Horizons Regional Council, and they're very keen to show off what they've been up to. Some of the developments to look out for are SLUI, the One Plan, FARM Strategies, and the Big Rig to name a few.

And I've run out of space. There were other things I wanted to talk about, but I had to rejiggle everything to fit in a late article from someone who should know better. Have a look at the Conference Programme to get an idea of what you'll get out of the conference. And if none of that appeals, you should turn up anyway because you're supposed to be an active NZARM supporter!

Conference Field Trip #2 preview

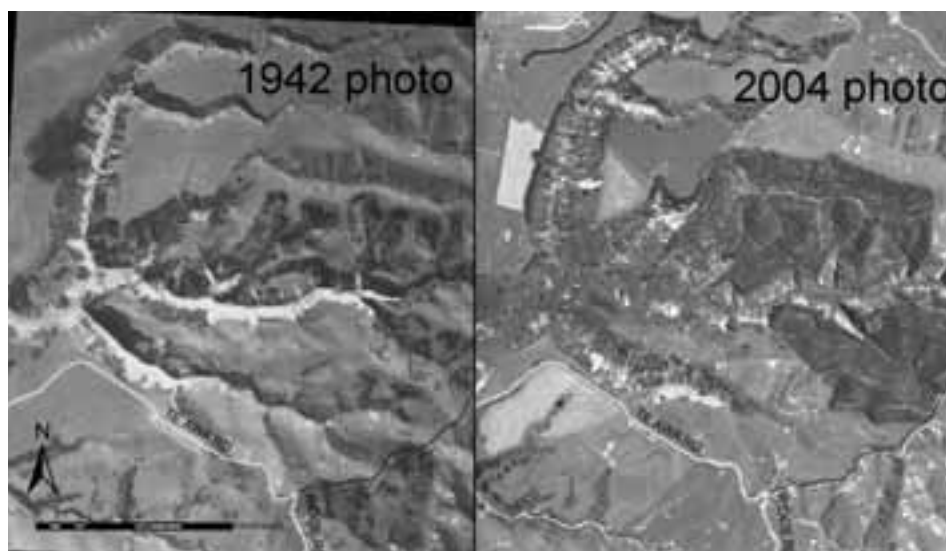
This trip will focus on severe erosion in unconsolidated sands in the Pohangina valley. We will get a look at:

1. Goulters Gully – In the 40's to 60's this was the worst gully erosion in unconsolidated sands you would see anywhere. After a huge amount of effort to stabilize it with willows, poplars and debris dams it was eventually afforested, dramatically reducing but not completely halting the gully advance.
2. Severe slip erosion along Ridge Road. This area blew apart in 1992 and again in 2004. We will discuss challenges involved in

implementing farm plans in this environment.

3. Pohangina township – another example of the problems associated with having a town on an outwash fan of an actively eroding gully.
4. Lunch at Totara Reserve – arguably one of the three best lowland podocarp forest remnants in the North Island, and now a Regional Park! Issues with flooding of the camp ground, streambank erosion, possums and snow damage.

Malcolm Todd



The famous Goulters Gully in 1942 (left) and just after the 2004 storm (right).

Regional roundup

SOUTHLAND

The continued dairy expansion in Southland has been one of the dominant focuses for staff in recent months. Nathan Cruickshank has been busy visiting proposed dairy conversions with thirty conversions visited which are expected to come into production for the 07/08 season and an additional thirty (so far) looking at conversion for the following season.

In the southland environment current effluent disposal methods and storage are proving to be inadequate to many situations. For this reason the dairy green project focused on better ways of storing and disposing of effluent. It was from this project and research work by AgResearch that has provided much of the momentum for the promotion of deferred applications. Other past six months we have been busy with a range of dairy initiatives.

The dairy effluent guide lines booklet has been released as a guide to best management practices in the disposal of dairy effluent. The booklet covers a range of topic from irrigator maintenance, effluent application methods to soil health and nutrient budgeting but particularly focuses on storage and low rate application methods. This booklet was some months in the making and many thanks go to Ag Research and Fonterra for their input into its production. The guidelines are available on the ES website in pdf form.

Soil moisture network has been setup throughout Southland with ten sites in total, covering the different climatic zones and soil types across the province. The network has a dual focus, in modelling groundwater water recharge and as a guide for the appropriate time to apply dairy effluent to pasture. Soils in Southland can be at field capacity for extended periods outside of the winter months. For this reason it is important to be able to defer application to times when the soil is below field capacity. It is hoped that as dairy farmers increase their storage the soil moisture network will be used as a tool in deciding when it is suitable to apply dairy effluent to pastures.

In April Environment Southland and Fonterra jointly held an effluent field day which was aimed at promoting deferred storage and low rate application systems. The day was well attended.

On the farm planning front we are currently in the process of putting together farm plans for the three meat and wool monitor farms in Southland, I would be interested to hear about how others have

approached this request from meat and wool. ES also has several large areas of floodway land and farm plans are also in the process of being drawn up for these properties. This environment provides unique challenges as their main purpose is as floodway land. Demand for wind break tree planting continues with a number of plans prepared for the coming planting season.

Jim Risk

MANAWATU-WANGANUI

Grant Cooper has been head down bum up trying to get the 40 Whole Farm Plans on to the Chief Execs desk. He is justifiably proud to have completed 40 comprehensive farm plans in one year. Well done to Landvision and all the Horizons team. Only 80 to do for this year!! Meanwhile he is still going through hoops trying to get the bid to MAF for money to help us write more plans and pay for works.

In my never humble opinion, this is integrated catchment management at its best. We have the region divided up into 100 subcatchments in the One Plan. Each has its values clearly set out, whether these be, trout spawning, trout fishing, iwi, recreation, special native fish, etc. etc. or a combination of factors. Based on that, each catchment has water quality standards for N, P, E coli, MCI, turbidity and clarity and a couple of others. Each also has current state of the environment water quality monitoring data, thus establishing, in most subcatchments, a gap that needs to be met. The farm plans are set up to address that gap, where the gap is mainly sediment. We concentrate farm plans in priority catchments where the gap is large and where we think we can make a difference.

The rest of the team have also been head down doing the same stuff, plus organising the usual pole planting and grant jobs.

Just for all you ex Massey soil science graduates out there... I certainly had it drummed into me that Tokomaru silt loam was a very sensitive soil to pugging. But recent VSA sampling shows that Kairanga silt loam is substantially worse. Tokomaru soil is a Perch-gley Argillic Fragic Pallic soil, which means it is a pale soil developed in loess that has very poor drainage due to a clay subsoil with less than 4mm/hr permeability over a compacted pan. Kairanga soil on the other hand is a recent Gley soil developed in river silt. The VSA scores for Kairan-



VSA suggests Tokomaru silt loam (top) is more structurally resilient to pugging than Kairanga silt loam (bottom).

ga silt loam dairy paddocks this autumn were mostly around zero (bad). Whereas the scores on Tokomaru silt loam dairy paddocks were mostly around 1.75 (pretty good) and on sheep pasture they were 2 (excellent). A score of zero is basically that the 20x20x20cm cube of soil was pretty much all one lump (after being dropped three times from waist height on to a hard surface plus having been gently prised apart anywhere that roots were holding it together). A score of 2 is basically 95% 5mm aggregates, with a few 1 to 2cm aggregates at the top.

Malcolm Todd

WAIKATO

John Quinn and NIWA colleagues provided a talk on "Agriculture and water: Issues and the mitigation toolbox" at a National Forum on Freshwater Science for federated farmers in Wellington on 19-20 June. NZARM members may find the talks from researchers from several CRI's, ECan and NZ Landcare Trust of interest. The web link to all the talks at the forum is: http://www.fedfarm.org.nz/water_forum.html

John Quinn and Lucy McKergow recently completed a report on answers to frequently asked questions (FAQ's) on riparian management posed by land management staff of Hawkes Bay Regional

council. These were used to frame training on targeted riparian management that John and Lucy carried out in Hawkes Bay in May funded by EnviroLink. The material will eventually get onto a website, but in the meantime a pdf can be requested by emailing j.quinn@niwa.co.nz.

Michelle Gibbs has been working on completing EW's Environmental Best Practice Guidelines for Vegetation Management and In-stream Works. The guidelines is similar to a code of practice for all work that Environment Waikato's River and Catchment Services Group undertakes. The guidelines will also be extremely valuable when applying for resource consents. I am also working on a project that aims to prioritise opportunities for Biodiversity Enhancement on Environment Waikato managed land. I'm starting off by looking at the land EW owns in the Waihou River and Piako River catchments. I am working on devising a ranking system to compare various sites/ecosystems against each other. Once I have the top priorities I will work on putting management plans together for those sites and them implementing them.

For **Ross Abercrombie** and **Paul Smith** the ICM project is now in full swing. They have started doing farm plans with a focus on nutrient management, while staying "integrated" into many areas of farm management. Due to the integration facets, and due to not having carried out farm plans for many years, the development has been a slow process. Farmers in both catchments are showing good interest in the project.

Other things happening of interest include forest conversion and the upper Waikato policy review. The rates of conversion are increasing with the larger companies involved pushing forward with larger machinery to clear large tracts of land. At this stage EW does not have rules in our regional plan to slow this so we are hoping MAF will take the lead with some economic drivers to slow rates of change. Conversion will fit with upcoming policy development alongside nutrient management in the hydrolake catchment. This work is being coordinated through policy here and expected to take 2 years to draft stage. It is all a part of a wider discussion in our catchment regarding water and nutrients which is likely to heat up from now on. Tainui have now signed a draft agreement of principle for the river and this will hold NPS status. Lively times ahead.

Tane Desmond

WELLINGTON

Just when you thought it was safe to go into the water.....the person you passed the broadsheet onto resigns.

Chris Ladd resigned back in May to return to

the dairy industry. Seems to have been a good decision on the back of the \$6 payout from Fonterra.

The planting season is about to get underway. This is about a month later than usual because of the severe drought up to the end of May. Soil moisture levels are only just reaching the point where pole planting can be contemplated. **Stan Braaksma, Don Bell, Tony Faulkner** and **Andrew Patrick** make up the main team working with farmers on erosion control programmes. Looks like they're going to be very busy over the next two months trying to complete the planting of 26,000 poles.

Peter Cameron retired from active service in early June. He has completed 44 years of outstanding service for the Catchment Board and the Regional Council. We are privileged to have him back one day a week to assist with the transition phase for new staff. In his spare time he is enjoying golf, restoring vintage farm machinery and getting his extensive model railway system back in running order.

I've put together a piece on the good noises coming from Government on sustainable land management and in particular hill country erosion. Maybe my last ten years in the industry will see a return to meaningful Government support of sustainable land management programmes. It won't drag the votes come October but is a very welcome sign from this Government and one is hopeful that it transcends future Governments as well.

A critical element for Greater Wellington over the next few years, particularly on the back of recent Government announcements will be establishment of a strong partnership with the hill country farmers. We have very strong relationships with many individuals however for issues such as climate change, carbon credits, nutrient management and the like we need to engage with a wider representative group of stakeholders.

See you all at Conference

Dave Cameron

BAY OF PLENTY

Glenn Sutton is finding the world of subdivision and surveying very busy. He has been involved in more hearings in the last 6 months than during his former life with Environment Bay of Plenty. A client recently suggested after a hearing that he should be a lawyer - there's a thought (Kawerau Legal?). Getting used to being called a "planner" is also proving a considerable challenge.

As well, Glenn is assisting Mighty River Power with the environmental monitoring of the earthworks for the new Kawerau Geothermal Power Station where he sees Bridgette Robson from time to time. He also continues contract work with Waiotahi Contractors, a local civil-engineering contractors, preparing consent

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applications and environmental feasibility reports. In his "own" time there continues to be the learning experience with Clydesdales (he has 3 Clydies now and his Polish wagon should arrive in October!), which proves to be rather exhilarating at times - good for the cardio system. Also, harvesting has started on his and Janice's forest-farm block and there is a lot of planning for future development including a new home.

Robyn Skelton continues to work with various community/Landcare groups as they address issues in the Central North Island area. Of particular note is the Te Awa O Waitao Stream Restoration project. This project aims to restore the locally significant Waitao Stream and wider catchment with a combination of western science and traditional Māori knowledge. It is a joint NIWA, Tangata Whenua and NZ Landcare Trust project. The Waitao River flows from the Otawa Ranges into Rangataua (Welcome Bay). The river, its mouth and surroundings are very significant culturally and historically to Tangata Whenua: Nga Potiki, Ngati He, Ngai Tukairangi, Ngati Kuku, Ngati Tapu ("Ngaiterangi"), Ngai Te Ahi and Ngati Pukenga. The project is being supported by Tauranga City Council, Western Bay of Plenty District Council, Environment Bay of Plenty, Department of Conservation, Nga Whenua Rahui, local community and hapu.

Norm Ngapo has been busy doing a range of stuff over the last couple of months - Assessing conversion of steep Class VIIe plantation forest land to pasture in the Ohiwa Harbour catchment, soil surveys (poor soils) for land subdivision, lecturing to students at the Whare Wananga O Awanuiarangi, looking at the development of new land disturbance rules in the proposed Bay of Plenty Regional Water and Land Plan, and land resource consent processing for Environment Bay of Plenty. Norm has also commenced work with Andy Woolhouse (working for Environment Waikato) providing land management advice to landowners who are converting plantation forest land to pasture in the upper Waikato catchment. Norm and John Whale also managed to visit **Alan Campbell** and **Bala Tikki-setty** at the Environment Waikato stand at the national Field days - EW puts on a good cup of coffee on a wet cold winters day!!!

Lots of action at Environment Bay of Plenty these days. Our CEO **Bill Bayfield** has appointed his seven new Group Managers so the first stage of reshape and redirect has been completed. Phase two of the structural change programme is now on the books and this will entail realigning the current third tier portfolios to

better deliver on our Ten Year Plan. The council has also ratified its decision to shift the Environment Bay of Plenty HQ from Whakatane to Tauranga. Project HQ has been initiated to look at the impacts and opportunities this will have - and find us a new home over there.

At the coal face, our Regional Water and Land Plan has had most of its draft consent orders ratified by the Environment Court, must say it has taken quite a while to get the last ones given the big tick. We have also an array of variations to sort some of the gremlins out, and make improvements. The Environment Bay of Plenty Forestry Operators Accreditation System has been initiated and we have already some applications in. We'll report more on this later and give an update at the conference. No reports from our Land Management Team this time.

Feeling a lot for our Northland colleagues at the moment as they get hammered with yet another wet front - seems the wet and wild side of Global Warming is here. Hang on in up there guys!

John Whale

HAWKES BAY

Life has been pretty tough in Hawkes Bay for the last couple of months. The autumn drought has taken its toll on conservation projects. In many areas, where fencing has been impossible since February, the rain has finally softened the ground enough to ram a post without breaking it. This left farmers with 2-3 weeks to complete this years projects including planting. As a result many a land management advisor has been roped into planting and even fencing as part of their inspection process. It does have its bonuses though.... building relationships and more importantly the occasional beer!

However, the situation for this years pole planting program, especially in the south of the region is not good. After last years record breaking year, it looks as though we'll have an 'annus horribilis'. The rain might have come but the impacts on farmers bank balances are such that they've either cut back pole planting numbers dramatically or pulled out completely.

Despite this the mood is still upbeat within the team. Warwick 'beach bum' Hesketh has been checking out the breaks at Waimarama whilst carrying out a spinifex planting program with HDC. He also has a spinifex sand trapping trial running at Muddy Creek looking at whether the Bay of Plenty dune planting program principles can also be applied to the Hawke's Bays gravel beaches.

Steve Cave, the land management teams latest acquisition from bio-security has been thrown in at the deep end. Working through which of his farmers are still pole planting this year, getting up to speed on the land use capability units and soils within his area, learning how to plant poles as well as getting over the shock of farmers being nice to him!

Peter Manson & Neil Faulknor have both been challenged somewhat by their computers. The connection into the Council system from outlying areas is causing them no end of grief (that's the polite version). This and the drought has meant Neil has finally had a chance to start going through his photograph collection, I'm not implying he's been around a while, but I've seen a fair few pictures with horses and carts in them! Peter has been kept occupied by river mouth openings due to low flows and as the air quality monitoring service for Wairoa.

Joe Devonport has been whipping his student helpers into shape yet again (although at least they haven't come into the office covered in blood thus far). They've been planting Totara's at Tongioio. With the harvesting now finished Joe's now into planting mode. This will include an area of *C. lusitanica* and an *Ensis* provenance trial plot.

Simon Stokes has been nose to the grindstone finishing off this years quota of farm plans. He's also been sorting out this years pole planting clients as well as putting the finishing touches to the first Land Use Capability information sheet suite.

Garth Eyles has returned from a month overseas visiting old haunts and generally taking a well earned break.

And **Andrew Curtis** has been putting together a number of projects for the spring, these include -

An Agmart/FAR funding application for a powered strip till maize trial in CHB. The projects main aim is for wind erosion control but it also could provide some solutions for Nitrogen management in pasture.

Also, A furrow dyking project for raised bed cropping in conjunction with Crop & Food and J Bostock Onions. Sediment run-off and hence nutrient loss from rainfall and irrigation events is a problem with bed cropping. Inserting mini dycks along the furrows (every meter) could potentially reduce run-off and improve soil water retention.

Andrew Curtis & Peter Manson

TARANAKI

You may have gotten wind of something unusual happening in Taradise. The flip side to living in a tropical paradise is the propensity for tornadoes. While the droughts were desiccating the east coast, the region was looking good going into the winter after some exceptional autumn growth. Reality check! A tornado struck New Plymouth and wreaked havoc on the local Placemakers store. This was thought to be a one-off event? However, on Thursday the 5th of July, a swarm of 6 tornadoes devastated over 70 houses and buildings causing an estimated 8 million dollars worth of damage. A state of emergency was declared.

Most of the damage was sustained by the coastal township of Oakura (15mins south west of New Plymouth). The tornadoes did make their way through to Inglewood, Stratford and south of Hawera, leaving a trail of destruction in their wake. Where they struck in urban areas, house roofs were removed quicker than the promise of a tax cut. Trees and farm buildings were not spared in the rural areas and a massive clean up is occurring. Miraculously, no fatalities occurred although many frightening stories were reported.



Tornado damage to forestry

Ironically, NIWA released a report commissioned by Taranaki Regional Council and New Plymouth District Council, several days before the tornadoes struck. It concludes that Taranaki – particularly New Plymouth – is the most dangerous place in New Zealand for tornadoes. Taranaki accounts for 12% or more of national tornado occurrences and over the last 56 years, has been hit by at least 1 per year. The most severe have maximum wind speeds up to 180 km/hr with 10% having much higher. Apparently, the most common time for them to come ashore is between noon and 6pm. Thursday's swarm hit just before 6pm. Unless actually experiencing one, the general conditions were that of a severe thunder and lightning storm. The main weather conditions favourable for tornadoes are unstable north-westerlies with thunderstorms ahead of a cold front. Climate change predictions for Taranaki include an increase in westerly winds with

gale and storm-force winds likely to increase. Watch this space.

On a brighter note, no NZARM members personally experienced any major damage by the tornadoes. **Jason Loveridge** is avoiding tornadoes by staying in Switzerland for 5 months.

Darren Scown rides his motorbike like a tornado when he is not organizing the dispatch of 200,000 native plants. **Kevin Cash** lives in Oakura and was spared by the tornadoes by 60 metres. Kevin is busy planning the development of Council's new poplar nursery while preparing for pole harvest and dispatch from our leased nursery. **Dex Knowles** continues to sort out the problem rivers in Taranaki, as well as many special projects caused by the tornadoes. **Rob Phillips** is busy, busy, busy and is looking forward to Taranaki hitting Canterbury like a tornado in the Air New Zealand Cup. **Don Shearman** is enjoying being a "rippa" grade rugby supporter (under 6 years) but is also developing golf withdrawal symptoms. **Kara Pranker** continues to put heart and soul into the Lake Rotokare project and even coerced Helen Clarke to part with \$600,000 for the cause.

Farewell from the province with the freshest air in NZ.

Don Shearman

CANTERBURY

Well Canterbury region is a work in progress – **Dave Maslen** has handed in his hat as regional co-ordinator and the Timaru office of Environment Canterbury has picked it up – myself (**Judith Earl-Goulet**) and **Julia Laming**. I know some might think that having two people sharing the co-ordinator role is just proof that nobody can be a substitute for Dave. Watch out for his head size next time you see him.

Well I have little to report about NZARM in the Canterbury region. Having recently stepped into the co-ordinator role we have been trying to find out what our members want, what areas they would like to have an event around and to also see if we can get some new members. Given the slow response to my e-mail Canterbury is either a bed of contentment, everyone is overworked or apathy is abound. If you have a burst of inspiration or you did not get my e-mail then please get in touch (judith.earl-goulet@ecan.govt.nz). We would be really keen to partner up with one of the other regions for an event so keep that in mind as well.

Judith Earl-Goulet & Julia Laming

NORTHLAND

The extreme rain even in late March has been followed by a wind-assisted downpour this last week. While the flooding of Kaeo and the PM's opening suggestion of moving the town have attracted the headlines, the ferocity of the wind has caused a greater and possibly longer lasting effect on primary production. Avocado orchards with a high proportion of this years crop lying on the ground are bad enough, new growth that would have carried next years crop has been broken off so affecting next years production, and trees have been uprooted, putting back production 7 or 8 years until new trees begin producing.

Pastoral farmers have been affected too. By not having power and not being able to control grazing with electric fences for four or five days, stock have consumed a lot more feed than most farmers can afford. Fallen trees have knocked down permanent fences as well further reducing the ability to control grazing. As well as whole rows of shelterbelts tipping over, particularly where they have a drain along one side, mature trees, including natives, have just snapped off.

People in flood-affected areas have noted how dirty the floodwaters were in this event. The March 29 event caused slipping and this event has carried all the previously dislodged sediment downstream. There may well be some areas where farmers will have to regrass the deposited sediment as it has completely buried the grass.



I was totally unaware of all this as I only arrived back from sunny Queensland on Friday afternoon and went down to Hamilton rather than heading home. Quite a contrast from the cloudless and totally rainless days in Queensland to the opposite here in Northland. I am currently working on a trade deal, water for sunshine, with southeast Queensland. Brisbane is desperate for water. Wondering whether we could use supertankers and the port at Marsden Point to ship water over and back-load sunshine. Anyone interested in investing in the venture should contact Bob Cathcart.

Bob Cathcart

Letters

Only one letter to the Editor this time around.

Dear Andrew,

Heartiest congratulations to all responsible for the new format and layout of the Broadsheet. The illustrations are excellent and even I have no trouble reading the print overlying colour.

Broadsheet has come a long way in half a century, although in those days the editor was also publisher. Firstly, having chatted up the office typist to produce the sticky, inky template for each page, the handle of the Gestetner was turned until production was completed.

I can imagine a proportion of your readers asking what's a "Gestetner"? They are part of a generation that can't believe that the world could progress before the introduction of computers, Google, cell phones, etc. The Editor's problem of extracting material from members remains unchanged!

I am more than a little concerned at your writing letters to yourself. It is akin to talking to yourself. If the next step is to start

arguing with yourself, the final step is "off the edge". Hold back; we can't afford to lose you.

Last September we downsized from a four-hectare block to 1,100 square-metres on top of a rock cliff forty-metres above the river close to Alexandra. Hopefully in the comfort zone when the next big one comes down the Clutha River.

As I write this Central Otago has been under an inversion layer for a week. Outside temperature at -4 degrees, and visibility down to 1 km. At least we are free from tornadoes ripping through the place or 25mm of Northland precipitation battering the roof. Those with sense and money have long since fled trans-Tasman (or trans-anywhere). The rest of us are hoping that the effects of global warming will [not?] be felt anytime soon!

May I wish the NZARM Conference every success and a very positive future.

Graeme Anderson

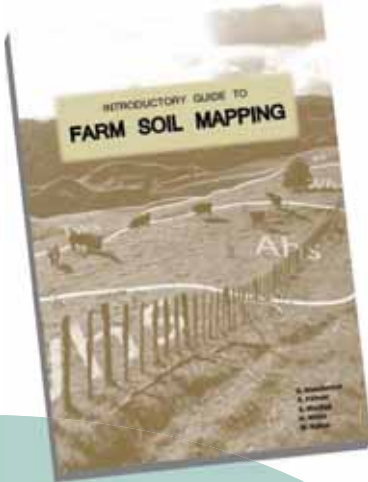


An early Gestetner stencil duplicator

BROADSHEET is available electronically in full colour.
Download from www.nzarm.org.nz

New soil mapping guide

A new guide on mapping farm soils has been published (by your Broadsheet editor no less), designed to fill the gap between high-end soil survey and those just wanting to find out more about their local soils. While the original audience was land holders, there has been a somewhat surprising interest from the resource mgmt community.



Soil information is needed by farmers, because they are the ones who use and manage soil resources everyday. Put another way, it is farmers - not policy makers or regional councils - who make the day-to-day decisions that determine whether soil use is good, bad, or in modern parlance, sustainable or unsustainable.

Funnily enough, we have some excellent soil-information resources for regional and national purposes. However, soil information for those who use and manage soils everyday is very hard to come by. Few farmers in New Zealand can actually source a soil map at a scale that is suitable for farm management purposes.

Speaking for myself, being able to map soils used to be a real challenge when it came to doing land resource inventory (LRI) and subsequent Land Use Capability (LUC) classification (particularly on higher class land where soils

become the major classification consideration). But after a while it became clear that it's just a matter of interpreting the landscape through a different pair of spectacles, and using easy to recognise features of soils to map out their location.

Which is what this introductory guide is all about - practical mapping for practical people. It is designed to help anyone map and investigate soils at a level of detail that is correct for farming purposes. For those who want to go further, it also provides a springboard into the more challenging profession of soil survey.

While not the original intent, we are now making the guide available to resource mgrs. Currently only the E-book version is available, but the hard copy version won't be far off. For more information contact the Broadsheet editor (details below).

Sponsorship

NZARM welcomes possible expressions of interest regarding sponsorship of this publication. Successful sponsors could receive preferred advertising and promotion through Broadsheet and NZARM's annual conference. For further information please contact the Editor.

Next issue...

Broadsheet is now published three times each year (April, August, December).

Letters to the editor policy

We encourage reader participation and welcome diverse or varied opinion, but reserve the right to decline inappropriate material. Because of space limitations, all letters should be no more than 300-500 words in length. Letters become the property of NZARM on publication. We will not knowingly publish information that is factually incorrect. You can send us letters via email or regular mail to the editor:

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