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BROADSHEET

NEW ZEALAND ASSOCIATION OF RESOURCE MANAGEMENT

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NEW ZEALAND ASSOCIATION OF RESOURCE MANAGEMENT
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Broadsheet is a newsletter of the New Zealand Association of Resource Management. Authors must be consulted before their articles are cited in publications.

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. Unless specifically indicated otherwise, opinions expressed in the Broadsheet are not to be regarded as the official view of the Association. Copy sent by E-mail is preferred, although typed copy is also acceptable. Items can be sent to:

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In this issue...

Editorial

Dear All,

Broadsheet has a new editor. But firstly, full credit & respect to Chris for his thirteen odd years of commitment, and a big thanks from all NZARM members for his selfless contribution to a job that no one seems to want. It took a full year of persistently asking for a replacement, which is a bit of a sad reflection on NZARM as a whole. Chris has put in a lot of his time as Broadsheet editor, and can move on with the assurance of a job well done. Our immediate past president also has a few words of thanks on page 3, and a less than inspiring footnote for the new editor.

As for the new editor… I'm an ex-shepherd from the Hawkes Bay who went to Massey for a few years, and popped out the other side with an over-priced bit of paper saying I'm a soil doctor of sorts. Presently working at AgResearch in Palmerston North as a lower order scientist, which means I spend far too much time sitting in front of a computer doing jobs no one else wants (which seemed to be part of the Broadsheet editor job description). Focus areas include whole farm plans, soil information in farming, practical application of GIS, and paddock-scale variability of soil & weather factors in pastoral hill country. That's me in the photo on my 1954 British-oil-leaking Francis Barnett.

Introductions aside, this Broadsheet can be considered as a bit of a transitional issue. I've tried to keep it faithful to Chris's layout & format, and will keep doing so until someone suggests otherwise. I'm just the editor who puts everything together. If you don't like it, send me an email or a letter, or pin me down at the Conference in Napier this year. After all, NZARM is nothing without its members, and Broadsheet should contain the items of interest that you want. We're very open to suggestions for improvement and refinement. Similarly, as editor, I'm very interested in receiving views & opinions from those who don't usually contribute to Broadsheet (see the P.S. below). Drop me a line if you want to contribute but are a bit hesitant about how.

Details for this year's NZARM Conference are on page 33, and registration forms should have been enclosed with this Broadsheet issue (if not, contact Simon Stokes). Looks like a good one, and we thoroughly encourage your support and hope to see you there. It's always an opportunity to catch up with like-minded individuals, learn a few things, and this time around we get to enjoy the Hawkes Bay sunshine & wines.

Cheers

Andrew Manderson

PS. If anyone wishes to jump on a soap box and have a rave, feel free to send a letter in to the Editor or if something is really getting to you how about a Guest Editorial?

A big NZARM thanks…

Editors come, editors go, but Broadsheet carries on…

This is an historic occasion for NZARM in that it signals the end of an era and of course, the beginning of a new one as Andrew Manderson takes up the reins as Broadsheet editor. So it is a good time to look back and acknowledge the job that Chris Phillips has done over the last 13 years in the job. It's one of those jobs that nobody really seems to want, despite its central role in NZARM, and Chris has fearlessly stepped into the breach year after year to make sure that the Broadsheet keeps coming out. And at the same time he has set up the NZARM website to broaden our overall communications package for members.

It'd be nice to say he has done so without complaint, but let's face it, it has been tough getting contributions from a widespread, busy, distracted membership who believe that it's someone else's job to keep the Association going. It's the kind of job that could drive a man to distraction, or drink, and at times it has done both with Chris. You'd think that a smart guy with as many degrees as Chris has would have dropped it years ago. But it's been one of those things that he has always seen as a vital part of the organisation and so was prepared to keep going until another volunteer[1] came along.

For those of you who don't know, besides being President of NZARM Chris is also a Scientist at Landcare Research, where his specialties are erosion, slope stability, and integrated catchment management. So he is not only an expert in our core area of interest, but he has also shown that he knows how to survive the CRI obsession with restructuring. That's impressive!

So a big thanks to Chris for his longstanding commitment to the Broadsheet, and we all hope he enjoys his time as President. And while we're at it, thanks to Andrew for volunteering to take on the editor's job. I'm not sure whether he intends to challenge Chris's 13 year record in the job, but maybe if we all help to make his life easy he'll be persuaded to stick around for a year or two at least. I'll just take this opportunity to put in a request for everyone to give some thought to what you'd like to read in Broadsheet, and consider how you can contribute that kind of material yourself.

Alan Campbell

[1] Sucker

Letter to the Editor No. 1

Dear Chris

As V.P. of the Otago Goldfields Heritage Trust I visited Kurow recently, which was host town for the finish of the Trust's annual cavalcade this year (2004). Totalling 700 riders, wagoners and walkers approaching from all points of the compass over 3 days to 11 days travel.

On being handed a Kurow town map, I was very pleased to note Maxwell Place had been given to a triangular area of lawn and matching trees, on which Ross Maxwell's 3 roomed cottage had stood, locally known as "The Ruins".

There are few of his contemporaries still around. Ross was appointed as Soil Conservator to the Waitaki Catchment in 1947. Private office accommodation was very scarce in the post-war period hence Ross had to make do with what was available. Latterly he took up board and lodgings in Kurow's top pub. A very satisfactory arrangement for a single field officer, working broken hours over long distances.

Ross became Chief Soil Conservator to Waitaki Catchment Commission whose offices are now recycled into Kurow's medical centre (conservation of health resources). I can think of no more fitting memorial to a person who served the district and town well throughout his working lifetime. It could be quite unique amongst resource managers in New Zealand. I only trust Meridian Energy has no plan proposed to put a canal through the place.

Incidentally, I paid a brief visit to Tara Hills Research Station, where many of us commenced conservation work in the 1950's. We celebrated 50 years of its existence in 1998. Perhaps just as well. The property's flats and hill country are in great condition following drought-breaking rains. However no research staff are on site. Office, laboratory and residential buildings are planned to be rented or become backpacker accommodation. A farm manager and his family live on the property which he tells me is now run as 90% commercial farming and 10% research.

It amazes me that once bureaucratic number crunchers remove the bolts, hold quickly or the wheels start dropping off.

Regards Graeme Anderson
17 March 2004

(Editor's note: this letter was discovered during the handover to the new Editor. My apologies to Graeme for it taking over a year to get into Broadsheet – Chris)

Letter to the Editor No. 2: Thoughts on a Conference

I joined NZARM because I got a discount on my conference fee if I did. Up until then I had never heard of it, but the conference was just down the road in Gore, the speakers and field trips looked interesting so I thought – why not?

And it was a good conference, though it suffered from the defect of all conferences – too many speakers and not enough time for discussion. Speakers expand to fill their time. The good ones can be very concise if they want to be but, given time, they just widen the subject, the political ones spread out to exclude questions and the unpractised drag it out painfully as a part of the learning process.

I have sympathy only with the unpractised. There must be a time – a third of the time ? – for questions and discussion, preferably recorded and included in any post-conference compendium of papers. Otherwise all we get is the uncontested view of the speaker.

As a forester I found the agenda a little disconcerting. The opening address was aided by a map and statistics of land use in Southland. I was sitting at the back and am short sighted, but where was forestry in either ? I never saw it. An unfortunate omission of the land use making least use of agrichemicals and most resplendent in biodiversity and causing least problems for resource managers.

Gary Morgan says I am being paranoid. Resource managers deal with land use problems, not virtues, so if you don't cause a problem, then a good resource manager has to find one – in this case wilding trees and shivery fears of water theft.

So we heard about the Dairy Accord, or how to be showered with praise for doing what you ought to have done without having to be told, but not about Forest Stewardship Council certification where you have to run to the rules and judgement of third parties, where continued improvement of practice is mandatory, and also where Southland had a New Zealand first – how many of the Southland contingent knew about that ?

And naturally we spent a lot of time on the Manawatu storm, where it seems the lessons of Cyclone Bola had been forgotten. Fragile geology under the wrong land use collapsed and wiped out use of the flood plain, celebrated by a MAF announcement exactly a year later of a scheme to increase hill country production by $100,000,000 a year, using nitrogen fertilisers.

What we did not have was any plea for properly vegetated vulnerable land. We were told that 'we now know' that a good vegetation cover does not dampen down extreme rainfall. Brilliant – 50 years ago I was reading that in textbooks 50 years old themselves.

But the figures speak for themselves; the volume of water may not be reduced by woody vegetation but the sediment load certainly is – what was the slip area comparison after the Manawatu storm ? My memory is something like 8 times for pasture versus woody vegetation, and I have read since that if 20 – 30% of that pasture had been in trees, slips would largely have

been prevented. Yet we still had one speaker wringing hands because such a solution was too difficult because it would reduce water yield.

Then we had Morgan William's presentation on the need for change in our attitudes to agriculture – the end of the golden weather of unconstrained commodity production and the recognition that there are constraints on land use which even the most nimble of Lincoln scientists can't find a solution to or an equation for externalising the costs when the hills fall down again.

But it was a good conference and I am glad I went, only at the next one please set aside time for questions. There is clearly work for soil conservators yet, only next time don't be ashamed of good land cover.

John Purey-Cust

Letter to the Editor No. 3:

Dear Chris

As one of the first of many conservation and research staff appointed to Tara Hills (1950/51) I sympathise and identify with Malcolm Douglas' comments in the Otago Daily Times article [*see next page*].

Does the Association have views on the reduction of AgResearch staff?

Is the trend inevitable and what future effect will it have on resource management intake?

I know Malcolm personally and what he is saying comes from his heart.

Kind Regards
Graeme Anderson

Reply from President

In response to Graeme's question, the Association has to date not made any formal stand on such issues. Like Malcolm, we can express our concerns about such issues to the appropriate places/people.

NZARM has generally not been a lobby for any particular sector or group – perhaps we should? The NZARM Exec meeting on July 13 will discuss if, and how, we should become more active in such matters.

Chris Phillips

Monday, May 9, 2005 Otago Da

Loss of Tara Hills blow to high country farming

Tara Hills high country research station Is a national asset worth retaining, writes MALCOLM DOUGLAS. Its proposed Closure is an indictment of policies of Funding that do not recognise the value Of applied science.

THE CROWN Research Institute AgResearch, has Announced the imminent closure of Tara Hills High Country Research Station at Omarama (ODT, April 11, 2005). Is it wise to close the only high country research station in New Zealand considering the present interest in tenure review, high country management and Upper Waitaki irrigation development?

Why would the CRI sell Tara Hills when the wool and livestock returns make it a profitable business? Dr Andy West, CEO of AgResearch, noted the property rationalisation is a result of the reduction in public funding for agricultural science, especially for production research.

In 1992, there was a monumental change to science, when funding changed from bulk funding, directed by scientists, to top-down piecemeal contestable funding by committee and decree. No longer was there freedom or spontaneity, or trust in science. This has not favoured applied primary production research.

Primary production is still the engine room of the New Zealand economy and, today, the major part of New Zealand's efficient production is a product of past applied field science. The sad indictment of policies of funding based on competitive bidding processes, is that applied science is not seen as real science.

Tara Hills, a small pastoral run of 3300ha, was a product of the subdivision of the original Omarama Station in 1916. By 1948, it was badly run down and was purchased by the Soil Conservation and Rivers Control Council to demonstrate revegetation and land rehabilitation. At this time, world leading innovations such as aerial topdressing and seeding, and aerial baiting for rabbit control were carried out successfully. In 1965, Tara Hills was taken over by the then Department of Agriculture as a research station

A large range of research was undertaken on sheep-breeding, nutrition, fecundity, wool production pasture species, tussock grassland grazing management, fertiliser requirements, cattle breeding, and irrigation development. There are long-term grazing, topdressing, soil fertility, and pasture species records. Forest Research has long-term species provenance experiments and shelter species and performance trials. Latterly, the station has had no resident science staff and has focused, in part, on ultra-fine wool breeding in a joint venture with other merino breeders.

In 1948, there were 1240 stock carried and with development this peaked at about 11,000 stock units in 1986. Today, there are about 9500 stock units carried, which includes an elite 17-micron merino wool flock of about 7500 stock units.

The intangible, less quantifiable part of research is the responsibility of science to society. Research stations were places for learning and field-days — a free public good service. At Tara Hills in the 1980s, there were regular visits by high school classes, farmer and conservation groups, university students and frequent international delegations. This is part of the soul of science — teaching and passing on of experience, together with the experience of viewing and communicating.

Sadly, in the commercial contractual model of user pays now favoured by the Government, this is something of the past. The forum of science, the interchange of ideas and argument, has been stifled by the commercial imperative.

Crown Research Institutes are expected to undertake research and provide related services for the benefit of New Zealand. A significant portion of their money for public good research comes from bidding by their science teams for contestable funds proposed and allocated by the Foundation for Research, Science and Technology. These funds are in a straitjacket, focused on proposed and contractual outcomes.

The autonomy of a CRI includes the right of directors to make decisions for the good of the company, independent of political intervention. Corporate governance requires the best financial return to the Government and the people of New Zealand.

In 2003-04, AgResearch earned $67 million from commercial services (such as work for private enterprise) and $53 million from public funds.

It is a government role to protect the assets of the people, but who takes over that role when the CRI — a commercial science offshoot from government but owned by government — seeks to capitalise their resource? The CRI should not be able to capitalise its resources until an analysis is undertaken to quantify the resource value and the future potential of the resource. The process should be wider than the CRI board room.

There are about two to three million hectares of Crown pastoral lease in the high country, much of which still has development potential. Tara Hills should be retained as a high country research station to ensure a base from which to research high country production improvements, building on the record of the past 56 years.

Tara Hills has shown that sustainability of farming in the high country is a reality but there is a need for further study into production methods. Tara Hills should be the window of the high country, to encourage understanding and learning.

Tied closely to this is the present debate about land tenure review, and the management of the conservation estate with Crown pastoral leases. In order to reach a balanced perspective, urban society needs to be educated about pastoral agriculture to overcome the myths and generalisations advanced by the conservation lobby.

The water allocation for large scale irrigation development has been recently confirmed for the Upper Waitaki. The long-term irrigation water use records at Tara Hills, provide a strong foundation for further investigation into irrigation method and management. There is a need to introduce new crops, to diversify agricultural opportunities. The ultra-fine wool flock needs continued development. These types of long term science programme do not sit well with short term funding and commercial imperatives.

The proposed closure is the latest casualty in the downward spiral of applied science and research. No minister in government over the past 15 years has been prepared to accept that the top-down contestable funding process has removed the soul from New Zealand agricultural science. The governments got it wrong. The asset will be sold because the Crown will not interfere with a CRI decision.

The chairman of AgResearch, Rick Christie, has noted the sale was in line with the general intention of CRIs to divest themselves of entities like Tara Hills, which would be better positioned in the private sector. Who then undertakes the public good?

• *The writer is a retired scientist who was officer in charge of Tara Hills from 1980 to 1987.*

Scientists want extra money for research

By Neal Wallace

The head of the country's largest science company has called for the amount of money New Zealand spends on research to be doubled.

Dr Andy West

AgResearch chief executive Andy West said there appeared to be a commitment from the Government to increase the amount it spent, and the whole science community should support its efforts.

However, that would also mean an increase in the amount invested by industry.

At a deer industry conference in Te Anau recently, AgResearch's agriculture and environmental science manager, Peter Benfell, said New Zealand ranked 20th among members of the Organisation for Economic Co-operation and Development with what it spent on research and development as a percentage of gross domestic product (GDP).

New Zealand spent 1.17% of GDP on research and development, but Government spending on the pastoral sector in real terms had fallen from $120 million in 1992 to $80 million in 2004, Dr Benfell said.

The Government would expect to see an increase in the amount the private sector spent on research before it would increase its share, he said.

European Union countries' investment in research and development averaged 2% of GDP, but they planned to increase that to 3%.

Dr West said New Zealanders had to decide if science was important and, if so, which science sector would provide the best return on extra investment.

"If agriculture was considered the engine room of the economy, then we have got to do something to turn the trend line around," he said in an interview.

He hoped the science community would work with the Government to convince the public such an investment was worthwhile.

"We need to work in a partnership with the Minister [of Research, Science and Technology, Steve Maharey] to move the economy forward in a sustainable way, and that depends on investing more in education, science and technology," he said.

Obituary: Ross Mac Arthur

Ross passed away at the age of 82 on Friday 10 June 2005.

Ross left the NZFS to join the Southland Catchment as its first soil conservator in 1955. He left in 1957 to take up the position of Chief Soil Conservator to the Marlborough Catchment Board, a position he held until retirement in 1985. In those years he made a considerable contribution to soil conservation/land and water/resource management. At times he was forthright, sometimes dogmatic and never one to back down from his convictions or beliefs.

I first met Ross at a Soil Conservators Association Conference held at Massey in 1957 when I became an unsuspecting third party in a discussion involving Ross and the late Doug Dick (then Chief Soil Conservator at North Canterbury) who mirrored Ross's forthrightness and enjoyed debating. I escaped later without participation.

In Southland Ross devoted much effort to the high country and to re-vegetation activities, drawing on and reflecting his forestry training.

The Marlborough Catchment Board was established in 1955 covering an area of little more than the Wairau catchment. Over time and with changes in law the district grew to include the Sounds, Kaikoura and the reluctant Awatere. The forestry background stood Ross in good stead as he again concentrated initially on high country erosion control and re-vegetation. The eroded Wither Hills provided another challenge which later led to the establishment of a catchment control scheme over the area.

The steep, infertile and often weedy hill country of the North Bank which also extended into parts of the Sounds defied well intentioned attempts to establish and maintain pastoral farming virtually since settlement. Ross had an answer and that was to introduce an alternative land use – commercial exotic forestry – cropping P. radiata.

A union of local authorities in the region saw the establishment of the Marlborough Forestry Corporation, managed by the catchment board and involved in the acquisition of land, establishment and management of forests. This initiative led to a rapid uptake of the forestry land use option by private and commercial interests. Some years later Ross was closely involved in testing alternative low site impact logging techniques. This was in the interest of both onsite and offsite resource/environment protection and the economics associated with steep hill country logging.

Ross maintained more than a passing interest in science developments related to land management. The advances made in aerial photography and satellite imagery was but one. Most marvelled at what was now available and just how much information could be obtained without leaving the office. As a result of studying high country imagery in the Upper Wairau Ross identified an area with special characteristics which was later developed to become known as Rainbow Ski field.

He also contributed to soil studies on the Wairau Plains which led to the vineyard landscape of today.

Ross suffered a stroke some ten years before his death and consequently suffered ill health with limited speech and his movements restricted to a mobility scooter. Alzheimer's eventually effected his navigation and his scooter had to be parked up.

Dex Knowles

Regional Roundup

Bay of Plenty

Wayne Smith has had Doug Hicks completing a soil disturbance assessment of the Bay of Plenty Region using the latest version of the point sampling methodology that Doug has developed over the last few years. The National Land Monitoring Forum (NLMF) is looking to write this up and include it in the National Land Monitoring Manual it is compiling. Also of interest to the NLMF is the S-Map concept of a national soils mapping database that is being developed by Allan Hewitt and his team. Among a myriad of other work, Wayne continues to be involved in the ongoing evolution of the Land Resources systems and databases with a new spatially enabled Care Group module nearing completion and scoping of version 2 of the Environmental Programmes database well underway. He notes that the fishing off Ohope Beach at Queen's Birthday weekend was awesome with a limit bag of snapper (up to 3kg) in one and half hours. He and neighbour **Norm Ngapo** continue to seize every chance for a feed of really fresh fish – catch them at 4pm and eat at 6pm.

René Weterings is currently on a short term assignment working with the World Bank on a salvage logging program for the Government of Laos as part of the funding criteria for a US$1.2 billion hydro electric power project on the Nakai Plateau. He is advising the Ministry of Forestry with the initial extensive planning required for the salvage of the mixed deciduous and hardwood forests prior to them being flooded when the dam is completed in mid 2008 ensuring the stringent conditions placed upon the project are met. The work involves advising and assisting with the preparation of the various plans (technical, environmental, social) that will be required, organisational structures and contracts. This is a significant challenge since there is no Code of Practice for harvesting in this country, no practical field enforcement of environmental legislation and the type of equipment available is totally unsuited to ensuring these conditions can be met. Notwithstanding all that, the salvage will introduce some 300-500,000m3 of wood over the next three years into a market that has neither the faculties, infrastructure or efficiencies to handle such a volume to the conditions required under the loan agreement. No sweat, the business side of the army apparently will have this under control in short order. More information can be seen on the project website www.namtheun2.com.

Norm Ngapo has been busy processing consents for Environment Bay of Plenty, and carrying out land resource inventory surveys for subdivision applications in the Rotorua and Whakatane districts. In between painting the house, working, and helping with the clean up at Matata, the limited amount of fishing off the beach has been productive.

Newish member **Robyn Skelton** has settled into her role as Central North Island Regional Co-ordinator for the NZ Landcare Trust. Her work is predominantly in the Bay of Plenty and she supports community groups as they address sustainable land management and biodiversity issues.

Robyn assists the groups with facilitation of meetings, strategic planning, newsletters and publications, gaining access to resources, funding, information and advice. Within this role she works closely with the relevant councils, agencies and science providers. Robyn comes from an environmental education and research background mixed with communication and facilitation work. She works from home, near Katikati.

A number of the Landcare groups are estuary-based which brings with it resource consent requirements, and issues. The Waikaraka Estuary Managers Inc is one group that Robyn supports. The group have recently received a Green Ribbon Award. In addition, they have been successful in their resource consent to manage mangroves in their estuary. With support from Environment Bay of Plenty and other agencies this group achieved a non-notified consent involving a conservation vs sustainable management issue.

Glenn Sutton is enjoying his new role on the NZARM exc. as the national Regional Coordinator. "Killer" Whale has taken over as the sole BOP Regional Coordinator with "Nuke-em" Ngapo and GS assisting. The three of them recently had a very relaxed afternoon with **Wayne Smith**, celebrating Wayne's 60th?, 50th? birthday (does it really matter at his age!). The cunning old fox kept it very quiet that it was his birthday - we all thought that he had invited us for a social get-together.

Work-wise, Glenn is continuing with environmental training and preparing consent applications for Environment Bay of Plenty's lakes water-quality trials. In addition, he has completed quarry audits; a resource consent liability assessment for a large company and prepared consent applications for water takes and discharges associated with metal processing operations. A particularly interesting project was the preparation of a plan of potential native vegetation reserve areas for a client - this project also involved **Willie Shaw** and his Wildland team. The project required crawling up and down some very steep slopes and negotiating some very tenacious blackberry. Regrettably there was very little ungulate sign.

Glenn is also a member of the newly formed Whakatane Kiwi Trust, which is being established to help protect and enhance the Whakatane Kiwi population - more on this later.

Andy Woolhouse is spreading himself over a range of projects, Much of his time with Carter Holt Harvey in Tokoroa has been collecting evidence for the Taupo DC appeal re roadside tree planting setbacks. This has produced some interesting data. Currently he is hoping that Taupo DC will settle. Other interesting bits are environmental unit standard training, ongoing. He has just developed a unit standard course for sawmilling, similar to the course that Glenn Sutton developed and delivered for pulp and paper. ISO 14001 is a good driver for environmental training, but he hopes (and believes) that people come away with more awareness and hopefully a better attitude to environmental protection. Andy will be linking up with GS again to revise the LIRO Forestry Code of Practice (hopefully with a more appropriate name). They will probably be tapping a few members on the shoulder for advice.

Andy has also squeezed a bit of resource consent processing for Vince at EW, and says that it is interesting seeing the process from the other side of the fence - but effectively apply the same

criteria that he would if he was preparing a resource consent application himself. He's not sure whether that makes him a good or bad consent processor, rather than a good or bad applicant!!!

John Whale and **Ruth Feist** are still on track with the Environment Bay of Plenty Regional Water and Land Plan. Next phase is getting all the agreed positions written up as memoranda and draft consent orders for sending around and signing off by the Environment Court. Many remaining appeals will be negotiated with appellants and an Environment Court Mediator in the first week of August.

Ruth has recently returned from a jaunt around Turkey. Soil conservation officers would be horrified in Cappadocia, where active erosion is a good thing – creates those interesting landscapes that draw in the tourists! Every piece of arable land is used, including tiny bits with one or two apricot trees and a grape vine. Not a lot of riparian retirement, but then there are not a lot of streams. Troy is a site now surrounded by flat agricultural land, the harbour having silted up over the centuries. No half-naked Brad Pitt to be seen, which Ruth found very disappointing.

The hearings for the review if the Environment Bay of Plenty On-Site Effluent Regional Plan commence in the last week of June. This review includes requirements for some new (advanced treatment) on-site systems in parts of the catchments of some Rotorua lakes to achieve nutrient reduction. Environment Bay of Plenty is also part of a consortium trialling advanced on-site systems in Rotorua to see which ones can achieve the plans nitrogen limits, i.e. capable of reducing total nitrogen in the discharge to a concentration not exceeding 15g/m3. Results will be out early 2006.

Tony Dunlop and **John Douglas** have been busy with their teams with the cleanup at Matata. Poor Matata really did get hit hard, the amount of debris (large boulders and trees) in the flow was a serious eye-opener. How somebody didn't get killed is just amazing. How the Whakatane DC was convinced by developers to allow housing over an obvious outflow fan is unbelievable. There are photos on the Environment Bay of Plenty website if you are interested: http://www.ebop.govt.nz/CD/MatataTauranga-May-2005.asp

Clive Tozer reckons the region should now be called the 'Bay of Plenty of Storms'. The days of enjoying the sound of rain on the roof have well gone for the Operations team at EBOP. The last 12 months have been unbelievable! The 18th May Matata storm saw 95mm fall in one hour at Awakaponga several km away from the town on the Plains. We can only imagine what fell in the hills behind the town. Tauranga got 346mm in 24hrs. The Interdecadal Pacific Oscillation is for real!

Andrew Wilson the chairman of the Canberra Sub-section of the Bay of Plenty Branch of NZARM has had the luxury of visiting Canada recently in early winter to visit some of the expansive forest areas in Alberta. Standing in three foot of snow and looking at trees that were 80 years old and only 6 inches through. When it snows and the ground freezes then there are no erosion or runoff problems associated with logging operations. All you have to worry about are bears!!

Andrew saw the first real rain in Canberra for the last two years, when he says real rain, its all relative!! They received about 50mm. "Not much" you say but when they have been measuring rainfall in fractions of a millimetre for two years it made a real change. Andrews little three year old wondered why the shower was on outside. Hopefully this means that they will continue to get some rain as it is urgently required as even in town they have trees dying from lack of water.

Lawrie Donald is keeping busy (shining the seat of his pants), while Bob and Barry the contractors, Daryll Hall and Phil Dykzeul are out doing all of the real work. Environmental Programmes on private land and the Care groups on mostly public land are the bulk of the Tauranga offices' output. One of the community Care groups (Waikaraka Estuary Managers) that we operate in partnership with the Landcare Trust was highly commended in the Green Ribbon Awards for their endeavours in environmental enhancement.

You may think after watching the news that we have had a hammering from the weather here at Tauranga. That is true if you live near the coast. The storm however had very little impact on the streams north of Tauranga and there is very little damage to the hills. Tauranga City and Matata were it really, the results as you have seen were devastating.

John Whale

Taranaki

Another financial year has passed for the Land Management team with all Annual Plan targets having been met and exceeded. Over 200,000 native plants have been dispatched for planting this year which has kept everybody very busy. Three new NZARM membership applications are also underway.

After years of haranguing, **Darren Scown** has finally capitulated and sent off his NZARM membership application form. Stories from past conferences and promises of wine trails in Hawkes Bay were too much. Darren has been preparing predominantly riparian plans for the last 5 years and is very adept at sorting out "too hard baskets".

Kevin Cash also has his NZARM membership application in the mail. Kevin has been with the LM team for over a year now preparing riparian plans and by the time of publication, he should have cracked 100 plans for the financial year. All his energy will soon be going into the hillcountry where he will focus on Farm Plans.

Kara Prankerd has now become a permanent member of the Land Management Section and is the third person to apply for NZARM membership. Kara has a strong interest in ecology which has resulted in some interesting debates with her Father who is a dairy farmer. Kara completed her degree at Massey University.

Don Shearman is relieved to see the end of the native plant scheme for the year and will be putting out the tender for next year's native plant supply in another month. Don also ran a

riparian field day for farmers on the Waiokura Stream Catchment. The Waiokura Stream is one of five selected throughout New Zealand with the aim of improving water quality through implementing best farm management practices. A handy tip from a farmer to attract people to field days: “free beer and lots of it!”

Dex Knowles has been exceptionally busy as usual. He has been doing preparatory work for the Regional Land Transport Strategy and reviewing regional passenger services. As a result of the flooding in Waitotara last summer, Dex has completed willow clearing trials which will enable a long term work programme to be formulated. More interestingly, Dex recently visited South Australia on holiday but also managed to look at water conservation practices and water quality issues at the same time. Seeing graded banks, contour furrows and grassed waterways still being constructed as soil/water conservation practices was a real buzz. He also managed to check out the surf on a couple of artificial reefs as Coff’s Harbour and Adelaide respectively.

Lachie Grant is organising another public planting day for the Herekawe Stream walkway project. This continues on from the planting that was done there last year. Lachie was also involved recently in a “Treescaping Taranaki” field day with the aim of inspiring farmers to plant more trees on their farms. He also has 3 Regionally Significant Wetlands to protect and enhance.

A guide has been prepared on the Council's water allocation policy and rules. It identifies current water use and availability in the region's main catchments and contains case studies on water conservation etc. It also contains good practice tips on efficient water use. The guide is currently being printed and will be available early in July.

Don Shearman

Waikato

John Quinn has been part of a team formed by ARC (led by Chris Hatton and Dave Rowe) that has developed an ecological valuation method for scoring the ecological performance of perennial Auckland streams (see ARC Tech Pub 254, Rowe et al. 2005). The method is now being trialled by several Auckland consultants. It aims to provide a basis for assessing stream values, management options, and mitigation needs to offset environmental damage when streams are impacted by urbanisation.

Dairy InSight has funded a project, led by John, on farming and waterways funded for the next two years. It aims to develop conceptual models of the links between farm practices and waterways values in the national focus dairying catchments in the “Best Practise” project at Waikakahi (S. Canterbury), Bog Burn (Southland), Inchbonnie (Westland), and Waiokura (Taranaki). The intention is to provide improved targeting on-farm actions for aquatic environmental protection. Providing a suite of models covering much of the range of environmental conditions within New Zealand should provide regional templates for further modification to the local context of other catchments with the regions. This builds on a pilot project at Toenepi (Waikato).

Vince Udy has been processing resource consents for the removal of plantation forests and environmental monitoring associated with a change in land use from forestry to agriculture on the CNI. The recent use of a consultant to assist on the processing of land use consent applications has reduced the pressure of the task.

Monitoring of plantation forest and wood lot harvesting with a recent emphasis on the Coromandel Forests following the significant rainstorm event on the east coast of the Coromandel and Bay of Plenty. This rainfall event resulted on damage to in stream structures and slope failure both within and outside of plantation forests. Considering the volume of rainfall 500-750mm reported by locals in the Whangamata area, the damage could have been more significant, which is a reflection on good environmental management by forest managers and EW.

EW has seen great progress in the first year of the Coromandel - Peninsula Project writes **Emily O'Donnell** from Whitianga. With continued partnership between DoC, Thames Coromandel District Council, Hauraki Maori Trust Board, Environment Waikato and the communities of the Coromandel. Comprehensive consents have been approved for flood protection work on the Thames coast, channel maintenance, vegetation clearance and stop banking. The work has begun with great community support.

Goat and possum control teams are now up and running with major aerial possum control operations to begin in August. Close links between DoC and Environment Waikato has seen a joint approach to consultation so that all issues can be addressed and support offered to landowners for soil conservation, restoration as well as pest control. There has been a very positive response from the communities who are pleased to see a mountains to the sea approach. Where biodiversity is a targeted outcome not a by product.

About a third of dairy farmers in the Coromandel zone are now actively involved with work with approximately 18,000 natives to be planted this season. Greatest amount of time is still spent on information and advice, most people just want the support and financial assistance is a bonus.

Alan Campbell has continued his role as the head honcho of Environmental Education at EW including co-ordinating the Clean Streams project across the Waikato region. Alan has also been involved in the Ecologic case and a summary of this is outlined in an article later in this edition of Broadsheet.

Over the last couple of months **Michelle Gibbs** has been gearing up for the end of financial year by inspecting all Clean Streams and Soil Conservation works and organising payment to the landowners. Michelle has also been involved in a few native planting days and has been involved with projects promoting biodiversity in the Waikato Region.

Hamish Rennie – Geography Lecturer at Waikato University. The first half of each year is the best for me – having pushed almost all my teaching into the second semester I can have an almost uninterrupted focus on research in the first semester. The last six months have been spent on three research projects looking at ways of either identifying communities or involving communities/stakeholders in environmental management. Recent MSocSc graduate Vinau

Cagilaba and I have just completed a review of various beach rating and award systems (e.g., Blue Flag, Blue Wave and Green Coast) which will be published shortly as an Environment Waikato Technical Report.

The other two projects have been with Eclectic Energy's Jill Thomson and funded by the Ministry of Fisheries. The first of these was the development of a GIS database of charter boat operators and this will become part of the NABIS online GIS on fisheries matters. The second, and still going, has been attempting to build a tool for assessing proposed co-management arrangements and structures that might assist in achieving the goals of fisheries management. A guideline for implementing the 'aquaculture management areas' legislation was completed in January and published in DSL's Environmental Handbook. The other major work focus has been development of a new 15-credit graduate paper on marine planning to try to help people come to grips with foreshore, aquaculture, fisheries and other marine planning tools. And in my spare time – I passed my exams to qualify as a national table tennis umpire! And if anyone is interested in the history of the commercial fishing sector in New Zealand I can thoroughly recommend *Hooked.*

The Department of Geography, Tourism and Environmental Planning has introduced a new 15-credit graduate paper in resource consents. Designed especially for new graduates working in councils or consultancies, it consists of a block two-week course on campus in July followed by online web-based work. Anyone interested should contact Pippa Wallace at the Department (07) 856 2889 or see flyers contained alter in Broadsheet.

Bruce Peploe is currently deputising as River and Catchment Group Manager while Scott Fowlds is on a fact finding mission in the Netherlands, Ireland and Britain. Bruce is understandably flat out juggling responsibilities and with the end of financial year coming up is relying on the Land Management team to ensure that all claims for soil conservation works and Clean Streams assistance are processed on time.

Jon Palmer has been heavily involved in end of year grant claiming for both clean stream and soil conservation scheme works in the Upper Waikato and Lake Taupo Catchments. Jon has also had some involvement with the conversion of forested land to dairy pasture in the upper Waikato – see article later in Broadsheet.

As for me, I have been continuing my role as the Engineering Site Representative for EW on the Tongariro Flood Protection scheme being constructed in Turangi. We are in the final stages of construction, yes I know it is very late in the year, and hope to have all of the stopbanks and other flood protection structures (timber flood walls) in place by the time this goes to print.

It continues to be a steep learning curve picking up the basics of surveying, levelling, contract management and river/civil engineering but it has been an enjoyable experience and one which I feel has considerably broadened my work experience.

David Perry

Nelson - Tasman

The Council's land and water team (**Andrew Burton** and **Trevor James**) along with Landcare Trust and dairy industry representatives have rolled out the Regional Action Plan for getting on with the business of cleaning up our streams. There was good support from our councillors for the approach being taken; they are impressed to see the industry taking on responsibility and are keen to help make things easier for landowners. There is money being made available for fencing/planting and the resource consent process is being made less onerous for those wanting to build bridges.

Trevor James has also organised public seminars on Water Quality and River Health in the Tasman District. He and Roger Young of Cawthron will summarise the results of a recently completed report on the State of Water Quality and River Health in the Tasman District. It summarises the results of TDC's State of the Environment monitoring programme, which samples water quality, macroinvertebrate and periphyton at sites throughout the District, and also includes similar data from the ICM programme and NIWA's National River Water Quality Network.

The Council has considered submissions on the proposed Rural 3 and 3A coastal areas earmarked for residential development. The proposed changes included some relatively tighter restrictions on the higher quality land, which were subsequently jettisoned in response to landowner pressure. Does it worry anyone else that there are so few mechanisms available for protecting this sort of land from the relentless urban creep/subdivision pressure? Even industries dependant on productive values of land can't find a united voice to speak with because their members all have an eye to capitalising on subdivision potential.

ICM news from Andrew Fenemor
Trout movement in response to flow variability. The ICM study of adult trout movement in the Motupiko/Motueka catchment led by the Cawthron Institute has had some unexpected outcomes. They initially tagged 49 adult trout in the Motupiko River in Sept/Oct 2004. Most of the trout have remained within the Motupiko River throughout the summer, although 3 fish have been relocated further down the catchment. Flows were relatively high throughout this summer, and so retained adequate habitat. However, almost half of the trout have gone missing, despite scientists searching most of the catchment by plane.

It's not clear if the transmitters have failed, or if the trout have been caught and removed from the river, or if the fish have gone beyond the search area. The 'Good Friday' 50-year flood had a big impact on the 22 trout that we knew were still alive and well in the Motupiko River. Almost 40% of them were definitely killed during the flood, while a further 18% disappeared during the flood. The latest download from the permanent tracking station indicated that two trout that went missing early in the study appear to have swam back into the Motupiko River, presumably to spawn. Wonder where they've been!!

Social Science progress
The ICM Human Dimensions research area has been producing some publications relevant to the question of how to engage communities in the quest for catchment scale sustainability. Check

out the following work, with more details available from Will Allen at Landcare Research Lincoln, or Garth Harmsworth, Landcare Research, Palmerston North:

Allen W.J. and Kilvington M.J (2005) "A role for integrated and interdisciplinary science: Getting technical environmental information used in watershed and regional-scale decision making." Chapter 3 in (Ed. J.L. Hatfield) The Farmers' Decision: Balancing Economic Successful Agriculture Production with Environmental Quality. Publisher: Soil and Water Conservation Society. pp. 45-61

ABSTRACT: Given the complexity and diverse social perspectives surrounding many watershed and regional-scale resource management issues, the challenge facing science is how, where, and when can it best contribute to developing the understanding that will support more sustainable decision making. This chapter introduces a collaborative learning approach to improve the use of information within environmental research initiatives. It illustrates this approach as a knowledge management cycle that helps different stakeholders access and integrate information more effectively, and ultimately changes how they see a situation and consequently go about managing it. It then looks at a similar cycle of science activities, but casts them into an interdisciplinary approach. Both cycles use examples drawn from resource management case studies in New Zealand. Focus is given to a key component of these cycles - that of improving learning, particularly in getting people to challenge their underlying assumptions. To achieve this it is suggested that interdisciplinary science teams need to broaden their membership to include specialists with integrative social skills.

*Garth Harmsworth 2005: Good practice guidelines for working with tangata whenua and M*ori organisations: Consolidating our learning. Landcare Research report LC0405/091*
(This report will be available shortly: http://icm.landcareresearch.co.nz)

Excerpt from Garth's conclusions: The good practice guidelines given in this report provide the elements to build positive relationships between M*ori, Pakeha, and other cultures. They indicate how to work together to achieve desired goals and outcomes for all New Zealanders through effective dialogue and collaboration, particularly through identifying the actions required for sustainable development and sound environmental management. M*ori bring to the table a unique set of skills and expertise based on over 1000 years of knowledge, and offer an important perspective in all decision-making. They are an integral part of any collaborative effort to achieve sustainable environmental management.

Coming Up

Lindsay Vaughan is organising a meeting at TDC of Regional Council land managers the morning of Wednesday 24 August. The day will include discussion of ICM research relevant to that group. This is likely to include riparian, sediment and water quality related research.

A joint meeting of the NZ Freshwater Sciences Society (formerly NZ Limnological Society) and NZ Ecological Society is being held in Nelson from 28th August to 1st September 2005. The conference theme is 'Ecology at the Water's Edge' and so will have a focus on topics such as river and lake margins, riparian management, and wetlands. As part of this there will be an Integrated Catchment Management (ICM) field trip concentrating on the Motueka River Catchment and

ICM research. Roger Young at the Cawthron Institute is organising the fieldtrip. If you're interested in more information about the conference see
http://freshwater.rsnz.org/conf05/Conference_2005.htm

Andrew Fenemor is also planning an ICM workshop - tailored to regional council and government needs - around this year's ICM Annual Meeting. The regional council workshop, organised in conjunction with TDC, will be held on Tuesday 8 November with a public field trip the following day. The agenda and venue are being developed - Andrew welcomes suggestions on which aspects of the ICM research you most want to hear about. Check out this website to find out what's being researched and to subscribe to alerts for updates: http://icm.landcareresearch.co.nz

Mary-Anne Baker & Andrew Fenemor

Canterbury

It's been a busy time over the past few months. Most noticeably, the hearing of submissions to the Draft Waitaki Catchment Water Allocation Plan commenced in Oamaru on the 20th of June, and looks set to run for at least 6 weeks. Having sat through a few days worth, and made a presentation myself, I suspect it is going to be a very long, though quite interesting process. This is at the forefront of water allocation issues at the moment , and the issues being raised encapsulate those being faced all over the county. Several interesting witnesses have already been heard discussing the relative merits of minimum flows and other alternative tools to regulate water abstraction. Throw in some highly emotive interest groups views and couple that with one of the worlds largest braided river systems, and you have the recipe for some very interesting exchanges!

Integrated Catchment Management (ICM) is also an increasingly used term down this way. **Dave Maslen** has been involved for the past 12 months with a group seeking to develop a strategic management plan for the Lower Waitaki River, using the principles of ICM. Though complicated slightly by the Water Allocation Plan process, it has also been hastened as a result. The group, made up of irrigators and irrigation companies, Meridian Energy, conservationists, recreationists, Wai Taha, adjacent farmers, community representatives and coastal farmers have been meeting regularly to develop a plan for the river, and also to develop a submission to the Draft allocation plan….not an easy process given the diverse group. However a comprehensive and consensus based submission was made and was heard on the 27th of June.

The process we have used on the Waitaki is being modified, and the principle reapplied to developing a management plan for the Orari River this will be run by Dave Maslen (ECan) and Shelley Washington (NZ Landcare Trust). The key issues that the community have already identified as needing management include (not exclusively), water quality, water allocation, weed control, river engineering work, access, flood management, gravel abstraction, ground water management, pest management, recreation and landscape protection.. Whether this process results in the development of a plan or not remains to be seen, but given that the process is highly

dependant on community involvement and participation, and recognising the level of enthusiasm shown at the first meeting, We are reasonably confident of some success.

Another interesting project is the development of the Ashburton Water User Group. This group is made up of people with resource consents to take water from the notoriously fickle Ashburton River and it's hydraulically connected aquifers. A meeting was called after enquiries were made by consent holders to Environment Canterbury regarding the potential to form a Water User Group to assist the community to voluntarily manage their water takes so as to minimise the time spent on restriction, and to more sustainably manage water resource of the Ashburton river system.

One issue that was immediately apparent was the communication of the current flow data, in particular, the speed at which people could access information on the Environment Canterbury webpage. This has been resolved by developing a personalised webpage for the group, with rainfall, current rates of take by the large users, river flow rates and current restrictions, all on one page. This site is nearing completion and will be active for the commencement of the 2005/6 irrigation season.

As with any irrigation system, reliability of supply was also of vital importance, particularly the impact that an individual take could have on the ability of everyone else to irrigate at times of low flow. This issue has been addressed (in part) through the implementation of a voluntary rostering system. This then allows them to collectively manage their takes to decrease the incidence of the river reaching minimum flow levels. This was trailed by a number of water users in the catchment during February and March this year with some success.

The concept of communities collectively managing their water takes to minimise the time spent on restriction is not new to Canterbury, with others including the Ohapi Water Users Group and the Waikuku Water User Group all operating in a similar manner. This is the first such group, however to operate on a system as complex and as large as the Ashburton River. As with any rostering system, it is heavily reliant on the communities active participation. The challenge is now with the community to pick up on the work started this season, and make it work for them next season.

Chris Phillips has been busy beavering away at further developing a CD Rom he developed with Hans Schreier at University of British Columbia last year focusing on Integrated Catchment Management - both its local context inters of the Motueka River catchment and its much wider global context. Current additions include recent work by Anthony Cole on "Catchment Futures" modelling with a focus on ecological economic goods & services accounts and predictions as well as radio tracking work on trout carried out by Roger Young from Cawthron. He has also been involved in aspects of urban development in and around Christchurch City looking at both the planning process and various impacts of development.

Dave Maslen

Otago

We are basking in some sunny days, with the occasional snow fall and some wicked frosts! Below is a round up of activities from several Otago NZARM members.

Nicola McGrouther has been busy running sub-catchment group meetings with farmers to talk about water quality. The latest sub-catchment group meeting was held south of Waihola with 10 farmers in the sub-catchment attending. Both dairy and sheep and beef farmers agreed that it was time to get stock out of waterways and implement more best management practices. This farming group is keen to undertake more water monitoring in the spring and see whether best management practices will improve water quality in the local stream.

The Otago Regional Council has signed the Clean Streams Accord with Fonterra which includes getting dairy cows out of wateways by June 05. The Council will be undertaking a survey of fences in the next few months to see whether the target has been reached. The Council has also signed a Memorandum of Understanding (MOU) with Fonterra to work co-operatively to address the water quality impacts of dairy farming in tile and mole drain land. The impact on water quality from dairy farming on tile and mole drained land is a significant concern in parts of Otago. The MOU requires that all dairy farmers on tile and mole drained land prepare an approved environmental management plan for their farm by September 2006.

The land resource team at the ORC is looking forward to meeting with land management staff from Environment Canterbury and Environment Southland in late July for an information sharing day.

New NZARM member **Rachel Ozanne**, water quality scientist at the Otago Regional Council has been busy monitoring water quality in the Waiareka Creek in the Kakanui catchment over the 2004/5 irrigation period. A trend of decreasing water quality over the summer period was attributed to two main factors, the naturally low flow of the creek, coupled with the intensive agricultural land use. The Downlands Irrigation Scheme (the scheme should be online by the next irrigation season) plans to augment the flow of the creek, but with the expected intensification of agriculture it will be interesting to see whether water quality improves.

Rachel has also been monitoring five Otago estuaries over summer 2004/5. It is planned to increase monitoring next season. Monitoring results highlighted that indicator bacteria for pathogens seem to be sourced predominantly from runoff in agricultural areas holding stock, nutrient sampling highlighted naturally elevated levels of nitrogen, and zinc concentrations were elevated in some estuaries for short periods over the tidal cycle. It is planned to do estuary further monitoring in the coming year.

Tom Heller has been busy in the consulting world since leaving the ORC last August. Tom now works as an Environmental Scientist for Sinclair Knight Merz and is based in Invercargill, but he still lives in Dunedin and commutes regularly. Some interesting projects that Tom has been working on includes the Waitaki catchment groundwater information project for MFE, water resource evaluation for the Sigatoka-Ba hydropower development in Fiji, large scale nutrient

modelling for dairy conversions in the North Island and various resource consent application AEE's for clients locally in Otago/Southland and in other parts of the country. The recent news that SKM is now opening a project office in Dunedin is great for Tom, which means he'll spend less time on the roads and more time doing some work!

2004YR Post Conference update – Murray Harris

It seems a long time ago that we enjoyed running the conference. It was great to have such a broad range of persons that attended and we hope they all enjoyed the southern experience.

One of the real pleasing aspects of the conference was that we gained about 15 plus new members of which at this point in time 11 are from the south. This brings our members numbers up to 30 south of the Waitaki river & it would be great if we can increase these numbers over the next 2-3 yrs.

Our regional planning team are having a break this year but hope to run a local forum with NZARM support funding later this year or early in 2006yr.

We wish the Hawkes Bay committee all the best for this years conference and hope members and the wider land use interest groups will attend and support this event.

The Wanderings of a Consultant in the South – Murray Harris

The life of a consultant (or I prefer the title adviser) is always varied and has its positive periods when one can take the rest of the day off but also has a down side when someone wants two reports by 12 noon the next day. So you get very good at burning the candle at both ends. The things I miss is the regular discussion and think tank sessions with staff at the Regional Council because its amazing how three brains can solve a delicate problem especially if you know the size of my cerebellum.

However, my work at present is varied (more so than I would like at times) and I do meet and work with lots of motivated persons who have a great empathy for farmers and the complexities of their modern business.

The area I have an issue about is that farmers generally are not prepared to pay an Environmental consultant like myself for general farming advice eg on soil health/effluent management etc. They are happy to pay their solicitor, accountant, tax adviser and stock firm because they see that as giving them direct financial benefit but don't relate the same philosophy to environmental matters which could be affecting their multi million dollar business.

Of course they are prepared also to pay for the preparation of a report as part of a Resource consent application as it is a requirement of the legislation and local plan conditions.

Furthermore, farmers can receive a lot of technical information free by way of web sites and Regional Council fact sheets, or in many regions get free onsite service and advice.

I am looking to the day (which is not too far off) when overseas markets especially supermarkets require certified produce from the farms in NZ. These QA schemes will then require that qualified persons are involved to ensure the farm is producing produce from an environmentally sound sustainable farm.

Anyway, that's enough ramblings from me but some of the interesting projects I am involved in at present include:

- The Poplar Fodder trial work at John Prebbles farm North Otago (a SFF Project)
- The shrub willow trial on a very large dairy farm in South Otago (1100cows) using Japanese willow and spraying dairy effluent over them via a modified K line irrigation system-the trail is not a year old yet. The aim is to spray effluent over the trees in October-November when soil moisture levels are high and thus minimise effluent getting into the tile drains and creeks. The dry matter may be cut up by a silo-rator and made into silage or else grazed off in situ but issues over damage to the shrub willows is an issue.
- The Kilmog area SH1 (north of Dunedin) stabilisation planting project to stabilise a large area of mudstone type landform. The cost to Dunedin if this area is closed by a landslip is very high now especially since a large proportion of freight travels by way of SH 1. Transit NZ Funds monies each year for planting and the project has now most of the problem areas planted out.
- Providing specialist advice to maori landowners with rural land (land area is not important). This new pilot project is called "Maori Land Facilitation Scheme" and its objective is to get maori land owners/families to manage their land and make a sustainable economic living from it.
- Tutoring at Telford Rural Polytechnic near Balclutha in South Otago in physical resource management topics/sustainable agriculture as well writing and developing a range of new modules for use by correspondence students around NZ
- The other project that takes up considerable time but is very rewarding is acting as the Judging Coordinator for the "Otago Ballance Farm Environment awards". Previously I was coordinator for Southland as well. We are in our second year in Otago but it is amazing the quality of stewardship and innovation that we are noting on these farms.

Furthermore, its also interesting to note how modest many of our farmers are who have to have their arms twisted to enter yet they all have amazing stories to tell and show. The other aspect of these awards that I like is that everyone involved is learning all the time. By that I mean that the judges learn, the sponsors learn and the farmers all learn from one another so really it is a cheap and effective method of transferring knowledge on best sustainable practices.

That's all from me Murray Harris (Muzza)

Focus on High Country areas - Bruce Monaghan

The Otago Regional Council's Biodiversity programme which began in 2002 has funded 25 biodiversity projects over 400 ha of wetlands ,forest and coastal habitat within the coastal and lowland areas in association with QE11 covenants. The key principle of the programme is to ensure protection or continuing existence of the species as part of the overall sustainability theme.

Council is keen to ensure that biodiversity activities are also promoted and actioned within the high country sections of Otago. Applications within the high country zone would follow a similar approach as for coastal areas and also include parcels of pastoral land where grazing would still occur.

Through tenure review process much of the potential within the high country will be secured by way of transfer to DOCestate. However there will be sections of freehold land that warrant a degree of protection through QE11 covenants. The on going strategic grazing could coexist alongside the retention of recognized biodiversity values.

3 meetings have been held with high country groups to outline the opportunities available to them. People have responded to the programme positively and have a great sense of comfort knowing it is voluntary process and the land remains in the freehold title.

At the same time Council is promoting and carrying out the Biodiversity programme, arrangements are underway for a high country/scientific review seminar of the High Country as a follow up from the meeting held 2 years ago. Council was mindful that there were aspects of the previous seminar that needed following up. The seminar is due to be held in September 2005.

Nicola McGrouther

Southland

Environmental Farm Plans

Environment Southland is currently in the process of producing comprehensive environmental farm plans for its leasehold land. This land was purchased as a result of the need for flood protection schemes on the Mataura and Oreti Rivers, and also smaller areas were purchased upstream of the three Invercargill City dams on the Waihopai River, Otepuni and Kingswell Streams. Purchase of the land was made through the Public Works Act.

The area of leasehold land is approximately 5000ha spilt between the five areas with about 50 leaseholders. Block sizes vary from large blocks on the lower Mataura and Oreti catchments to smaller lifestyle size blocks on the Waihopai, Otepuni and Kingswell schemes.

The lease hold land contains a unique mix of productive pastoral land, significant ecological areas and areas of recreational, cultural and heritage values. The council's aim is to develop optimum management strategies for each of these parameters without compromising the primary purpose of the land, which is a floodway.

The current council has decided to undertake a review of leasehold land, as a part of this review environmental farm plans are to be developed of each leasehold block. Currently, Jim Risk, ES land sustainability officer and Ian Brown, a private consultant are involved in the development of farm plans and leasehold land management review.

The objective of the farm plans is to convey information in a simple and effective way and to manage environmental issues related to the current farming practices while still achieving farming objectives. It is a starting point recognising that good environmental management is an ongoing process that may require adaptive management and continual improvement.

Farm plans include a detailed overview of those farming activities that may be deemed to contribute to potential environmental impacts. On-farm activities are identified such as nutrient management, linked to this are management objectives and good stewardship guidelines. These guidelines are best management practices the farmer can implement to mitigate environmental impacts and meet management objectives. Monitoring criteria is set out so there is a way of measuring if management objective are being met.

In addition to this information the farm plan also includes consent or permitted activity requirements such as the sighting of silage pits, soil test results, fertiliser practice, and nutrient budgets. Farm maps outline soil types, drains, fence lines and water supply lines.
Areas of ecological significance are identified as well as recreational, cultural and heritage values.

Overall the plan provides guidelines for sustainable pastoral farming and management strategies for ecological, recreational, cultural and heritage values, while working within the constraints of the floodway environment.

Land Management Index
A 'Soil Health Seminar' was held on Thursday 9 June 2005 at Croydon Hotel, Gore focussing on 'Land Management Index' for Southland. The day was organised by Environment Southland in conjunction with the Crop & Food Research, Christchurch. About 70 people were in attendance including councillors. The Council planned and organised the seminar.

Dr Mike Beare, Senior Scientist, Crop & Food Research, who was very much involved in the development of the 'Land Management Index' for Southland farmers, presented talks on several soil health management issues.

The programme included discussions on;
- what is soil quality and how is it measured
- managing soil quality on dairy farms
- managing soil quality on cropping farms and
- land management index – what is it and how will it benefit Southland farmers etc.

There was a demonstration of soil quality monitoring kit. The advantages of good soil management practices were highlighted. Information on above topics, in the form of handouts and brochures, was made available.

The feedback revealed that the Council's involvement was worthwhile and the message of soil health management came through strongly.

Consultative Discussion Document on the Southland Regional Action Plan
Under the Fonterra Accord, Fonterra and regional councils are required to develop Regional Action Plans (RAPs) identifying programmes specific to each region that will help achieve the Accord targets.

Fonterra carried out an assessment over the 2003/04 season to obtain baseline information on supplier compliance with the Accord targets. While this assessment was being carried out, an initial Southland RAP was prepared and adopted by Fonterra and Environment Southland to signify the commitment by both agencies to implementing the Accord in the Southland region. It was acknowledged that the Plan would need reviewed once the results of the first Fonterra assessment were available and that the results of the assessment would enable the development of a more focused Plan containing priority actions with clear time-bound targets to address the issues significant to Southland.

The results of the first Fonterra assessment were made available in July 2004. The results show that a number of the targets have already been achieved, or are well on the way to being achieved in Southland.

The first review of the RAP is now underway. Groups representing dairy farmer interests in the region (e.g. Federated Farmers) and interest groups, such as Fish and Game, the Department of Conservation and Iwi, will be invited to participate in this process and to become signatories to the revised version of the Southland RAP, if desired.

The aim of this document is to promote discussion on whether the Southland RAP should contain more regionally focused targets than those contained in the Accord, and what priority actions are needed to achieve these targets.

The document contains an assessment of where Southland as a region stands in relation to each Accord Target, what actions Environment Southland and Fonterra are taking to meet these targets, and what further research or strategies are being developed or encouraged by Environment Southland to understand regional issues. Discussion points are raised as to whether a review of the current Accord targets is required with the adoption of regional actions to address regional issues.

The Southland Wetlands Working Party - what has happened so far?

The Southland Wetlands Working Party is the joined force of a diverse bunch of people representing local government, environmental agencies and community interests to address wetland management in Southland. This group since its establishment in November 2004 has focused towards generating interest and raising awareness of wetlands, and determining incentive measures that various members of the working party can provide that will aid landowners with the management of wetlands.

A June visit to a local wetland highlighted the significance of wetlands on private land, the values these areas may hold, the benefits and the challenges of this area to farming operations and options for future management. The working party were able to explore with the landowner the options and opportunities, ideas, opinions and suggestions for landowner management of the wetland area and what role the working party members could provide.

Environment Southland has sent an invitation to other landowners to come forward with information about their wetland areas. Southland has several significant wetland areas, some of which are internationally important and all of which contribute to the unique biological and

geographic character of the region. Our goal is to help foster a greater understanding of, and appreciation for our wetland areas so that they will continue to be part of the landscape for future generations. The invitation to landowners will include information to help landowners identify any wetland areas on their property, and to promote the benefits of wetland areas as an integral part of the productive farming landscape. Ensuring that there is an understanding of the benefits wetland areas offer in terms of habitat, water quality, recreation and culture is our aim.

Bala Tikkisetty

Marlborough

Nothing from Marlborough this issue.

Paul Williams

Manawatu - Wanganui

All the Area managers are having an interesting time with restructuring. **Ian Moore** is still helping with the Sustainable Land Use Group requests for government funding for erosion control following the Feb 2004 storm.

Horizons Environmental Management Officers Soils are all beavering away getting final grant claims in. Short of poplar and willow poles again for the coming year.

Work on priority catchments is also gearing up now. **Allan Kirk** is working on the Moawhanau stream, near Wanganui and with consistently high bacteria counts. He is also helping **Richard Airey** set up a priority catchment in the mid Hautapu stream (that's above Taihape). **Grant McLaren** has two priority catchments, the Mangapapa stream behind Woodville, which is part of the Fonterra Clean Streams programme. Landowner interviews have been done, helped by **Dave Harrison**. Grant's other catchment is a small sheep/beef and soil slip tributary of the Manawatu river behind Eketahuna. **Dave Harrison** and **Malcolm Todd** have also been helping with the Harvey Monitor farm behind Kimbolton, where a trial for high nitrogen use is in its 3rd year. Dave and Malcolm's role is to help establish environmental impact and best practice in that environment. Malcolm has also just finished the draft of my report on 2 Visual Soil Assessment surveys of soil quality on the Manawatu Plains as well as bits of policy advice.

Kevin Rooke is busy in the Bulls nursery. At the end of June he will have done 30 years of service - it doesn't show, Kevin.

Campbell Sinclair has left, joined by **Sharn Hainsworth** so Ian is currently trying to fill both EMOS positions in Taumarunui.

Clare Ridler is doing EMOS stuff as well as some policy drafting.

Barry Goodwin is still doing a stint in Operations fixing up stopbanks I presume.

Alec Mackay facilitated the field day for the Ballance Farm Environmental Awards at Bruce McKelvies, has launched the farm management reporting package as part of the Project Green Trust and has helped launch the pugging penetrometer and ready reckoner of pasture damage at the Mystery Creek field days.

Malcolm Todd

Gisborne

Nothing from Gisborne this issue.

Peter Fantham

Wellington - Wairarapa

To those of you who avidly read Regional Roundups will be aware that the author of our last roundup was **Rob Harrison.** And a fine job he did too! It was a special treat for him to have that delegation as he was leaving after fourteen and a half years. Well, would you know he's back. Not as a staff member but as a CONSULTANT. We have contracted him to assist us through the winter, basically on the basis of two weeks on, two weeks off. In the 'off' periods he will be putting the finishing touches to the house at Cobden Beach. In the 'on' periods he will be tutoring two new staff, and dealing with a number of scheme classification reviews.

Rob's tutoring two new staff, **Chris Ladd** and **Faith Barber.** Chris is Rob's fulltime replacement, and Faith has been seconded from our Masterton Policy and Planning group to assist until Christmas. Ostensibly she is covering for **Roger Wood** who is still off work. Chris has a Forestry degree and has previously worked for Livestock Improvement Corporation and Greater Wellington as a Works Supervisor. Faith spent seven years with DOC in Kaikoura before coming to Masterton to become a Planner. Both Chris and Faith have settled in well and are surviving a rather compressed introduction and training into deep and murky art of soil conservation.

Elsewhere things are going well. **Michelle Bird** is well into the riparian planting programme at Otaki. In the past week 3,000 native seedlings have been planted. All eco-sourced I'd have to say. **Don Bell,** having been suitably refreshed by a stint in Norfolk Island is busy planning another round of shelter plantings, as well as shifting into a works programme for the Papawai Stream, near Greytown. This is a community led project, primarily overseen by the Maori community but will ultimately include service groups, schools, and landowners. The stream itself rises in

Greytown but flows through dairy land, past the local marae, before sidling past the Greytown oxidation ponds.

Me, well Linda and I are off to France, Italy, Switzerland and Britain at the end of July. We will be away for nine weeks. **Stan Braaksma** will take over the reins in my absence. Rob will be around to assist so I'm sure things will go very smoothly.

Will look forward to catching up with everyone in Hawkes Bay at the NZARM Conference.

Dave Cameron

Auckland

Nothing from Auckland this issue.

Amy Taylor

Hawkes Bay

Hawke's Bay has been wetter than average for the last two months and it seems colder too. That damn southerly winter weather pattern I remember from cold miserable lambing beats in the mid-seventies is back. The land hasn't started to slide away yet but soil moisture levels are bordering saturation - so any more large rainfall periods could see some movement. **Neil Faulknor** has reported that earthflows that have been inactive or 'quiet' for 20 years are starting to move again. The nursery has been flat out harvesting as the season is underway. The north island wide increase in poplar and willow material has seen our region have to prioritise the soil conservation material distribution for the first time in many years if ever. And of course with the wet period we have had a flurry of landowners wanting material.

Anna Lambourne resides in Napier but is hardly ever there as her role with Dexcel takes on new proportions covering the mid to lower north island. Anna is working on the stream crossing and feed pad issues with many of the professionals who work with dairy farmers. Having a chat to Anna the other day she stated that they are having good success dealing with the agriculture professionals who support the dairy industry.

A big chunk of the NZARM membership reside at the HBRC. The land management team have been active working with landowners organising this years work programmes. **Jude Addenbrooke** has been working successfully with a group of farmers in a programme she has put together called 'dirt to dollars', similar to the SUBS concept. The NZARM conference committee ably headed by **Garth Eyles** has been putting your conference together and we are very very excited about it. Several sponsors have come on board so far - AgResearch, MAF, NZFarmsure, HBFFA, HBRC, and Wildland consultants. So set aside your Oct dates and get

funding approval now - Oct 10-12. **John Phillips** has been working on the air discharge issues locally and wrapping his mind around developing a land monitoring strategy.

Northland

Nothing from the Far North Again. Embarrassing isn't it. That's how we have or haven't featured in the Regional Roundup for the last two or three years. Just in case you thought the whole of Northland has been subdivided into lifestyle blocks and weekend escapes for Jafas, I though I had better wave the flag. We do have the odd visitor from south of Wellsford drop into the office, once they have found out where we have moved to. That well-known oriental philosopher **Lee Wha Lee** came in to say gidday the other day. Was in Whangarei to pick up a Jap import truck on which to move his merchandise. See he now owns a cycle shop in the Big Smoke and can't get his bikes into his family vehicle.

For those who are heading north to experience our late summer drought, you will find the Northland Regional Council all housed in one very comfortable building in Water Street, Whangarei. This is the first time since the restructuring of local government in 1989 that we have managed to get all the Whangarei-based staff together on one site. The grouping of staff within the building has resulted in vastly improved communication. For example, in our part of the building we have our land management, indigenous biodiversity, river management and biosecurity staff (animals, plants and things what are in between), plus the planners, consents and monitoring staff who deal with these same areas of activity.

Some of these people are NZARM members and it's about time some of the others were. Land Management Officer **Kate Banbury**, who is a new NZARM member and as a student worked with **Doug Hicks** and others in the Gisborne District, is up to her ears in environmental farm plans within the catchment of Lake Omapere. This local tourist attraction alongside SH1 in the middle of Northland has a bad habit of going green and becoming toxic. Once we get Kate out of this great sink for time and funds, she will use these same skills to support our work under the Clean Streams Accord.

Land Management Team Leader **Kathy Mortimer** has been highly successful in accessing biodiversity funding from Wellington over the last two or three years. This funding, along with the Council's Environment Fund, vigorous support from the QEII National Trust and some very committed landholders, has ensured a considerable number of wetlands and bush areas have been fenced and protected. Kathy's involvement in the Northland Biodiversity Enhancement Group (NBEG), which includes representatives of DOC, QEII Trust, Kiwi Recovery, District Councils and landcare groups, has helped coordinate the efforts of these various bodies in the achievement of common goals. The other essential member of this group and all round rural facilitator is **Helen Moodie**, the Landcare Trust agent in Northland and another refugee from the big smoke.

The completion this year of the Council's once over kill of possums on all private land in Northland will enable us to concentrate our effort on areas where pests, both plants and animals, are threatening indigenous biodiversity values or primary production and where there is strong

landholder and community support. Our community pest control area programme, the focus of the new Northland Regional Pest Management Strategies, will result in an even closer working relationship between biosecurity and land management staff. Ex-Otago Land Resources Officer **Lisa Maria**, Biosecurity Team Leader **Matthew Hall** and Biodiversity Officer **Bruce Griffin** have been heavily involved, along with other Council, NIWA and DOC personnel, in a survey of Northland lakes and their surrounding wetlands. With over 450 lakes in the region, this has been an interesting project. Developing a management strategy will be even more interesting.

We are in the process of appointing a catchment management officer, a new position which requires the incumbent to both coordinate the efforts of a multi-disciplinary staff team and add their own land management skills to a programme to improve water quality in our rivers and streams. This is aimed particularly at those rivers and streams draining into harbours where there are marine farms. Sediment is our worst pollutant but it is getting plenty of support from nutrients from ever increasing intensities of dairy and beef farming. Unsealed roads, forestry operations, quarries and soil erosion, particularly streambank erosion, are all contributing their share. Urban development is also adding to the problem, particularly where the soils involved have a very high colloidal clay content and the development is dependent on septic tanks.

Land Management Consents Officer **Geoff Heaps** is a part of our cluster, processing applications for resource consents for earthworks, quarries, vegetation clearance, forestry operations and river works. Seated alongside Geoff is **Hugh Pollock**, who monitors consents in those same areas and deals with environmental incidents involving these activities. Nearby are Planners **Treena Davidson** and **Sharif Zainal Aziz**, who have been involved in the development and now implementation of our Regional Water and Soil Plan, and **Janarie Jonkees**, who processes applications for consents for river and drainage works, both urban and rural.

Over the last few years, and long before the gentle reminder of the 2004 Manawatu-Wanganui and Bay of Plenty floods, the Council has been getting back into river management. We had adopted a comprehensive river management approach long before the Civil Defence Emergency Management Act required us to. River Management Officer **Glen McIntosh** and River Management Technical Officer **Ben Leeuwenburg**, working with former soil conservator come Land Operations Manager **Bob Cathcart** and Hazard Management Team Leader **Graeme MacDonald** have a long list of river schemes to work through. While some will be simple willow clearing and gravel management schemes, others involve comprehensive surveying, modelling, establishment of minimum floor levels and hazard zones, as well as major works. In July 2005, the Council will take over the Awanui River flood management scheme from the Far North District Council and restore it to its as-built state. An integral part of this and the other river schemes will be an emergency response plan, for greater-than-design, or when the silt hits the fan, events.

On the other side of the ground floor of our building, and with a bunch of consents and monitoring staff clustered around him, is Consents Manager and NZARM member **Dave Roke**. Dave has almost forgotten what the outside world looks like, leading his team as they process an impressive number and variety of resource consents each year. A tribute to Dave and his team is that despite the complexity of some of the issues dealt with and polarisation that this often brings, most are resolved before they reach the Environment Court.

Not all our Land team members are based in Whangarei as the Council also has offices in Kaitaia, Opua and Dargaville. Kaitaia Manager is **Peter Wiessing**, another of our four foresters, and he is assisted by Land Management Officer **Doug Foster**. Doug is a hybrid, spending half of his time as a biosecurity officer and is heavily involved in our spartina eradication programme. Peter, who managed the Aupouri Forest before Timberlands sold to Juken Nissho, and was actively involved in the sand stabilisation and afforestation programme in the Far North, handles everything from monitoring industrial air emissions, drainage disputes, monitoring consents, and land management activities through to oil spills.

For the really old NZARM members, like Dex Knowles and the senior citizens from Gisborne, **Jim Gair** and his wife own one of the local Super Liquor shops. Jim did more than his share of poplar planting in Poverty Bay before escaping to Kaitaia and then to Whangarei.

Anyone heading to Northland will find a warm welcome at the NRC office. We may even be able to fit in a bit of a field trip to inspect some of the historic sites; schemes implemented under the guidance of our pioneer soil conservators. Some of the old farmers (their grandchildren are now running the farms) have fond memories and are very grateful for the assistance that they received in the 1960s and 70s from John **Bartleet**, **Amos Glass** and **Brian Burridge**. Unfortunately we can't show you the early kudzu trial area as it is now smothered with avocado trees.

Bob Cathcart

Broadsheet Contribution Winners

Congratulations to **Glen Sutton**, **John Whale** & **Ewan McGregor** who have won $25 book vouchers for their contributions to the last Broadsheet. Awards were given for the following:

1. Regional Correspondents – Bay of Plenty's Glen Sutton & John Whale recognised for consistent quality reporting, and attaining a balanced reporting style that covers people, work and social considerations.
2. General Articles – Ewan McGregor for his Victoria Trip Report.

52nd Annual Conference

"Growing Sustainably"

10th – 12th October
War Memorial Conference Centre,
Marine Parade
Napier

This year the conference is in Hawke's Bay, based in Napier and should be a very good opportunity to pack your bags for a weekend of fun and sightseeing before you hit the ground conferencing on the Monday.

We have packaged the three days into three different topics but interlinked by the need for soil and water management. There is a field trip each day with working examples of potential methods to mange soil, water, and biodiversity issues.

We would really appreciate **posters** showing research or project work by any members. The display area in the main conference room is excellent for providing people the opportunity of continual viewing.

Fill out the registration form that comes with this mail out or contact our organiser: Josie Curtis; Conference Coordinator, Phone: (06)844 4839 email: riverflat@clear.net.nz.

Anyone interested in a fishing charter on the Sunday (9th) contact Neil Faulknor at Hawke's Bay Regional Council.

NEW ZEALAND ASSOCIATION OF RESOURCE MANAGEMENT

THANKS to our sponsors for this years conference

Sustainable Farming Fund
www.maf.govt.nz/sff

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McCaskill Award Report: Eco-engineering - the use of vegetation to improve slope stability. Thessaloniki, Greece, 13-17 Ocotber 2004

Chris Phillips

The international conference on eco-engineering "The use of vegetation to improve slope stability" was held in Thessaloniki, Greece, in September this year. This particular conference followed an informal series of conferences in the general area of ground bio-engineering/ecological engineering. Previous meetings have been held in Oxford, Manilla, and Bordeaux.

The “discipline” (if one can call it that) of ground bio-engineering/eco-engineering sits between civil engineering, soil science, plant science, restoration, erosion control and a few others. While there are fledgling organisations like the International Ecological Engineering Society, and more established ones like the International Erosion Control Association, generally in terms of vegetation and erosion control research there is no one specific international body taking a governing organisational role. So what tends to happen is that every two to five years somebody in this research fraternity decides to organise a meeting. Thus we were in Greece following the 2004 Olympics to share advances and experiences of the last few years. For those of you with a keen interest in this topic area, the next meeting is to be held following the next Olympics in Beijing in China in 2008.

Over 100 participants representing 22 countries attended the meeting, which was held over 5 days.

This year's conference had several themes:

- mechanics of root reinforcement (I chaired this session)
- soil erosion and conservation
- root-soil interaction
- land restoration and earth stabilising technology
- slope degradation and hydrology
- vegetation, eco-engineering, and ecology
- risk management and decision support systems.

As you can see from the list of themes, there is a fair degree of overlap between them.

Unlike many other conferences, it was pleasing not to have concurrent sessions so that all delegats stayed in the one venue and all got to hear and share the same papers.

The programme was split into eight sessions, with one field trip and an afternoon of workshops. Sessions ranged from the fundamental understanding of root -soil interaction to the application of eco- and ground bioengineering techniques. Each session started with a keynote address which either raised some issues on the state of knowledge, reviewed the state of knowledge, or provoked some level of discussion. General papers then followed with some allowance for questions and discussion. Key-note speakers included T. Wu (University of Ohio, USA), R. Morgan (Cranfield

University, UK), T. Fourcaud (CIRAD, France), E. Cammeraat (University of Amsterdam, Netherlands), H. Nakamura (University of Tokyo, Japan), C. Koerner (GMBA, University of Basel, Switzerland) and S. Mickovski (University of Dundee, UK).

The workshop sessions demonstrated a range of field and numerical techniques used in the field of eco-engineering.

In general, the quality of paper presentations was remarkably good. I don't know whether it's me getting more critical in my old age or what, but I have found the quality of presentations and new knowledge people have been putting forward has been rather abysmal in a number of conferences that I have been to in recent years. This conference did stand out for me as being a cut above the usual and although a couple of the talks were fairly pedestrian, on the whole, each talk had something that was new, innovative, or interesting for an international audience.

Proceedings will be published in special editions of Plant & Soil and Geotechnical and Geological Engineering, as well as in book format in the series "Developments in Plant and Soil Sciences" published by Kluwer Academic Publishers, Dordrecht. Proceedings should be available in 2005.

My colleague Michael Marden and I were there to present some results of work that we had been doing on assessing the below-ground characteristics of some of our native plants. Our 2 papers below were also selected to be included in a special issue of the journal "Plant & Soil":

Stabilising characteristics of New Zealand indigenous riparian colonising plants
M. Marden, D. Rowan, and C. Phillips

Stabilising characteristics of the New Zealand cabbage tree (Cordyline australis)
A. Czernin & C.J. Phillips

Some specific learning points that I found worthwhile:

- modelling – there are some new advances and a move to try and integrate modelling efforts
- visualisation – some great advances have been made with new techniques to record and display 3D root systems and use this information for modelling
- right plant in the right place– significant emphasis is now being placed on choosing the right plant for the right place – local use of plants and not blanket use of one species (I'd add doing the right job, as there is now some thought about using plants for specific functions)
- endemic verses exotics – again emphasis on using native/indigenous plants over exotics in many countries
- the crazy state of specifications and guidelines used by roading and other engineers/contractors in all countries which are not forward-looking in terms of the above 2 bullet points
- issues around how to create change and promote uptake between practitioners, planners, experts/engineers, landscape architects
- issues around the valuation of performance of plant systems versus hard engineered systems - still a focus on numbers for engineers
- a recognised need for more use of screening tools such as screening models for selection of appropriate solutions.

The key value for me in attending this conference was to:

- meet people I've corresponded with but not met
- network amongst a research community that I have much less to do with now
- meet old acquaintances (and some not so old)
- get up-to-date on new developments occurring in the world
- put what we know, our research, and what we do in New Zealand in an international context.

On the whole, I feel that we in New Zealand are fairly well up with the play in terms of some implementation issues, but our research in the area of plant materials and soft-hard engineering compatibility has lost considerable ground over the last decade when we were regarded as lead players in the field. Many of the research activities dealing with plant materials for erosion control in New Zealand are sun-setting while those in some other countries seem to be taking off.

In terms of social activities there were 2 field trips – one locally to an area not far from Thessaloniki that had been burned by fire a few years ago and had been revegetated, and the other to Mt Olympus. Both fieldtrips were an opportunity to get out in the fresh air and see the practical side of what people had talked about in the conference.

The usual conference dinner, icebreaker, and poster session were not only great opportunities to mingle but also to sample the best in Greek food. For me at least, one week of Greek food was enough – there are only so many greek slads one can eat in a week (even though the tomatoes had real flavour!). However the best meal we had was in a little taverna in the countryside on the way back from the mid-conference field trip where the sardines, anchovies, squid were excellent. I even managed to acquired a taste for the local brew – Mythos, but did draw the line at metaxa and ouzo!

I thank NZARM and the Macaskill award for assisting with my travel costs to attend this conference.

Conference participants in front of NAGREF, Thessaloniki, after a long afternoon of practical workshops and a field trip to Thessaloniki Forest Park. (I'm the shorty hiding in the back row in the middle!)

The conference dinner enabled all participants to try out their Greek dancing skills…..

Article: The Forestry Estate in Otago and Southland

Dr Parnell Trost

The Size and Age Structure of the Local Resource

New Zealand's two southern-most regions have an exotic forestry estate of close to 213,000 hectares (1 April 2003). The estate has grown steadily over the past decade and it now represents 11.6% of New Zealand's total forestry resource. As the table below shows, the plantings are concentrated in two districts. The Clutha and Southland Districts have an estimated resource of 162,194 hectares, or 76.2% of all plantings. Substantial plantings have also been developed around Dunedin and in North Otago (the Waitaki District).

Otago and Southland have a relatively young forestry resource. The average age of plantings (weighted by area) is only 12.11 years, compared with the national average of 13.70 years. The regional average masks some interesting district level trends. There are three districts with an average estate age of less than 11 years. They are Gore (8.42 years), Waitaki (9.54 years) and Southland (10.78 years). These districts have been the focus of new planting in recent years. At the other end of the spectrum, there are two districts with an estate age of close to 20 years - Invercargill City (18.9 years) and Queenstown-Lakes (20.4 years). The forestry resource in these two districts has remained almost static over the past decade.

TABLE 1: THE SIZE AND CHARACTERISTICS OF THE PLANTATION ESTATE IN OTAGO AND SOUTHLAND (1 APRIL 2003)

DISTRICT	AREA (HECTARES)	STANDING VOLUME (000 M^3)	AREA-WEIGHTED AVERAGE AGE (YEARS)
Waitaki District	20,517	2,157	9.54
Queenstown-Lakes District	668	222	20.40
Central Otago District	7,109	990	14.43
Dunedin City	18,183	3,730	15.57
Clutha District	80,224	13,312	13.16
Otago Sub-Total	**126,701**	**20,411**	**13.03**
Southland District	81,970	8,878	10.78
Gore District	3,371	277	8.42
Invercargill City	825	266	18.88
Southland Sub-Total	**86,166**	**9,421**	**10.77**
Otago and Southland Total	**212,867**	**29,832**	**12.11**

Source: Ministry of Agriculture and Forestry (National Exotic Forest Description)

The young age of the forestry crop means that the full potential of the industry in Otago and Southland will not be seen for another fifteen to twenty years, when the large-scale plantings of the 1990s come on stream. With a young crop, most blocks are only now starting to build their timber volumes. This is reflected in the standing volume figures for the region. Otago and Southland has an estimated 30 million cubic metres of standing timber. This is a substantial resource but it is only 7.5% of the national total (397.5 million cubic metres of standing timber).

Regions with an older profile have substantially higher timber volumes per hectare than is currently the case in Otago and Southland.

The table below highlights the recent expansion of the forestry sector in Otago and Southland. 52.6% of the forestry estate in Otago has been planted (or re-planted) in the past ten years. The equivalent figure for Southland is 64.9%. As these plantings mature, they will dramatically increase the harvest volumes coming out of the South.

TABLE 2: THE AGE DISTRIBUTION OF THE FORESTRY ESTATE (1 APRIL 2003)

DISTRICT	**AGE CLASS / AREA (HECTARES)**						
	1 – 10	**11 – 20**	**21 – 30**	**31 – 40**	**41 – 50**	**51+**	**Total**
Waitaki	14,641	3,448	1,631	539	197	61	20,517
Queenstown Lakes	107	262	279	0	20	0	668
Central Otago	4,034	1,136	947	650	153	189	7,109
Dunedin City	5,688	7,764	4,334	283	47	67	18,183
Clutha	42,204	16,915	18,954	1,093	612	446	80,224
Otago Sub-Total	**66,674**	**29,525**	**26,145**	**2,565**	**1,029**	**763**	**126,701**
Southland	53,322	16,658	10,826	898	141	125	81,970
Gore	2,453	511	346	61	0	0	3,371
Invercargill City	216	262	174	166	7	0	825
Southland Sub-Total	**55,991**	**17,431**	**11,346**	**1,125**	**148**	**125**	**86,166**
Otago and Southland Total	**122,665**	**46,956**	**37,491**	**3,690**	**1,177**	**888**	**212,867**

Source: Ministry of Agriculture and Forestry (National Exotic Forest Description)

The Diversity of the Local Forestry Resource

The forestry estate in Otago and Southland is the most diversified of the wood supply regions within New Zealand. Nationally, 89.2% of plantings are Radiata pine. In Otago – Southland however, the figure is only 65.2%. Douglas fir is the major alternative species, with 24.5% of the estate. Douglas fir is being planted on both new and cut-over sites. There is a growing recognition that the environmental conditions in the South favour a combination of species on sites rather than blanket plantings. Douglas fir is able to cope with snow more readily than Radiata pine and it is a more appropriate species for higher altitudes. The annual nursery statistics reveal that new plantings of Douglas fir have frequently exceeded those of Radiata pine, over the past decade.

Another important trend has been the growth in exotic hardwood plantings, particularly in Southland. Hardwood plantings make up 15.5% of the Southland estate, and 7.2% of the combined region. The major species being planted is Eucalyptus nitens. They are being planted primarily for short rotation fibre (for chipping and specialised paper manufacturing).

TABLE 3: A BREAKDOWN OF THE FORESTRY ESTATE BY SPECIES (1 APRIL 2003)

DISTRICT	RADIATA PINE (HA)	DOUGLAS-FIR (HA)	OTHER SOFTWOODS (HA)	HARDWOODS (HA)	TOTAL (HA)
Waitaki	12,917	6,478	826	296	20,517
Queenstown-Lakes	219	435	10	4	668
Central Otago	1,814	3,333	1,881	81	7,109
Dunedin City	16,022	1,681	331	149	18,183
Clutha	59,329	17,285	2,241	1,369	80,224
Otago Sub-Total	**90,301**	**29,212**	**5,289**	**1,899**	**126,701**
% Of the Forest Resource	**71.27%**	**23.06%**	**4.17%**	**1.50%**	
Southland	46,562	21,540	1,310	12,558	81,970
Gore	1,206	1,359	63	743	3,371
Invercargill City	760	0	16	49	825
Southland Sub-Total	**48,528**	**22,899**	**1,389**	**13,350**	**86,166**
% Of the Forest Resource	**56.32%**	**26.58%**	**1.61%**	**15.49%**	
Otago and Southland Total	**138,829**	**52,111**	**6,678**	**15,249**	**212,867**
% Of the Forest Resource	**65.21%**	**24.48%**	**3.13%**	**7.16%**	

Source: Ministry of Agriculture and Forestry (National Exotic Forest Description)

The Ownership of the Forestry Resource

There is no dominant player in the Otago – Southland forestry scene. Ownership is widely dispersed, with fourteen companies, council business units and private individuals managing forestry holdings in excess of 1,500 hectares. The largest corporate owner has just over 30,000 hectares (net stocked area). A substantial proportion of the resource is in private hands, mainly the farm forestry sector. The private resource is estimated at between 30 and 35% of the estate.

The Timber Processing Sector

The structure of the processing sector mirrors that of the plantation sector. There are a number of medium to large-scale processing operations but there is no dominant player. There are four sawmilling and remanufacturing operations that have a log input of between 120 and 200,000 cubic metres per annum. At the other end of the scale, there are a number of mobile mills which process a few thousand cubic metres per annum. The sawmilling sector has more than thirty operators, including several indigenous timber mills. Sawmilling and remanufacturing employed 1,281 full time equivalent positions, as at February 2003.

The majority of the timber processing capacity is located in Southland, rather than in Otago. Of the four largest mills, three are located in Southland. The region is also home to a large-scale veneer operation and to a medium density fibreboard factory. This concentration of processing activity has occurred as Otago and Southland are seen by investors as a single wood supply

region. This concentration of activity has been possible mainly as a result of high quality infrastructure, principally a well maintained roading network. Logs can be efficiently moved from the forests around Dunedin to meet the demands of the veneer plant at Kennington (north of Invercargill) or the MDF facility at Mataura (south of Gore). Annually, there is a movement of approximately 300,000 m3 of round wood from South Otago to Southland. This movement is required to meet the demands of the processing facilities in Southland. Southland has excess processing capacity while Otago currently has a surplus of logs.

Harvest Levels
The regional harvest has grown progressively over recent years. The latest figures (March 2003) record a harvest of 1.56 million cubic metres. This is double the 1990 figure of .78 million cubic metres. Recent harvest projections by MAF and industry groups indicate that there is room to increase the sustainable harvest by several hundred thousand cubic metres. This is not occurring at present due to the difficult economic conditions that the industry has experienced in the past eighteen to twenty-four months.

Dr Parnell Trost
MAF, Dunedin

Waikato Hot Topic 1: Forest to Dairy Farming - land conversion in the Central North Island

John Palmer

In mid 2004 the Waikato Region learned of a major plan to convert over 25,000 hectares of prime forestry estate in the Central North Island to farming. The land encompassing Tahorakuri Forest, Broadlands Forest and a large chunk of Tauhara Forest is owned by Wairakei Pastoral Limited. This company will be leasing the land to Landcorp Farming Ltd who are undertaking the actual conversion. Landcorp are planning to dairy farm the Tahorakuri and Broadlands Forest land, but only part of the Tauhara Forest land. The remaining part of Tauhara Forest will be converted to sheep beef farming.

Along with this particular area of land, Carter Holt Harvey are selling large blocks to private investors and farmers wishing to convert the land to dairying. As of late 2004 they had already sold well over 5,000 hectares near Tokoroa.

Landcorp Farming have proven very motivated to convert the land with well over 1,000 hectares already cleared, and around 300 hectares already under brassica crop or pasture, and in the process of being fenced. The conversion will not happen overnight with the project planned to take around 20 years. Similarly large amounts of CHH land has also been converted to farming.

Under the current Waikato Regional Plan consent must be obtained to clear vegetation which includes appropriate erosion prevention controls, but that is where it ends. There are currently no rules regarding the conversion of land to other uses. The erosion controls in the consents regulates any discharge of sediment into adjacent rivers and streams.

The methods land clearance differ slightly from one operation to another, but are all relatively simple. Obviously the trees are initially felled. Younger trees are in some cases simply mulched where they lie. Those older than 8 or so years can be chipped or used as posts, with the more mature used in conventional timber and pulp production.

Landcorp Farming have adopted two methods of clearing the land once the trees have been dealt with. The first method involves picking the stumps from the ground and then either spreading the stumps within areas that are to be retired, or burning the stumps. With the other method the stumps are chipped where they are with a massive stump grinder mounted on the end of a 50 tonne excavator. The latter method results in less disturbance to the soil profile as the grinder only effects the top 400mm at the stump site, whereas picking stumps causes much more disturbance but is quicker and less expensive. Other landowners employ the technique of raking stumps and slash into heaps or windrows to burn or just left where they are.

The management of soil conservation on the conversion land has been an interesting challenge for me at Taupo. The soils at Tahorakuri and Broadlands are mostly Yellow Brown Pumice, with subsoils comprising mostly of sands and unconsolidated pumice. The soils are from the Whenuaroa, Taupo and Waipahihi series. The nature of the soils is characterised by a very high erosion potential and bare ground in this area readily erodes to form deep unstable gullies with prominent large gully-heads. Fortunately much of the land at Tahorakuri and Broadlands is quite flat, comprising of LUC 3e, 4e, with only some 6e and 7e on escarpment areas. Tauhara Forest, however, is much steeper, but the farming focus there will be mostly sheep and beef.

So far Landcorp have proved very proactive in their soil conservation and environmental protection component of the project. They have agreed to retire most areas with a slope over 20 degrees, all perennial streams, and all but the shallowest ephemeral waterways. Those areas around the streams, and along the banks of the Waikato River will be planted with native species to protect against erosion, act as a buffer from overland flows, and enhance biodiversity and amenity values. The steep areas away from the streams will be utilized as woodlots, to be planted with a wide variety of production species. Landcorp are also employing minimum tillage techniques in pasture preparation acknowledging the relatively thin A horizon and unconsolidated lower horizons.

Environment Waikato's involvement with the land conversion projects has been at all levels of the organisation. On the ground Environment Waikato's assistance is centred around the provision of advice and some farm planning. Currently we are not financially assisting in the retirement of the new soil conservation areas but may be prepared to provide future maintenance funding where a landowner enters into a covenant that is registered on title, in order to ensure the protection of fenced conservation area in perpetuity. Environment Waikato's Project Watershed Rate provides financial assistance to complete soil conservation capital works where these were identified under the earlier scoping of the project. The budget estimates were based on the area of land within the Waikato region that was under pastoral use at that time. Environment Waikato does therefore not have funding provision to support works now needed as part of extensive forestry conversion projects that have been proposed since the introduction of Project Watershed.

Even if all of the land use changes were to a very high standard, including protection of watercourses, conversion would result in a significant loss of nutrients which would reduce water quality in groundwater and tributary streams, and the Waikato River. This is due to the "leaky" nature of the soils here. Using just the Wairakei Pastoral Ltd (Landcorp) block as an example, Environment Waikato staff have estimated nitrogen loss to ground and surface water could increase by up to 426 tones a year, and phosphate by 34 tonnes a year, compared with an estimated loss of 34 tonnes of N and two tonnes of P under the present forestry use.

As well, the anticipated land use changes are likely to result in increased discharge of pathogens from stock, increased sediment loss from pasture and cultivated areas, increased fertilizer, herbicide, pesticide and animal remedy use as well as possible loss of aesthetic and in-stream ecological values, affecting other water users. Greater overall volumes of water may reach rivers, floods may peak in shorter time, and peak flows may be higher. Increased demand for irrigation may effect groundwater levels. Other issues include landscape change, carbon issues, and effects on biodiversity.

Its great to have the opportunity to work in a "blank canvas" environment, to ensure the protection and retirement of all sensitive areas at the initial stages of farm development.

Jon Palmer CPRM
Environment Waikato, Taupo Office.

Waikato Hot Topic 2: The Ecologic Case

Alan Campbell

Many of you will have been aware of the 'Ecologic case' which has been before the Environment Court this week. In fact it is a very complex case that sought to resolve outstanding references to the Waikato Regional Plan. In this case, Ecologic and Fish and Game Council, challenged our plan, saying that it allowed for unacceptable leakage of nutrients to water bodies, and asking for a rule to be put in place requiring farmers in priority catchments to obtain consents to apply anything over 60kg of N per ha per year. This would have required about 4,000 farmers to seek consents. The appellant's position was rejected by the court at a preliminary jurisdictional hearing which ruled that they had moved too far from their original submission in the relief they sought. The underlying issues that Ecologic were seeking to have had heard, including the implications of s70 of the RMA for permitted activity rules for fertiliser use in Regional Plans have therefore not been addressed by the Court.

A consent memorandum proposing to amend Ews plan in response to references from Federated Farmers, Fish and Game, Carter Holt Harvey and Vegfed is to be filed with the Court in the near future. The memorandum will propose amending EW's plan to include a rule requiring that farmers applying over 60kg of N must prepare a nutrient management plan (the expectation being that they will then see what they are wasting, and take action to contain their nutrients on farm). Ecologic still question whether this rule satisfies s70 of the RMA and have reserved their position.

In addition, the Court will also be asked in the memorandum to amend the Plan to require, that livestock access to mapped priority I water bodies be a discretionary activity. These include the margins of many small shallow lakes, key wetlands, natural state water bodies, tidal habitat fringes, most Coromandel streams, and the banks and tributaries of Lake Taupo. So farmers in those areas will need to either fence their water bodies, or apply for a consent. The memorandum also requires that EW consider extending this provision to a list of Priority II water bodies at plan review time. As you can see, this is a hugely significant step that will have enormous implications for farmers and EW, and could have repercussions throughout the country.

The Section 70 issue is also likely to be examined by the Court in someone's planning process over the next few years and could generate some interesting outcomes.

Alan Campbell
Environment Waikato

News: Two new courses in resource management

Submitted by Dave Perry

Two New Graduate Courses at The University of Waikato. The Department of Geography, Tourism & Environmental Planning is offering 2 half papers to be taught in the 2005 B Semester:

Resource Management Plans and Processing Resource Consents ENVP507B.
This paper will be taught as a block course, with 5 full day teaching sessions in July together with field trips, on line supervision of assignments and a mock hearing. It is designed to provide students with insight and skill in the area of processing resource consents under the Resource Management Act 1991. Navigating, interpreting and applying resource management plans will also be a key focus. It is a practical course designed to suit those who are currently in the work force or soon to be. Presentations by experienced planners will feature.
The paper is coordinated and taught by Pip Wallace. To view the paper outline visit:
http://www.waikato.ac.nz/wfass/subjects/geography/papers/envp507/

Planning Systems – Marine Planning ENVP506B.
This paper will be taught through a combination of in class discussion, practical exercises, and reviews of relevant literature and planning documents. Participants will meet from 3-5pm on Fridays. Recent New Zealand developments (e.g., aquaculture management areas, fishery plans and foreshore and seabed reserve plans) will be covered and New Zealand systems will be compared with selected overseas systems and issues (e.g., offshore wind farms). Much of this is at the cutting edge of planning and the paper will provide an opportunity for experienced practitioners to pursue a structured exploration of possibilities and approaches that might be transferred to other arena. The paper is also suitable for recent graduates and those with specific interests in marine and common property resources management generally.
The paper is coordinated by Hamish Rennie. To view the paper outline: visit:
www.waikato.ac.nz/wfass/subjects/geography/papers/envp506/