

Know How Can Do Job Done!



New Zealand
Biosecurity Institute



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President's Welcome

Welcome to the 60th annual NZBI National Education and Training Seminar (NETS). Yes, this is our diamond anniversary event. Sixty years is no small achievement for any endeavour and I am sure you are all as proud as I am of this Institute and what it has achieved over the years.

The Institute must have launched thousands of presentations on topics originally concerned with weed and animal pest control. Today, though we are 60 years on, we still have similar topics. Thankfully these topics now include words such as eradication, innovations, and community spirit. We are still fighting similar battles but as NETS will present to you, we have more tools, new technology, and a rising desire for collective action across communities and government to tackle these battles and never surrender.

The organizers of NETS2010 have assembled keynote speakers and concurrent session presenters from across the biosecurity spectrum to deliver a varied and interesting programme. I would like to thank all speakers for making the effort to prepare and present for us this year.

Thank you to the dedicated organising committee who has committed a lot of time and energy to deliver this NETS. I am sure you will agree, and join me in thanking the following people. Ben Minehan (Chair), Dave Grueber, Lindsay Vaughan, John Hellstrom, Frank Rosie, Claire Wooldridge-Way, Shelly Sidley, Trish Grant, Malcolm Brennan, and also Conference Organiser Carolyn Lewis.

I would like to sincerely thank all of our generous sponsors whose support allows us to produce a high caliber seminar for only modest fees. Our major sponsors are MAFBNZ, Marlborough District Council, and Landcare Research. Our other sponsors include Kiwicare Ltd; NIWA; Weedbusters New Zealand; Tasman District Council; The School of Biological Sciences; the University of Auckland; Animal Control Products; Te Ngahere; and SST New Zealand Ltd. Please make a point of showing your gratitude to these organisations over the next three days and beyond.

'Know how can do', is the catch phrase for this NETS. However it appears from what the local presenters are talking about, it is also a way of life around here. As every NETS aims to showcase the local character of the area I know that many of us will take home these stories of hard won truths battling invasive pests and use them as motivators or inspiration.

So buckle in and get ready, as we have a packed programme of presentations, field trips, workshops, and networking opportunities. I hope you will find our 60th NETS to be a rewarding experience and you will glean some 'know how' and take home some 'can do' from what you see and hear over the next three days.

Craig Davey
President

Day 1 Wednesday 21 July 2010

9.00 Welcome from Iwi representatives

9.05 NZ Biosecurity Institute President's welcome

9.15 Marlborough District Council welcome

9.25 Housekeeping

PLENARY 1 (Chair: Dave Grueber)

9.30 Opening address - Biosecurity in Marlborough (*John Hellstrom*)

9.40 Biosecurity issues across the ditch: an Australian perspective (*Dave McLaren, Dept of Primary Industries, Victoria*)

10.10 Biosecurity in South Africa (*Mike Ulrich, Greater Wellington Regional Council*)

10.30 Morning tea - sponsored by Kiwicare

PLENARY 2 (Chair: Lindsay Vaughan)

11.00 The future of pest management – the next 25 years (*Andrew Harrison, MAF Biosecurity New Zealand*)

11.20 Know how, can do, job done, so what? (*Campbell Leckie, Hawkes Bay Regional Council*)

11.40 Government and primary industry collaboration in pest management (*Kate Hellstrom, MAF Biosecurity New Zealand*)

12.00 Biosecurity and the Emissions Trading Scheme (*Alan Tinnelly, MAF Sustainable Programmes*)

12.10 Lunch

CONCURRENT 1

ANIMALS (Chair: TBA)

1.00 Achieving advances in pest control technology and products
Charles Eason, Lincoln University

1.20 'Coons to kereru, rats to robins, stoats to saddleback' - Wellington City multispecies pest control
Glen Falconer, Greater Wellington Regional Council

1.40 A decision support system for vertebrate pest control
Dave Morgan and Bruce Warburton, Landcare Research, Lincoln

2.00 On the rat's tail – adaptive pest management through monitoring
Sara Moylan, Greater Wellington Regional Council

2.20 National Predator Detection Dog Programme
Karen Vincent, Dept of Conservation

2.40 Rabbit population monitoring in Marlborough 1989-2009
Jono Underwood, Marlborough District Council

PLANTS (Chair: Heidi Pene)

Management of grey willow in swamps and bogs: when to aerial spray?
Kerry Bodmin, NIWA

Know how, can do, job done - with the right choice of adjuvants
John Illingworth, SST New Zealand Ltd

Pyp grass eradication programme
Jaap Kneegtmans, MAF-BNZ

Eradication attitude - Stephens Island tradescantia
Kerry Brown, Dept of Conservation

Can the past teach us about the future threat of weeds?
Philip E. Hulme, Lincoln University

Why do nodding thistle crown weevils struggle in the Manawatu?
Ronny Groenteman, Landcare Research

MARINE & FRESHWATER (Chair: John Sanson)

Marine value mapping
Simon Phillips, MAF-BNZ

Ecological effects of Undaria on rocky shore communities
Bionda Morelissen, Victoria University of Wellington

Managing Marlborough's aquatic weeds – getting the know how, so you can do
Paul Champion, NIWA

Reed Sweetgrass: the details of the 'can do'
Clare Duston, Kaitiaki o Ngahere Ltd

Mob-stocking for vegetation control - will it work with fish?
Victoria Lamb, MAF-BNZ

Know where for lake weeds
Mary de Winton, NIWA

3.00 Afternoon tea - sponsored by Te Ngahere Ltd

CONCURRENT 2

ANIMALS (Chair: Rebecca Kemp)		PLANTS (Chair: Pedro Jensen)		INSECTS, GOOD & BAD (Chair: Lynley Hayes)	
3.30	Rabbits – A new look at an ongoing issue. <i>Sherman Smith, MAF-BNZ</i>	Innovative Ivy Control: Sharing The Experience <i>Kay Griffiths, The Conservation Company Ltd</i>		Southern saltmarsh mosquito eradication: job done? <i>Don Hammond, Hammond Resource Management Ltd</i>	
3.50	The use of Judas tahr in Otago <i>Bruce Kyle, Dept of Conservation</i>	Weeds as an obstacle to indigenous revegetation projects <i>Margaret Peace, Tuamarina Weedbusters</i>		Argentine ants: ecosystem impacts and improved surveillance <i>Margaret C. Stanley, University of Auckland</i>	
4.10	Exotic bird response <i>Art Polkanov, Dept of Conservation</i>	National Weeds Distribution Database – benefits to NZ and recent progress <i>Graeme W. Bourdôt, AgResearch</i>		Dung beetles in New Zealand <i>Hugh Gourlay, Landcare Research</i>	
4.30	Great pets or potential pests? Exotic reptiles in New Zealand <i>Heidy Kikillus, University of Wellington</i>	Protecting conservation values during large scale weed control on Kaitorete Spit. <i>Wayne Beggs, Dept of Conservation</i>		Heather biocontrol – the next big success? <i>Paul Peterson, Landcare Research</i>	

5.00 New Zealand Biosecurity Institute Annual General Meeting

6.00 Mix 'n' Mingle - including poster session

Day 2 Thursday 22 July 2010

FIELDTRIP BACKGROUNDERS

MARLBOROUGH SOUNDS (Chair: John Hellstrom)		SOUTH MARLBOROUGH (Chair: Ben Minehan)	
9.00	Chemicals for killing standing radiata pine in the Marlborough Sounds by stem poisoning <i>Andrew MacAlister/Nick Ledgard, Scion Research</i>	Balancing production, conservation and recreation on Molesworth Station <i>Jim Ward, Manager, Molesworth Station, Upper Awatere Valley</i>	
9.15	Marine biosecurity and the aquaculture industry in the Top of the South <i>Graeme Coates, Marine Farming Association</i>	The battle against invasive pests in the High Country <i>Steve Satterthwaite, Farmer, 'Muller Station', Upper Awatere Valley</i>	
9.30	Pest eradication on Blumine Island <i>Mike Avis, Dept of Conservation</i>	Farming and Chilean needlegrass <i>Rex Dodson, Farmer, Cable Station Road</i>	
9.45	Building regional marine biosecurity capability <i>Lou Hunt, MAF-BNZ</i>	Farming and Nassella tussock <i>Tony Turnbull, Farmer, 'Jedburgh', Redwood Pass Road</i>	
10.00	Implementing the Top of the South Marine Biosecurity Strategic Plan <i>Al Campbell, Campbell Mincher Ltd</i>	The challenge of farming dry pastoral country sustainably <i>Doug Avery, Farmer, 'Bonavaree', Grassmere Road</i>	
10.15	Weed control and restoration work in the Para Swamp <i>Vaughan Lyn, Fish and Game</i>		

FIELDTRIPS

MARLBOROUGH SOUNDS

Local biosecurity experts will be joining delegates on a four hour boat trip through the Marlborough Sounds looking at habitat restoration projects, wilding pine control, vertebrate pest eradication and weed control on Blumine Island and the results of all this work on bird life on Motuara Island. The trip will also provide an opportunity to look at the aquaculture industry marine biosecurity issues for the Top of the South.

Sponsored by Tasman District Council

SOUTH MARLBOROUGH

Delegates will visit three farms in South Marlborough to find out first-hand how landowners here deal with droughts, rabbits, nassella tussock and Chilean needle grass, to ensure their farms continue to be profitable and sustainable into the future. This trip will finish up at Yealands Estate, an award winning vineyard, to look at their innovative, environmentally sustainable initiatives.

CLAYBIRD SHOOTING

6.00 Happy Hour (Marlborough Convention Centre) - sponsored by National Institute of Water and Atmosphere

7.00 Conference Dinner (Marlborough Convention Centre) - sponsored by School of Biological Sciences, University of Auckland

Day 3 Friday 23 July 2010

WORKSHOPS

9.00

Workshop 1: Advocacy

Is "Biosecurity TV" the next step? Join Kirsten Cooper from Showdown Productions (*Rural Delivery, City Girls*) to discuss how to get our biosecurity messages out via television.

Workshop 2: Training

Find out about the wide range of training options now available in New Zealand for those working in the field of biosecurity, and provide feedback on what else needs to be provided.

Workshop 3: Technology On-site

Hear about new technologies from those who have developed them - from gas-powered animal pest traps, to gel technology, there is something here for everyone. Includes mapping demonstration.

Workshop 4: Technology Off-site

Marlborough Helicopters at Omaka Aerodrome will demonstrate technology that has revolutionised boom spraying from a helicopter. *Limited to 45 people.*

10.00 Morning tea - sponsored by Pestoff / Animal Control Products

PLENARY 3 (Chair: John Hellstrom)

10.30 Workshop reporting back to full conference

11.00 'New Zealand is The Greatest Living Space on Earth' DOC's biodiversity training for iwi and community (*Suzy Randall, Dept of Conservation*)

11.15 Working together to tell gardeners about pests (*Helen Braithwaite, Dept of Conservation*)

11.30 Community groups: the problem, the funding, the result (*Hugh Gourlay, Landcare Research*)

11.45 To be announced

12.00 Closing address

12.15 Lunch

General Information

REGISTRATION

The registration desk will be open from 6pm to 8pm on Tuesday 20 July at the Marlborough Convention Centre, and daily from 8.30am. If you have any questions or need assistance, please come and see us.

NEW MEMBER

If you are new to NZBI or NETS and would like to be allocated a buddy to introduce you to others please let us know.

PRIVACY ACT

The conference handbook will include a list of all attendees and their contact details.

TRAVEL INSURANCE

Neither the organising committee of NETS2010, its individual members nor the conference organiser can accept any liability for death, injury, any loss, cost or expense suffered by any person attending NETS2010. Delegates are strongly advised to take out travel insurance to cover medical expenses, accidents, loss, damage, etc.

DISCLAIMER

The organising committee of NETS2010 reserves the right to modify the programme as needed, and is not able to guarantee that any particular person will appear as a speaker should circumstances require a cancellation or change to the programme.

SPEAKERS

Please provide your talk to the AV technicians well in advance of your speaking slot.

REGISTRATION NAMETAGS

These must be worn AT ALL TIMES. The stickers denote events you have opted for:

- Red - Mix 'n' Mingle
- Green - Conference Happy Hour and Dinner
- Blue - Marlborough Sounds fieldtrip.

If you do not have stickers for an event you have registered for, please come and see us at the registration desk.

ASK US!

Carolyn Lewis and Kirsten Crawford
NETS2010 Conference Organisers
Ph: (0274) 434 431

Day 1 Wednesday 21 July 2010

PLENARY 1

Know How, Can Do, Job Done! Biosecurity in Marlborough

John Hellstrom, Biosecurity Ltd

John is a Director of Biosecurity Limited, a private New Zealand company, established in 1991, which provides biosecurity and quality systems consulting and advisory services. He has a Doctor of Philosophy degree in Epidemiology and a Bachelor's Degree in Veterinary Science. He has extensive international experience in the regulation of agricultural production, processing and trade and particularly of biosecurity, working from senior roles within both public and private sector organisations. As New Zealand's Chief Veterinary Officer 1987-1991 he was responsible for the establishment of the Animal Welfare Advisory Committee and MAF's integrated approach to biosecurity. He has been a ministerial appointee to, and chairperson of, the Veterinary Council and the Biosecurity Council. In the former role he oversaw the development of an independent body to regulate and manage the quality of the performance of the veterinary profession on behalf of consumers and in the later he lead the development and publication of the Biosecurity Strategy for New Zealand, which was successfully launched in October 2003. Since then he has chaired a consortium of industry and regulatory bodies that prepared a cadmium management strategy for New Zealand and a research and end-user consortium working on alternative possum control measures. Currently he is chair of the National Animal Welfare Advisory Committee, which provides independent animal welfare advice to the Minister of Agriculture. He is supposed to be semi-retired and farms 2 dogs, 4 chooks and about 300,000 bees in the outer Marlborough Sounds.

Marlborough holds a unique place in the story of biosecurity in NZ. When James Cook careened his ship the Endeavour he may well have introduced the first invasive marine species to arrive in this country. Certainly he would have introduced ships' rats and possibly pigs and goats as well as exotic plants from the northern hemisphere. Within only a few years the incredibly diverse and bountiful bird and fish populations described by Banks had declined significantly – a trend that has continued till the present.

Marlborough still contains a highly varied range of ecosystems from the drowned valleys of the northern sounds to the dry tussock lands of the south. The region has one of the highest rates of endemism of any in the country and consequently faces many biosecurity challenges.

In recent years a number of community-based initiatives with DOC and district council support have been undertaken to reverse this process.

This seminar includes a number of reports and presentations describing some of this work and the field trips have been designed to also highlight this work. A consistent theme is that success is achieved by mobilising a wide range of support and collaboration – hence the theme of NETS 2010 Know How, Can Do, Job Done!

Biosecurity issues in Australia – pest management legislation, research, resourcing, administration and on ground control

David A. McLaren¹, Department of Primary Industries, Victorian AgriBiosciences Centre, Bundoora, Australia/La Trobe University, Bundoora, Australia

An overview of pest legislation between Australian Federal, State and local governments is described. The scope of the Australian pest issues are discussed in relation to its geography, its history of occupation and pest routes of entry. An overview of weed research and its resourcing in Australia is discussed. A quick overview of how local weed control is prioritised and implemented in the different Australian States and Territories is presented.

Lessons learned from the EMAPI (Ecological Management of Alien Plant Invaders) conference in Stellenbosch, South Africa 2009.

Mike Ulrich, Greater Wellington Regional Council

Mike has been a Biosecurity Officer with Greater Wellington (GW) for the last nine years. Over this time he has led the development of the pest plant response in GW's KNE (Key Native Ecosystem) programme. This has involved developing partnerships with territorial local authorities and other agencies to implement long-term sustained weed control programmes with the aim of restoring threatened ecosystems throughout the region. Mike has also had a hand in a delimiting survey programme for GW's 11 total control species. This has seen over 1000 sites delimited in a programme which is continually building confidence for the financial and logistical achievability of eradication. Mike's passion for the war on weeds has seen his involvement in Technical Advisory Groups for multi-agency national aquatic awareness, weed classification and MAFBNZ's National Interest Pest Response. Mike travelled to EMAPI in 2009 with funding from GW and the NZ Biosecurity Institute.

The trip to Stellenbosch offered valuable learning opportunities in terms of workshops, talks, fieldtrips and networking with the 240 delegates from 29 countries. Perhaps the greatest lesson taken from the conference was a reality check gained from meeting with people from the African Continent and listening to their stories.

The differences between the New Zealand and African biosecurity/ biodiversity realities are both dramatic and extreme. The biosecurity system we have developed here in NZ is world-leading and one we should never take for granted. With priority issues such as housing, aids, crime, political upheaval, broken economies and civil war being widespread in many parts of Africa, a NZ-style biosecurity system is a luxury that is just not afforded. Environmental and/ or agricultural weeds are generally only targeted by governments when livelihoods and people's incomes are directly affected.

Climate, soils, vegetation, and the sheer scale of weed issues also differ markedly. In South Africa alone, invasive species cover over 10 million hectares. Fortunately Africa has the benefit of a huge source of cheap labour and in several situations the mobilisation of entire communities has been the key in attempting to combat the impacts of invasive plants, even when the scale of invasion is immense. The South African Working for Water (WfW) scheme is one such programme. The WfW scheme engages over 30,000 workers and covers many very diverse biomes within the Rainbow Nation. My presentation looks at what the WfW scheme has done to date in South Africa and the benefits and lessons learned. Zooming in, I focus on the Cape Floral Region, home to the incredibly diverse Fynbos vegetation type. Despite such high biodiversity this region is still susceptible to weed invasion with several NZ species of concern.

The worst environmental weeds here are acacias and eucalypts. With many New Zealand areas becoming climatically dryer, many plants having huge environmental impact in Southern Africa should be raising a flag for us here. Several examples cited at the EMAPI Conference from this and other global regions provide us with warnings of future invasions and the spread of pest plants in New Zealand.

PLENARY 2

The Future of Pest Management – the next 25 years

Andrew Harrison, MAF Biosecurity New Zealand

Andrew manages MAF Biosecurity New Zealand's Pest Management Group, which holds the national leadership role for pest management and responsibility for delivering national pest management programmes. Previously Andrew was a member of MAF's Biosecurity Strategic Unit, before which he held senior technical advice roles within the Department of Conservation and owned and operated a landscape design, construction and nursery business. Andrew has a background in ecology, resource management and business management, and a passion for the outdoors.

The Ministry of Agriculture and Forestry is leading a project to improve pest management systems so they deliver what New Zealand needs for the next 25 years (The Future of Pest Management Project).

While New Zealand's pest management systems stack up well compared with other jurisdictions, further improvements are needed to position the pest management sector to meet future challenges.

Specifically, biosecurity chief executives have tasked the project with solving five critical issues that will make the biggest difference:

- o Overall roles and accountabilities are not clear.
- o The Crown is not obliged to act as a "good neighbour" landowner.
- o Legislative tools are too rigid and not fit for purpose.
- o There are limited physical control tools.
- o Collective action is needed, but is not being taken enough.

Central government, local government, Maori, industry and others are working collaboratively to address these issues and identify required improvements, which will affect future generations. A tangata whenua focus group has been working within work streams and has identified the necessary conditions for system changes to support Maori involvement and aspirations.

This presentation will explain the proposed improvements and next steps.

“Know how, can do, job done, so what?”

Campbell Leckie, Hawke's Bay Regional Council

Campbell is currently biosecurity manager at the Hawkes Bay Regional Council where he has been for the last eight years. Prior to that he was a pest management officer at the Taranaki Regional Council for ten years. He comes from a strong background on the 'doing' side of pest management, having worked as a goat culler for DOC and a pest management officer for local government. Completing his Masters in Business Administration in 2007 provided an opportunity to add a strong business focus to the field based skills learned over 18 years in the pest management industry.

Across New Zealand pest control has been carried out by a number of public organisations for many decades. The objectives of this control have been wide ranging and have seen hundreds of millions of dollars of taxpayer money spent on pest control.

We live in a time where there are increasing community expectations about what these resources will deliver, and a strong public expectation that ratepayer funds will be spent on projects that clearly demonstrate they deliver the best long term outcomes for the community. But how well do we understand what the outcomes of pest control are? And particularly in a rateable farmland landscape? How effectively are we communicating these outcomes to our community? It is one thing to get the job done, and do it well, but it is another to understand the contribution that our pest work makes to the outcomes we want to achieve on behalf of our community.

A cornerstone to better understanding outcomes is the application of a simple concept called an intervention logic model. These questions about the importance of understanding and communicating outcomes from pest management, and the use of the intervention logic model, are discussed in the context of the Hawkes Bay Regional Councils current pest control programmes which span 900,000 hectares of rateable land.

Government and primary industry collaboration in pest management

Kate Hellstrom, MAF Biosecurity

Kate is a Senior Policy Analyst, Policy & Risk Directorate, MAF Biosecurity New Zealand. Kate holds a Bachelor of Science (Victoria) and Masters in Environmental Planning and Resource Management (Massey). She has been in MAFBNZ's policy team since 2003. Prior to that she was an advisor in MAFBNZ's Animal Welfare Directorate for 18 months

During the past four years, primary industries and the Ministry of Agriculture and Forestry (MAF) have developed a draft agreement for joint decision-making and cost sharing. Under the agreement, MAF and industries will work together to reduce the impact of unwanted pests and diseases. Participating industries will be able to be involved in decision-making regarding biosecurity readiness and response activities that they are contributing to financially.

The draft agreement focuses on responses to new pests. However, industries also need to be able to manage or respond to existing pests that are a problem to their sector.

In the future, there is potential for the Government-industry agreement to be applied to established pests of mutual Crown and industry concern. These pests might be causing new impacts or spreading to new regions, or a new treatment might have become available. The pests would likely be either containable or eradicable. Under the agreement, MAF and primary industries could collectively decide which established pests are priorities and how they should be managed. Participants of an agreed response to an established pest would share the costs of this response.

In some circumstances, the agreement could potentially be used as an alternative to national and regional pest management strategies. These strategies can be difficult and costly to develop, so we need a better tool that can focus on alternative approaches to pest management, such as pathway management. The Government-industry agreement for joint decision-making and cost sharing could be used to fill this gap.

This concept aligns with MAF's Response Policy, which requires that response decisions are applied consistently, regardless of whether a pest is new to New Zealand or has been here for some time. This includes responses to established pests that may pose biosecurity risks for primary production industries.

Emissions Trading Scheme in Forestry

Alan Tinnelly, MAF Sustainable Programmes

Alan has been involved in the forest industry for some 35 years starting with the New Zealand Forest Service as a Forest Ranger in environmental management of indigenous forest and exotic forest establishment. He then undertook a position with the Ministry of Energy within the mining sector. This was centred around the licensing of the alluvial mining and follow-up restoration of mining sites throughout the South Island. He then, at the advent of the Resource Management Act set up a company consulting to the mining and forest industry for resource consent requirements under the various District and Regional Plans. In the mid 90's Alan took the position as the operations manager for indigenous forestry under the Forest Act, administering the provisions for sustainable forest management for timber production. In 2008 he was appointed the South Island Regional Manager for Sustainable Programmes in MAF. Sustainable Programmes administer the function of Indigenous Forestry, Emissions Trading Scheme, Forestation Grants Scheme, Permanent Forest Sink Initiative, East Coast Forestry Scheme and South Island Landless Natives Act Land (SILNA).

This presentation gives a brief background of the pre-1990 and post-1989 forestry opportunities and liabilities as they effect land and forest owners, particularly in relationship to wilding trees if there is a opportunity under the Forestry Allocation Plan, an exemption or entry into the ETS.

CONCURRENT 1 - PEST ANIMALS

Achieving advances in pest control technology and products

Charles Eason^{1, 3}, Shaun Ogilvie¹, Elaine Murphy ², Lee Shapiro³, Steve Hix³, James Ross¹, , Ray Henderson⁴ , Shona Sam¹ , Duncan MacMorran³, Jeanette Drysdale³ , Matt Kavermann¹, Daniel Conole⁵ and Margaret Brimble⁵

¹ Lincoln University, Lincoln, New Zealand.

² Department of Conservation, Christchurch, New Zealand.

³ Connovation Research, Auckland, New Zealand.

⁴ PestTech, Canterbury, New Zealand

⁵ University of Auckland, New Zealand

Charles Eason is Professor in Wildlife Management at Lincoln University and Director of Research for Connovation Ltd in Auckland. He specialises in vertebrate pesticide toxicology and has published extensively on the pros and cons of 1080 and alternative poisons. He has a PhD Toxicology from University of Surrey in the UK and worked in new drug development for over 10 years. From 1989 to 2006 Dr Eason spent 17 years at Landcare Research in roles including Pest Control Technology Research Team Leader and Science Manager. Since 2006 he has been working on new pest control products with Connovation and Lincoln University researchers. He was awarded the NZ Science and Technology Award Silver Medal in 2002. His current activities are linked to environmental protection and research, product development, pest control, and biodiversity with a focus on humane low residue poisons. His research focuses on the delivery of new and better tools for animal pest control and enabling their registration so they are available for professional pest control professionals and community users.

Over the last three decades, considerable effort has been put into improving and refining the use of 1080. In contrast, the last 12 months has seen a record period for new product registration advancement; however there are no “silver bullet” replacements for 1080. A suite of effective and acceptable tools is being developed to reduce over-reliance on 1080 or brodifacoum and provide greater flexibility. There is now an intense focus on delivery of additional alternatives within 1 - 6 years.

Recent progress in new product research and development has included:

- i) Feratox® cyanide pellets registered for dama wallaby control as well as possums and we hope to extend this registration to include Bennett's wallabies in 2010;
- ii) Registration documents being in an advanced stage of assessment by ERMA for zinc phosphide (ZP) as an alternative to 1080 for the control of possums, this registration will be extended to include rodents;
- iii) Registration documents filed with NZFSA for a combination of C+C (coumatetralyl + cholecalciferol) to provide an anticoagulant alternative for effective possum control.

Anticipated timelines for product availability are 2010 (ZP) and 2011-2013 (C+C) subject to ERMA and NZFSA approval, and continued focused research and development effort.

In parallel, we are pursuing the registration of PAPP, a red blood cell (RBC) toxicant, for 2010, a novel poison for humane control of stoats and cats. On the platform of PAPP, alternative RBC toxicants including sodium nitrite are being advanced for larger pests, such as possums. Our new consortium, linked with Lincoln University and the University of Auckland, is working to deliver a suite of improved eco-friendly toxin products, new traps and toxin delivery systems. In addition in 2010 we will work alongside pest control professionals to increase the safer use of toxic baits so that they can be used safely for ground baiting through stocked land and in other areas where non-target species are a concern.

‘Coons to Kereru, rats to Robins, stoats to Saddleback’ - Wellington City multispecies pest control

Glen Falconer, Greater Wellington Regional Council

Glen has been working for Greater Wellington for 14 years doing pest animal control doing, TB vector possum control work, multispecies pest animal control work including rabbits, magpies and rooks and monitoring. Glen is now a team leader now in the Upper Hutt Depot looking after big Key Native Ecosystem control programmes, pest animal control programmes for the Parks Department, two Mainland Island control programmes and all other Regional Pest Management Strategy pest animal programmes in the Western half of the Wellington Region.

Greater Wellington Regional Council (GW), in financial partnership with Wellington City Council, has been working on possum, rat and other predator control within the Wellington inner and outer town belt for the last 13 years. This Key Native Ecosystems Reserves programme forms a wildlife corridor from Miramar Peninsula through to Johnsonville. In 1999 the GW Pest Animals team was involved with removing possum and rats from Karori Wildlife Sanctuary (now Zealandia) which sits at the hub of this corridor. The forest around Zealandia is now a priority area for multispecies pest control to maintain pest animals at low levels and provide protection for birds such as saddleback, stitchbird, NI robin, whitehead, bellbird and kaka that are all spilling over the sanctuary fence into the adjoining habitat and beyond. The initial focus on possums throughout the town belts has resulted in very low population levels, with rats and mustelids now a priority for the programme.

The treated areas are mostly City Council Reserves and private urban land. These areas have very high public use and require intensive management due to the risk associated with the use of vertebrate toxic agents and traps. The safe and prolonged use of effective baits, toxins and traps in the presence of the public and their cats and dogs, has been a real challenge. However, the programme has

achieved great success. Annual bird counts carried out by Wellington City Council have shown an excellent improvement in all forest bird species present in the city before the programme started. There is also an exciting increase in the bird species that have emigrated outside the sanctuary fence since their gradual introduction from 1999.

The programme would not be possible without the commitment of volunteer groups, City Council staff, service delivery contractors and the GW team.

A Decision Support System for vertebrate pest control

Dave Morgan and Bruce Warburton, Landcare Research, Lincoln

An on-line Decision Support System (DSS) is being developed, primarily for regional council pest management staff, to assist in selecting the most appropriate methods for managing vertebrate pest impacts on biodiversity values. Facilitated workshops with pest managers led to the broad conceptualisation of a biodiversity management system. This entails a logical flow from high level biodiversity objectives, through identification of sites requiring pest management, to use of the DSS to select the optimal methods and provide 'best-practice' advice. As a planning tool, the DSS will also enable prediction of the 'efficiency' of proposed pest control operations based on the likely cost, distinctiveness of biodiversity values, chances of success, and benefits achieved. By ranking efficiency values, pest managers will be able to identify priorities for pest control that fall within available budgets. Overall, the system will provide a transparent methodology for rational allocation of restricted funds.

On the rat's tail – adaptive pest management through monitoring

Sara Moylan, Greater Wellington Regional Council

Originally from the Waikato, Sara graduated from Massey University with an MSc in 2004. In November of that year Sara started work with Greater Wellington in the Monitoring and Investigations section of the Biosecurity Department working out of the Upper Hutt Depot. Sara's role is to manage the department's monitoring projects, particularly biodiversity, including rodent, bird, invertebrate, weed and vegetation monitoring.

Greater Wellington runs a rodent monitoring programme in selected urban Key Native Ecosystems (KNE's). The monitoring enhances our pest management by measuring its success and lets us understand rodents that bit better. The management goal is to maintain rats at less than 10% tracking index and to adapt management in response to tracking results.

Greater Wellington has a multi-pest control regime using a network of bait stations to control possums and rats in over 100 urban/peri-urban areas. We have been monitoring rats in ten of these sites, four times a year, since 2003. Along the way have learned, amongst other things, how rats and mice respond to the management regime and the seasons. I will share some of our more interesting observations.

The focus of the KNE programme is to improve and protect the regions biodiversity and the possum/rodent baiting regime is a major tool with which to do this, with notable success. People now complain about the noisy tuis. We are seeing biodiversity benefits and to keep this happening we will continue monitoring the effectiveness of what we do and will continue to stay on the rats' tail!

Dogs working for conservation – National Predator Detection Dog Programme

Scott Theobald and Karen Vincent, Department of Conservation

Scott is a Technical Support Officer, Predator Dogs, based in Whangarei. He developed the predator dog programme in 1998 when they undertook a two-year pilot programme to trial the use of dogs to detect predators. The programme has been running since 2000. Scott is the predator detection dog programme coordinator and certifier, assists with training/mentoring, runs his own stoat and cat detection dog, and has a small breeding kennel for predator detection dogs for the programme.

Dogs have assisted with mammal eradications in New Zealand for the last 30 years. Since 2002 the Department of Conservation has run a dedicated predator detection dog programme providing dog and handler training and certification, systems development and improvement, a breeding programme and operational support. The dogs are trained to detect the presence of mammalian predators and browsers including rodents, mustelids, cats and rabbits for the purposes of audit, incursion contingency response, surveillance, biosecurity quarantine and optimising trap placement. Dogs have proven to be an extremely effective tool for confirming presence when predator numbers are low and other predator detection methods (tracking tunnels, traps, waxtags) are less efficient. Once detected by dogs the predators are killed using pesticides, traps or shooting. Since the programme started, these dogs have been involved in many successful pest eradication programmes on islands.

The NZ dog programme has also provided international advice, training and dogs (practical support) for eradication programmes e.g., Macquarie Is., Australia (rabbits) and Amami Is., Japan (mongoose).

This paper presents the dog programme and illustrates case studies where use of the dog programme has assisted eradications including: Raoul Island (cats), Campbell Is. (cats and Norway rats), Secretary Is. (stoats), Te Kakahu/Chalky Is. (stoats), Tuhua/Mayor Is. (cats), and many contingencies including Motuihe Is. where the rodent dog detected the rat within 48 hours of tracks being discovered on tracking cards.

Rabbit Population Monitoring in Marlborough 1989-2009

Jono Underwood, Marlborough District Council

Originally from Northland before studying at Lincoln University - BSc(Hons) Conservation & Ecology, Jono worked in Australia for three years for a private firm managing and carrying out vertebrate pest control - primarily wild dogs and foxes. He moved back to New Zealand in October 2009 to take position with the Marlborough District Council. Jono's work has a strong emphasis on rabbit compliance monitoring, population monitoring, landholder liaison and education.

The European rabbit (*Oryctolagus cuniculus*) has a long and destructive past as a pest in Marlborough. In 1989 the then Nelson-Marlborough Regional Council established the first of permanent long-term night count routes to monitor rabbit population trends. The first three night count routes were established on Muller Station in the Upper Awatere Valley - some of the most rabbit prone country in Marlborough. Currently, there are a total of twelve routes which are counted annually. Eleven of these are in the Upper Awatere/Molesworth areas with one in the Vernon Station/Dashwood area. There were dramatic increases in rabbit numbers through the early 1990's in the Upper Awatere/Molesworth areas followed by a large drop as a result of the RHD virus in 1997-98. Over the past decade, numbers have been slowly building to almost pre-RHD levels. Over the past 2-3 years, large reductions in rabbit numbers have been a direct result of intensive traditional control on the properties concerned.

CONCURRENT 1 - PEST PLANTS

Management of grey willow in swamps and bogs – when to aerial spray?

Kerry Bodmin, National Institute of Water & Atmospheric Research (NIWA)

Kerry Bodmin has worked as a wetland ecologist at NIWA for two and a half years. Based in Hamilton, her main research interests are based around wetland and aquatic plants including ecology, biodiversity, weeds, restoration and conservation.

With wind dispersed seed and a wide ecological tolerance range, grey willow (*Salix cinerea*) is an extremely aggressive invader of wetland habitats. In optimal conditions grey willow forms a monoculture, overtopping native vegetation which rapidly transforms understorey species composition. Large scale control or eradication tools are primarily limited to aerial foliar application of herbicides - glyphosate and more recently Triclopyr triethylene amine (Garlon 360®).

The effectiveness of herbicide treatment is reviewed for both swamp and peat-based wetland case studies, including non-target damage, native regeneration and successive weed invasion. The trial aerial application of Garlon 360® initially appeared successful with selective control of grey willow and limited understorey damage. However, follow up monitoring has shown epicormic regrowth on the trunks and base of most grey willow shrubs 1 to 2 years after treatment. Both glyphosate and Garlon 360® provide different options as management tools with their usefulness closely linked to site conditions and management objectives.

Know how, Can do, Job done with the right choice of adjuvants

John Illingworth, SST New Zealand Ltd

John Illingworth has been involved in the development of specialty chemicals for the turf and agricultural industries since 1975. After spending 16 years with ICI Australia he commenced working for himself in 1991. His company SST Australia Pty Ltd is now a major supplier of adjuvants and soil treatment products to the agricultural and turf industries throughout Australia and New Zealand. SST New Zealand Ltd was incorporated in 2004, however SST has been selling adjuvants and spray additives for agriculture, horticulture and turf in New Zealand since 1997.

Knowing the right choice of adjuvants to use with your chemical application is paramount to achieving the right result. Many factors need to be assessed before you start. Water is one of the biggest overlooked factors, is it hard? Does it have a high pH? Does the chemical degrade from alkaline hydrolysis? Is it a weak acid type? In these cases water and chemical can pose a problem, because the tank life of the mix can be reduced. What are the surface characteristics to be sprayed - waxy, hard to wet, polar? Weather conditions? High delta temperatures? Warm? Wind? How important is it for you to use products that are environmentally compatible?

All the above issues need to be taken into account before spraying and often the correct choice of adjuvant can assist to get the job done.

This presentation will explain to you how to make the right choices to achieve better chemical coverage and achieve the right results that is paramount to your specific operation, and why you may not be getting those results now. It will cover water quality, type of chemicals, target surfaces and weather conditions.

Pyp grass - eradicating an established pest from New Zealand

Jaap Knegtmans, MAF Biosecurity New Zealand

Jaap is a Senior Adviser Conservation and has been a part of Post Border Directorate since 2006. Having previously worked for the Greater Wellington Regional Council and the Department of Conservation, he has 15 years experience in a range of pest management, threatened species management, environmental management, biodiversity and ecology related roles throughout the country; and he has led a number of stakeholder initiatives in this field.

Pyp grass (*Erharta villosa*), a pest plant introduced to New Zealand in 1956, was classified for eradication in 2006 under the National Interest Pest Response initiative led by MAF Biosecurity New Zealand (MAFBNZ). The joint partnership response between Department of Conservation, regional councils and MAFBNZ has achieved zero density of pyp grass at two of the three infestation sites. The response is well on track toward achieving the goal of eradication in the New Zealand environment. This presentation will summarise the response and lessons learned for future eradication of rhizomatous weeds.

Eradication attitude - Stephens Island Tradescantia

Kerry Brown, Department of Conservation

Kerry has 30 years experience in animal and weed pest management including successful eradications. His current role is as "weed and biosecurity technical support officer" Nelson Marlborough Conservancy.

Stephen's Island is a special place with an abundance of native biodiversity, few ecological weeds and absence of mammalian predators. Tradescantia (*Tradescantia fluminensis*) covered 1.3 hectares of Stephen's Island and was spreading rapidly when DOC took over management in 1989. Dense mats of Tradescantia prevented native seedling growth and impaired tuatara (*Sphenodon punctatus*) and fairy prion (*Pachyptila turtur*) access to burrows. Control commenced in 1990 and the last fragment was found in 2007. Surveillance will continue for at least another three years before the eradication attempt is declared successful. Assessing project feasibility and applying quality project management is important to achieving eradication. However, I suggest that people with attitude is the crucial eradication ingredient.

Can the past teach us about the future threat of weeds?

Philip E. Hulme, Sami Aikio & Richard Duncan

The Bio-Protection Research Centre, Lincoln University, Christchurch

Philip is Professor of Plant Biosecurity at the Bio-Protection Centre, Lincoln University. His primary research interests relate to understanding the ecology of invasions by introduced plant species, assessing the subsequent consequences for natural and managed ecosystems and developing tools to help prevention or management. Current research addresses our ability to predict which plant species may become invasive and examines the roles of habitat characteristics, plant species traits and human behaviour in the risk of plant invasions.

Using herbarium data of 6294 records representing 100 alien plant species, we assessed spatial heterogeneity in the distribution of alien species by examining the role of major urban areas as sources of sampling bias. A novel method to account for spatial biases in sampling effort was developed and applied to two simple distance metrics: nearest and furthest neighbour spread rate. The relative

importance of these two distance metrics in determining the range, areal extent and dispersion of alien species across both the North and South Islands of New Zealand was also assessed.

The spatial distribution of herbarium records were highly clustered with a significant bias towards the more populated regions. Once sampling bias is taken into account there was no indication that species were found closer to these urban centres than might be expected based on sampling effort. The nearest neighbour spread rates were usually 1-5 km yr⁻¹ and correlated positively with the furthest neighbour spread rates that were an order of magnitude higher. Range and area increased and clustering decreased with spread rates and recording time span. The spread rates divided species in five groups that were clearly distinguishable in terms of the extent of their distribution and the degree of clustering. Species occurring on both islands did not exhibit similar spread rates or spatial patterns.

The nearest and furthest neighbour spread rates from herbarium records can explain the area and pattern of alien plant distributions and improves the understanding of the dynamics of their spread. Five groups emerge from the spread rates in relation to a null model. Fast spreading plants had the widest, least clustered distribution, which suggests widespread chronic problems, while slow spreading plants had localised, but dense, clustered distributions, indicating acutely problematic weeds. These patterns appear robust and may be useful in predicting the future patterns of spread and planning long-term management strategies in New Zealand.

Why do nodding thistle crown weevils struggle in the Manawatu?

Ronny Groenteman, Landcare Research

Ronny is working on classical biological control of weeds with the team at Landcare Research. She is based at Lincoln, and mostly works on aspects of non-target effects of weed biocontrol agents. The systems she is currently working on are the weeds St. John's wort and thistles and their various agents.

Nodding thistle crown weevil (*Trichosiromus horridus*) was introduced to New Zealand in the mid 1980s. The weevil established well in many parts of the country and is anecdotally reported as a major contributor to a decline in nodding thistle infestations in Otago, Canterbury, Marlborough and Taranaki. However, it has been difficult to establish the crown weevil in some areas including the Manawatu District.

For several years now Horizons Regional Council staff have repeatedly collected and released crown weevils from other parts of New Zealand, in the hope of replicating the success observed elsewhere. During this process, it was observed that weevils collected in North Canterbury appeared noticeably larger than weevils collected in the Manawatu, an observation that sparked our imagination.

We subsequently designed a project aiming to answer two questions:

1. Are there size differences between crown weevils in different parts of New Zealand?
2. If a difference does exist, is it consistent with variable food quality?

If the answer to both questions is yes then it may be possible to improve weevil establishment in the Manawatu simply by maintaining small pockets of nitrogen-enriched thistles. Next we asked biosecurity officers from all over the country to collect and send in samples of adult crown weevils and thistle rosettes for analysis. The results will be presented at NETS2010.

CONCURRENT 1 - MARINE AND FRESHWATER

Marine Value Mapping

Simon Phillips*, Daniel Kluza, Andrew Bell, Eugene Georgiades
***MAF Biosecurity New Zealand**

Simon is a marine adviser in the Risk Analysis group of MAF Biosecurity New Zealand. Risk analysis involves collecting, synthesising, and presenting scientific information on biosecurity risks which then provides a foundation for decision-makers. In addition to the Marine Value Mapping project he is involved in the vessel biofouling project which is looking at the introduction of non-indigenous marine species to New Zealand and what we can do to stop it.

To effectively manage biosecurity risks to New Zealand's marine environment, it is critical that we have an understanding of what is at risk. Fundamental questions are "What do we want to protect?, Why do we want to protect it? and Where is it?" Knowing the identity, importance and location of "core values" allows government agencies to better anticipate potential impacts to the environment, and this knowledge can be used to prioritise management and inform decision making.

To address this information need, MAFBNZ, in conjunction with the Department of Conservation (DoC), co-ordinated a research programme to identify and map a range of subcomponents for each of the following marine core values:

- environmental – for example, habitat types, protected areas and species distributions;
- economic – for example, coastal land value and commercial fishing;
- social – for example, recreation sites and amenity value; and
- cultural – for example fishing grounds such as taiāpure and mātaītai.

The project is the first systematic attempt to identify and map components of value (environmental, economic, social and cultural) in relation to New Zealand's coastal marine ecosystem. The comprehensive database of marine resources and their relative values can be applied to a variety of coastal zone impacts. In this way, the project will have wide benefits to coastal resource managers, including central and local government, scientists, researchers and environmental decision makers.

Ecological effects of the invasive alga *Undaria pinnatifida* on rocky shore communities and the role of nutrients on its success.

Bionda Morelissen, Victoria University of Wellington

Bionda is a PhD student at Victoria University of Wellington and is interested in the effects of human alterations on ecosystems. She completed her MSc degree in Earth System Science at Wageningen University, the Netherlands, studying effects of temperature on an intertidal community (in California, USA). Bionda came to New Zealand in 2007 to study towards her PhD degree, investigating the ecological effects of an invasive seaweed on native intertidal communities.

The introduction of non-native species into the marine environment is considered a major threat to marine ecosystems as it may have enormous effects on biodiversity, community dynamics, productivity, habitat structure and fisheries. Disturbed habitats seem to be more susceptible to invasions, and because human actions are responsible for a large degree of disturbance in many habitats, it appears that the success of invasions may be mediated by anthropogenic effects. A major consequence of increasing human populations in coastal regions is alteration of nutrient regimes in aquatic environments. Small increases in nutrient supply can lead to an increase of algal biomass but a decrease in macroalgal diversity, hence, this process may affect how introduced seaweed species behave in new systems.

I investigated if the introduced seaweed *Undaria pinnatifida* affects patterns of competition and community composition in rocky intertidal communities. *U. pinnatifida* is abundant in the Wellington Region and could potentially have considerable impact on native algae. Further, I studied the effect of different nutrient regimes on reproduction and early development of *U. pinnatifida* in a laboratory experiment. Investigation of factors that underlie the invasion dynamics and ecological roles of *U. pinnatifida* in the Wellington Region, and the consequences of anthropogenic impacts on rocky intertidal habitats, can aid in the implementation of strategic environmental protection and conservation plans to maintain rocky intertidal biodiversity.

Managing Marlborough aquatic weeds – getting the know how so you can do

Paul Champion, NIWA and Ben Minehan, Marlborough District Council

Paul is a Principal Scientist at NIWA and has been a part of the aquatic plant management research team since 1988, and has over 25 years experience in the field of plant ecology. He specialises in freshwater biosecurity and wetland ecology and management, providing management advice to various government departments and regional authorities. He has also worked in conjunction with the Department of Conservation, Regional and District Councils in assessing the conservation needs for nationally endangered plants and vegetation types, and also the selective control of weed species with minimal damage to native species.

Marlborough District has more than its fair share of aquatic weeds and this talk will outline some District Council-led eradication programmes on a range of these including parrot's feather (*Myriophyllum aquaticum*), eelgrass (*Vallisneria spiralis*), reed sweet grass (*Glyceria maxima*), Senegal tea (*Gymnocoronis spilanthoides*) and purple loosestrife (*Lythrum salicaria*). As well as giving details of the methods used and success to date, this talk will outline the value of the Envirolink Programme run by FRST, which facilitates the transfer of science to regional councils and unitary authorities like Marlborough, and the importance of early intervention.

Managing Marlborough aquatic weeds: Reed Sweetgrass (Glyceria Maxima) – the details of the can do

Clare Duston, Kaitiaki o Ngahere Ltd

Clare has worked for Kaitiaki o Ngahere (formerly Te Ngahere) since 2007. She studied Conservation and Ecology at Lincoln University and has a background in outdoor and environmental education as well as ecological restoration. She has lived in the Nelson Marlborough area for five years and been involved in the reed sweetgrass control for the MDC since the beginning of the current project.

Kaitiaki o Ngahere Ltd – formerly Te Ngahere - has implemented the control programme for *Glyceria maxima* in the Marlborough Region since 2007. Although limited in its distribution, this highly productive and competitive species has come to dominate riparian areas along nutrient rich lowland waterways, also forming floating mats that can block pumps and promote flooding. In nutrient rich sites, it can exclude other emergent species. It is toxic to livestock although cattle readily eat it and deaths have been reported as a result of feeding on this species (Connor 1977).

This presentation will briefly cover the background aspects of the programme before detailing the methods used, including herbicides, rates, frequency of application and which techniques and equipment have been most successful. Problems encountered and solved will be discussed and other recommendations for the practicalities of successfully controlling this invasive semi-aquatic plant.

Mob-stocking for vegetation control – if it works for cattle, will it work with fish?

Victoria Lamb, MAF Biosecurity New Zealand

Victoria is a Senior Adviser with the Pest Management Group of MAF Biosecurity New Zealand and manages the National Interest Pest Responses.

Mob-stocking is a frequently used form of management to control pasture weeds and has been used extensively in the past to break in scrub covered land for pastoral farming. Can this technique be successfully transferred to aquatic environments using fish for localised control of aquatic weeds?

The use of grass carp or white Amur (*Ctenopharyngodon idella*) for the control of a range of aquatic weeds is becoming more widespread throughout the New Zealand. So can a herbivorous fish such as grass carp be used in the same way a pastoral farmer might use cattle or goats to clear an area of weeds? Can fish be put under grazing pressure contained within a specific area, and if so what potential does this provide for future aquatic weed management?

Grass carp have been introduced to Lakes Tutira, Waikopiro and Opouahi as part MAF Biosecurity New Zealand's hydrilla eradication response. At Lake Opouahi a mesh fence was erected around the major hydrilla bed near the jetty, and in December 2008 about half of the grass carp destined for the lake were released into the enclosure.

It was expected that by April 2009 the hydrilla beds would have been eaten down enough to reduce the risk of fragments being transferred by recreational users. However, by February 2009 the fish had eaten all the vegetation inside the fence so, several months earlier than expected, the fish were released into the rest of the lake.

While mob stocking to create intensive grazing pressure is common in a pastoral situation, no record of the approach being used with fish has been found in the literature. So can the experience at Lake Opouahi be developed and refined to provide a tool to manage localised aquatic weed populations?

There are of course many questions – how best to construct a fence; how deep can such a fence be built; how many fish are needed and for how long; what aquatic weed species will this technique work on; can the fence and the fish be moved around the way a rabbit hutch on the lawn is; would a cage like a guinea pig cage work in deeper water where a fence might not reach.... perhaps this is the beginning of a more precise tool for aquatic weed control. To find out, research is being commissioned to investigate this possibility.

Know where for lake weeds

**Mary de Winton, M.; Compton, T.J.; Champion, P.D., Clayton, J.S; Wadhwa, S.;
Leathwick, J.R.,
National Institute for Water and Atmosphere**

Intercepting submerged weeds before their introduction, or at an early stage of lake invasion, is a feasible and cost-effective management goal. But with competing priorities in a region, where should proactive efforts of lake protection or surveillance be focused? Recently a predictive model was developed using boosted regression tree analysis to give lake risk probabilities for four different submerged weed species. The model predicted current species distributions with a high degree of accuracy. The importance to vegetative weed spread of anthropogenic variables such as human

population density and roading infrastructure was confirmed, as was spatial proximity of infested lakes. We examine model predictions in three regions to see how results might inform management priorities, within a wider framework of balancing lake values with weed threats.

CONCURRENT 2 - PEST ANIMALS

Rabbits – A new look at an ongoing issue.

Sherman Smith, MAF Biosecurity New Zealand

Sherman is a Senior Advisor National Coordination in the Pest Management Group of MAF Biosecurity New Zealand, and provides support to the New Zealand Rabbit Coordination Group. He has previously worked in various roles with the Department of Conservation, and more recently as a Biosecurity Officer Pest Animals with Environment Southland

New Zealand has a long history of rabbit management, including periods of substantial public investment such as the pest destruction boards and the Rabbit and Land Management Programme. The illegal introduction of rabbit haemorrhagic disease (RHD) virus in 1997 resulted in substantial rabbit population reductions. In highly rabbit prone areas of the South Island RHD provided land owners with a much needed relief from the high costs of rabbit control. However it wasn't to last and in recent years the rabbit population in those semi-arid areas have increased again.

'The Current State of Rabbit Management in New Zealand' report commissioned by MAF Biosecurity New Zealand in association with the Rabbit Coordination Group has summarised trends in pre and post RHD rabbit populations in New Zealand. It draws on the knowledge and experience of scientists, pest managers and farmers to identify issues, options and recommendations for the future. The current state and an action plan to improve rabbit management in New Zealand will be discussed.

The use of Judas tahr in Otago

Bruce Kyle, Department of Conservation

Bruce Kyle is a Technical Support Officer (Animal Pests) for the Department of Conservation, based in Dunedin. Formerly he was an agricultural researcher (Agresearch) and a genetics manager (Mt Linton Station). His primary role is to advise and support DOC's pest control programmes throughout Otago Conservancy, focusing mainly on the control of tahr, goats, rabbits, possums, cats, stoats and rats. Much of his work involves liaison with DOC staff, other pest agencies, suppliers and researchers to develop or improve pest control methods, and to ensure the Otago programmes are carried out cost effectively, safely and according to Best Practice.

The Himalayan Tahr Plan was developed in 1993 to maintain tahr numbers at around 10,000 animals within a feral range of approx. 7000 sq. km on both sides of the NZ Southern Alps. This range is divided into seven management units of which two, in Otago, are managed by the Department of Conservation as buffer zones between the tahr feral range and the Fiordland and Mt Aspiring national parks. This paper describes the role Judas tahr play in keeping an area of 420,000 hectares free of tahr, and looks at what makes the most effective Judas animal.

Exotic bird response

Art Polkanov, Department of Conservation

Art is a professional zoologist and ecologist and has worked almost all of the last 20 years as a researcher and wildlife conservation officer in Europe, former Soviet Union, USA and Middle East, except for a four year period when he worked as Environmental Health and Safety Manager for one of Mobil Oil's exploration divisions in Central Asia. Art holds a PhD in wildlife biology, a patent in remote sensing use for epizootology and has published dozens of papers on wildlife biology, parasitology and industrial ecology in USSR, UK, New Zealand and Australia. For quite a few years he has worked for DOC as a Rainbow Lorikeet Project Manager and Biosecurity Ranger in Auckland Area.

Exotic birds may look attractive, but if left uncontrolled to establish populations in the wild, they can pose a serious threat to New Zealand's native wildlife and an economic threat to the local horticulture industry. Exotic bird response started in Auckland with the rainbow lorikeet eradication operation in 2000 after series of illegal and deliberate releases throughout 1990s. Well over 200 lorikeets have been recovered in the Auckland Region since the response operation began. The response team adopted a policy of transparency and friendly approach. Members of the public play a key part in this response, actively reporting sightings to DOC Auckland. The approach included public relations campaigns, distribution surveys and estimation of the population size, development of operating procedures, baits and lures trials, enhanced trap design, capture trials, invasion and re-invasion risk assessment. Risk of establishment of a feral population remains at the same level, as the escapes and liberations rate in Auckland remains consistent over the last few years. Apart from the lorikeets the response team deals with red-vented bulbuls, Indian ring-neck parakeets and other exotic parrots ranging from lovebirds and budgies to cockatoos. DOC Auckland continues to deliver the response in partnership with MAFBNZ, building on the experience and knowledge gained earlier. They are joined by the Auckland Regional Council which has included several exotic bird species in its Regional Pest Management Strategy.

Great pets or potential pests? Exotic reptiles in New Zealand

Heidy Kikillus, Victoria University of Wellington

Heidy Kikillus is a PhD student at Victoria University of Wellington researching exotic reptiles in New Zealand. A trip to the Galapagos Islands in 2001 sparked an interest in invasive species, which led Heidy to New Zealand to complete a Master of Conservation Biology. She is currently in her final year of her PhD.

Exotic reptiles are popular pets in New Zealand and while several species are legally kept in captivity, the establishment potential and associated impacts for these animals are unknown. Worldwide, reptiles are successful invaders, often implicated in serious ecological and economic disruption. One exotic species has already established in New Zealand (the Australian rainbow skink, *Lampropholis delicata*). The potential for further establishments is ever present as several species of exotic reptile are legally traded in New Zealand and escapes and intentional releases are commonly reported. This research aims to identify species of exotic reptile that may have the ability to establish in New Zealand, areas of New Zealand that may be susceptible to invasion, and potential impacts associated with their establishment. Methods include bioclimatic and physiological models, as well as disease screening of captive pets and specimens intercepted at the borders.

CONCURRENT 2 - PEST PLANTS

Innovative ivy control - sharing the experience

Kay Griffiths, The Conservation Company Ltd

Kay's interest in nature conservation and biosecurity issues has been developed over the last 20 years by working in various roles - from a Conservation Corps member based at Nelson DSIR, to ranger and biodiversity threats manager in DOC, and completing a PG Diploma of Wildlife Management. Kay is currently based in Central Hawke's Bay and, with her partner Craig, has been running The Conservation Company Ltd since 2005.

We all know ivy is hard to kill! In the largest documented invasion of English ivy (*Hedera helix*) into a native habitat in New Zealand, innovative techniques have been required to get results and save a biodiversity gem.

Puahanui Bush is a 130ha conservation covenant on Gwavas Station, Tikokino, Central Hawke's Bay. The lowland podocarp forest is the largest remnant of its kind within three surrounding ecological districts, and supports regionally rare long-tailed bats, bush falcon, large numbers of tui and kereru, forest gecko, and a range of unusual invertebrates.

Garden escapees have become established in and around Puahanui Bush over the last century. While hawthorn (*Crataegus monogyna*) and Japanese honeysuckle (*Lonicera japonica*) are also well established, English ivy has had the most noticeable impact, has become the most widespread (50% of total area), and has the potential to continue degradation of the forest ecosystem. Control of the ivy began in 1999 with cutting of adult vines and herbicide application. Progress was slow and results inconsistent. Grazing by sheep and subsequent herbicide applications was successfully trialled to emulate mechanical weed-eating which had been a successful pre-cursor to herbicide application in the nearby homestead garden. Over 10 years later initial control is complete. Grazing by sheep has played a vital role in achieving over 90% kills with only one herbicide application.

This presentation covers impacts of ivy on the forest ecology, results of different control techniques and future plans to ensure the bush remains ivy free.

Weeds as an obstacle to indigenous revegetation projects

Margaret Peace, Tuamarina Weedbusters

In a community landcare project aimed at restoring appropriate native vegetation to a wetland adjacent to a local creek, weed competition has proved to be the greatest challenge. Optimal soil moisture and fertility have favoured planting of trees from root trainers, but for the next four years, they required releasing from weeds growing over 1.5m high. Since weed control with herbicide or mechanical weeder often results in loss of trees, we preferred manual weeding by volunteers, but found that young people (school children and students from Outward Bound) could not distinguish between weeds (such as docks and thistles) and the young trees. If New Zealand is to make any progress in weed control there is an urgent need to make the public, especially the young, more aware of the commonest plants in our environment.

National Weeds Distribution Database – benefits to NZ and recent progress

Graeme W. Bourdôt, AgResearch and Jerry Cooper, Landcare Research

Graeme did his PhD at Lincoln University on yarrow as an agricultural weed. Since then he has worked as a weed scientist with AgResearch and its various predecessors. He is currently a Science Team Leader managing AgResearch's weed science programmes at Lincoln. These programmes focus on improving the management of weeds in pastoral, forestry and natural ecosystems through a better understanding of weed population dynamics.

A national weeds distribution database (NWDD) documenting the occurrences of weeds across New Zealand's landscape is necessary firstly for prioritising species for management under schemes such as the National Pest Plant Accord, National Interest Pest Response and Regional Pest Management Strategies. Such a database would enable prioritisation by facilitating the comparison of modelled potential future distributions (as is being made possible through the research programmes Undermining Weeds and Beating Weeds II) with current distributions. Secondly, the database would enable measurement of the outcomes of management by enabling the comparison of current and historical distributions of the target species.

The value of such a national database, which would essentially make existing regional weed occurrence databases nationally available through one web-based system, was recognised by New Zealand's regional councils in a recent feasibility study funded by an Envirolink Medium Advice Grant (Basse et al. 2008). Its value will increase with time as naturalisations from the pool of ca. 24,000 exotic plant species continue unabated (Gatehouse 2009) and the task of deciding which species to manage becomes increasingly more complicated. Further progress towards the database has included presentation of a case to the Biosecurity Managers Group in May 2009, establishment of a Steering Group in August 2009 with representation from key stakeholder organisations (DOC, Regional Councils, MAF BNZ, Future Forest Research) and the securing by this group in November 2009 of funding (Envirolink Medium Advice Grant and TIFBIS) for a scoping study to be completed by 31 May 2010.

The scoping study will develop a costed implementation plan for the NWDD, together with possible governance and long term support options. The study will be developed through consultation with data providers, both in local government and national agencies. We will take into account both the diversity of data available, and the diversity of current data management practices. We will incorporate the outline of a national information framework necessary to maintain an up-to-date NWDD, with both current and historical data from multiple sources, together with the necessary linkages to emerging decision support systems providing accessibility to the spectrum of end-users.

The scoping study's key output will be an Envirolink Tools Proposal seeking the funds to build the database system. For this proposal to be successful the database will need to be highly ranked as a "resource management tool" in the Regional Councils collective submission to FRST in October 2010. The scientific expertise exists in New Zealand (in Undermining Weeds and Beating Weeds II) to predict weed potential distributions and a national weeds distribution database will complement this capability enabling weeds to be prioritised and their management outcomes assessed.

Protecting conservation values whilst carrying out large scale weed control on Kaitorete Spit.

Wayne Beggs, Department of Conservation

Wayne is a biodiversity ranger with DOC in the Mahaanui Area Office. He has worked for DOC for 15 years and has a degree in Parks, Recreation and Tourism Management.

Kaitorete Spit is situated on the south-west edge of Banks Peninsula and is 28km long and 3.2km wide at the eastern end. It includes the largest and most intact indigenous coastal dune ecosystem remaining in New Zealand. Kaitorete Spit is a stronghold for numerous threatened and locally endemic plants, invertebrate and reptile species. The coastal fringe is also important habitat for seabirds and marine mammals. In addition Kaitorete is important for its pre-European heritage, with archeological sites scattered along the spit. Add to this the farming on the spit and the established use of the site for recreational purposes, including speeding up and over the dunes on recreational vehicles, and you have a range of conflicts of interest.

Weed threats have included marram grass (*Ammophila arenaria*), tree lupin (*Lupinus arboreus*) plus a range of species escaping from the gardens of the local beach settlement. In 2005 tree lupin covered 92ha or 20% of the dune system and was expanding at a rate which was likely to see it covering the entire dune system by 2030.

The Department of Conservation have been working with a range of experts, district council staff, local landowners, community groups and Otago University staff and students to find way to protect all the values of the area. This has included trials of new methods, monitoring, research and working with the community. Over the last five years significant progress has been made in identifying suitable herbicides and application rates to allow tree lupin to be controlled without a having a significant impact on the indigenous flora and fauna.

CONCURRENT 2 - INSECTS, GOOD AND BAD

Southern Saltmarsh Mosquito eradication - the job done?

Don Hammond, Hammond Resource Management Ltd.

Don has over 30 years experience in forest management and in biosecurity management. In recent years he was responsible for the large scale aerial spraying programme over Auckland to eradicate painted apple moth and smaller eradication programmes for fall webworm in Auckland and Asian gypsy moth in Hamilton. More recently he has been contracted by MAFBNZ as Operations Manager for the successful red imported fire ant eradication programme near Napier and for the almost completed eradication programme for southern saltmarsh mosquito. He current works with several agencies to manage and reduce the impact and spread of the phytophthora that is affecting kauri. Don is on the Governance Council for the Better Border Biosecurity (B3) research programme and involved in many forest industry biosecurity and forest health management and research organizations.

Southern Saltmarsh Mosquito (SSM) was first detected in Napier in 1998. It subsequently spread to 12 areas across the country. An eradication programme was initiated and subsequently approx \$75M has been spent on the programme to eradicate the mosquito from NZ. The programme has been managed firstly by the Ministry of Health and since 2006 by MAFBNZ.

The eradication programme has been a huge success with the numbers of areas slowly reducing with the last area to be declared eliminated in July 2010 being Wairau (near Blenheim). Subject to no further finds we hope to be able to declare national eradication at that time.

This will be the first large scale eradication of a saltmarsh mosquito in the world, something we should be rightly proud of. It is particularly pertinent to NETS given the timing and the final location.

Argentine ants: ecosystem impacts and improved surveillance

Margaret C. Stanley, University of Auckland, and Darren F. Ward, Landcare Research

Dr Margaret Stanley is a Senior Lecturer at the University of Auckland and is the programme director of the Postgrad Diploma & MSc in Biosecurity. Previously she was employed as an ecologist at Landcare Research where her research focused on the spread, impact and management of weeds and invasive ants.

Research on the impacts of Argentine ants (*Linepithema humile*) overseas usually report reduced diversity and abundance of native ant species. However, New Zealand has a depauperate native ant fauna and very little research has been carried out on Argentine ant impacts in New Zealand to date. We investigated the impact of Argentine ants on invertebrate diversity and composition, microbial biomass and subsequent impacts on below-ground processes such as decomposition. Differences in invertebrate composition were apparent between invaded and uninvaded sites, microbial biomass was reduced at invaded sites, and results indicated lower breakdown of litter at invaded sites. Investigations into how Argentine ants influence the health and fitness of plants show boneseed (*Chrysanthemoides monilifera monilifera*) health and fitness may be improved via Argentine ant's mutualistic relationship with scale insects. Conversely, preliminary investigations suggest that Argentine ants may be having a negative effect on the fitness of flax (*Phormium tenax*). In terms of impacts in native ecosystems, we believe the most important aspects are the persistence and density of Argentine ant populations. So how do we detect Argentine ants at low density before they become abundant and persistent? Our trials show pitfall traps are more effective than baits, especially when left for several weeks and used with a fish oil attractant. Where pitfalls are not practical, baits are most effective at detecting low density populations of Argentine ants when left out for 3-6 hours.

Dung Beetles in New Zealand

Hugh Gourlay, Landcare Research

Hugh started working at DSIR, Lincoln in the biological control of weeds in 1982. He looks after the insect containment facility at Lincoln where all the new insects are held before release into NZ. He also has worked a lot with farmer-based community groups seeking funding for biocontrol projects to help farming communities in NZ. Hugh is responsible for host testing new potential biocontrol insects and then the mass rearing and release of them. He is currently the branch chairman for the Canterbury Branch of the NZBI and has been promoting the restoration of the Nicholson Park and Whitewash Head walkways in Christchurch. He works with a number of international organisations in the UK, Hawaii, Colombia, Australia, and Europe on the biocontrol of weeds especially gorse, banana passionfruit, broom, ragwort, and thistles. Hugh has recently been involved in sourcing funding and developing a project on the introduction of pastoral dung beetles into NZ.

A recent MAF Sustainable Farming Fund funded project to import and release up to 12 species of pastoral dung beetle into New Zealand has begun. This project aims to introduce several species of pastoral dung beetles throughout New Zealand to remove the above ground dung problem faced by sheep, beef and dairy farmers. Dung beetles will reduce greenhouse gas emissions, reduce the reliance on pastoral fertilisers, reduce effluent runoff into waterways and reduce the amount of sheep and cattle drenching carried out on farms in New Zealand. This presentation is an update on what has happened in this project so far, how it came about, what it aims to achieve and how it will achieve those aims.

Heather biocontrol – the next big success?

Paul Peterson and Simon Fowler, Landcare Research, Paul Barrett, Massey University, and Merilyn Merrett, The Open Polytechnic of New Zealand

*Paul has worked as part of the 'weeds team' within Landcare Research ever since graduating with a Masters in Ecology from Massey University in 1993. When he's not at work scrambling around on the ground with plants or chasing bugs around with a butterfly net, he's at home scrambling around on the ground with his sons or chasing them around with 'reasoned arguments'. Recent highlights for Paul include some excellent progress with biocontrol of heather (*Calluna vulgaris*) and making it to Saturday morning T-ball on time.*

Nodding thistle (*Carduus nutans*), St John's wort (*Hypericum perforatum*), ragwort (*Senecio jacobaea*), alligator weed (*Alternanthera philoxeroides*) and mistflower (*Ageratina riparia*) are all examples of successful biocontrol programmes in New Zealand. Could heather (*Calluna vulgaris*) be the next?

The heather beetle (*Lochmaea suturalis*) was released into New Zealand as a biocontrol agent to control over 50 000ha of heather on the Central Plateau in 1996. Despite initial set backs, which included the failure of all releases in the 1990s to establish except one at Te Piripiri, and then the collapse of the Te Piripiri beetle population three years later, we are now witnessing the potential of this agent. Beetles at three high altitude Central Plateau sites have slowly built to plague proportions and are now a serious prospect for New Zealand's next biocontrol success story. Last year nearly 20 ha of heather was either severely damaged or killed by beetle feeding: this year that figure may jump to 100ha. In addition, our impact assessment data show that native species remain untouched, or are promoted, however some exotic species replacement has occurred close to roads or other disturbed sites.

Our investigations are unravelling an intriguing set of factors that appear capable of reducing heather beetle performance at Tongariro compared to what we expected from observations in the UK and what we have seen at Rotorua. Key issues are:

- i) NZ beetles are unusually small
- ii) Tongariro heather has nitrogen levels ~1% dry weight cf. ~1.5% in the UK or at Rotorua
- iii) variable late winter/spring weather typical of higher altitude NZ areas can cause high beetle mortality.

Current research on agent genetics/morphometrics, feeding behaviour/host plant nutrition and improved climate matching is providing insights into why heather beetle populations have been slow to establish and build to damaging levels, and these insights may also be useful for 'recalcitrant' agents in other biocontrol programmes.

Day 2 Thursday 22 July 2010

FIELDTRIP BACKGROUNDER: MARLBOROUGH SOUNDS

Chemicals for killing standing radiata pine in the Marlborough Sounds by stem poisoning

Nick Ledgard, Andrew Macalister, Thomas Paul and David Henley

Nick Ledgard works with the NZ Forest Research Institute (trading name, Scion), and has been researching wilding ecology and control for over 20 years. For the last four years he has been manager of a wilding conifer research project funded largely by MAF's SFF and run on behalf of the NZ Wilding Conifer Management Group. The other major researcher for the Group is co-author, Thomas Paul, assisted by Technician, David Henley. This paper describes a conifer control technique used widely in the Marlborough Sounds, where the fourth author, Andrew Macalister manages the Marlborough Sounds Restoration Trust, which has a large wilding control programme underway.

Wilding conifers are being stem poisoned in the Marlborough Sounds. This control technique encourages native plant successions, whereas felling can promote dense wilding regeneration. In a trial on Arapawa Island, twenty-three chemical x application rate treatments were applied to mature radiata pine. Over all tree sizes, metsulfuron was the most effective chemical. A simple, fail-safe means of killing radiata pine trees of any size was 25mls of a mix containing 10g of metsulfuron / litre of water, applied to 20mm diameter/50mm deep holes, spaced at 50cm intervals around tree trunks at 30-50 cm above ground level. As the chemical cost is minor compared to the cost of the labour (plus equipment) for accessing trees and drilling holes, a more concentrated mix is now being used for large-scale operational poisoning. Solid metsulfuron granules are being tested for those not wanting to carry chemical liquids over difficult terrain.

Marine Biosecurity and the aquaculture industry in the Top of the South

Graeme Coates, Marine Farming Association

Graeme is the Executive Officer of the Marine Farming Association which represents the interests of the mussel farmers across the Top of the South Island.

The Top of the South produces 70% of New Zealand's aquaculture products. Graeme will present a broad brush talk on the current status of the industry and likely changes in the future. He will also discuss marine risks for the industry.

Pest eradication on Blumine Island

Mike Avis, Department of Conservation

An overview of the Blumine Island restoration project, how DoC went about eradicating rats from the Island in 2005 and the subsequent changes and relocations of species to that rat free environment.

Building regional marine biosecurity capability

Lou Hunt, MAF Biosecurity New Zealand

Lou is currently a Senior Advisor, National Coordination in the Pest Management Group at MAFBNZ. She focuses on marine pest management and coordinates several marine partnerships. She has worked in marine conservation management for DOC and used to manage the Southland Undaria Control Programme. Prior to working in marine management Lou was in the marine science field, working at NIWA and abroad.

The Top of the South Marine Biosecurity Partnership is an example of a regional partnership model being used by MAFBNZ within other regions of New Zealand. This approach supports local on the ground “know how, can do” capability and capacity building. Regional marine partnerships will be reviewed with a focus on aspects that have worked well, and areas that require attention to support future marine biosecurity needs of the pest management system.

The role of the regional co-ordinators for the Top of the South Marine Biosecurity Partnership

Al Campbell, Campbell Mincher Ltd

Al is a Director of Mincher Campbell Ltd, a company recently formed by himself and Russell Mincher from Nelson. Both also have their own Consultancy companies. Al comes from a background in Public Health and has an extensive knowledge in environmental health and shellfish safety, having worked with the commercial and non-commercial shellfish sector throughout the South Island for 18 years.

Al Campbell, one of two Regional Co-ordinators for the Partnership, will describe the Partnership Structure and outline the aims of the Strategy, as agreed by the funding Partners. He will then briefly give an idea of how the Strategy is being implemented, including what specific activities have been undertaken and how. He will also briefly comment on what stage the Strategy and the TOS Partnership is at in this regard.

Weed control and restoration work in the Para Swamp

Vaughan Lyn, Fish and Game

Para Swamp is the largest remaining freshwater wetland in the Marlborough region. It covers one hundred and twenty hectares and is willow infested. Fish and Game is undertaking a project in the Para Swamp to increase waterfowl habitat and game bird hunting opportunity. Willow eradication is a major part of the project and is being carried out by using glyphosate. Glyphosate is applied from the air and the ground. When willow control is complete, earthmoving machinery is used to create areas of open water with islands. A mixture of native and exotic plants will be replanted to replace the willows.

FIELDTRIP BACKGROUNDER: SOUTH MARLBOROUGH

Balancing production, conservation and recreation on Molesworth Station

Jim Ward

Jim manages Molesworth Station, New Zealands largest farm.

This presentation will cover the history and scale of Molesworth Station and how and why it was established. It will also look at management philosophies, previous management, and the role of the current steering committee.

Stocking and production levels will be considered, as well as weed and pest problems, history of public access pre and post-2005 and DOC involvement during both periods. Finally, it will look at the future of Molesworth Station.

The battle against invasive weeds and pests in the high country

Steve Satterthwaite

Steve runs Muller Station in the Upper Awatere Valley. He has 40 years' experience of, and delivering control to, weeds and pests.

In the last 40 years:

- Broom has been “minimised” from an infestation level choking the whole Awatere River in the early 70's to now where it is hardly noticeable.
- Rabbits are now resurging as RHD wanes in efficacy and we have to resort back to traditional/ conventional control methods.
- Tb has practically been eliminated from the Awatere through collaboration and co-operation with AHB (outstanding!!!).

However, as well as maintaining control of our traditional problems, new threats are emerging which may well be more insidious and have greater economic and social impact in the decades to come. Wilding pines coming from the west is already happening, and chilean needle grass getting established in these vast pastoral landscapes doesn't bear thinking about!

Farming and Chilean needlegrass

Rex Dodson

Rex Dodson farms at Blind River near Seddon.

Chilean needle grass (*Nassella neesiana*), as the name implies, is a first cousin to our old problem, nassella tussock. However, I want to tell that you this plant is a far greater problem, as all characteristics of it are designed to survive, to colonise and to expand its domain. My experiences with various chemicals, at different rates and using different spraying techniques, over different seasons for fifteen years of conscientious effort, will explain the problem first hand. I am not winning our battle, and our district is not winning the war. With the Taskforce (Flupropanate) trial plot on our farm we know we urgently need this new (old) weapon in our armoury to exert real strategic control.

Farming and nassella tussock

Tony Turnbull

Tony farms at Jedburgh in the Redwood Pass

Our property is located twenty minutes south east of Blenheim. We farm sheep and cattle on 800 hectares with an average rainfall of about 450 mm. Our major bio security problems are drought, nassella tussock and rabbits. Our ways of coping with this is through destocking early when it becomes dry and through utilising the natural sub-clover, to give excellent quality feed for the stock, In addition to this we also employ grubbers who spend hours eradicating the tussock by hand. My farm advisor said "if only we could swap our weed and pest costs to fertiliser costs" we would see large reductions in tussock and rabbit numbers due to increased grass cover, thus eliminating bare patches which both rabbits and nasella thrive on.

The challenge of farming dry pastoral country sustainably

Doug Avery

Doug farms at Bonavaree near Lake Grassmere.

Agricultural sustainability is like a three legged stool, one leg financial, one leg environmental and one social. At our farm "Bonavaree" in dry Eastern Marlborough we believe the best form of defence is attack. While most NZ sheep and beef farms have struggled in recent years Bonavaree has had huge growth increasing its EBIT four fold. This has made issues around bio security much easier to manage.

Day 3 Friday 23 July 2010

PLENARY 3

‘New Zealand is The Greatest Living Space on Earth’ The Department of Conservation’s biodiversity training for iwi and community.

Suzy Randall, Department of Conservation

Suzy has been managing the Natural Heritage Training Programme at the Department of Conservation for the last five years. Prior to this she worked in Samoa at the Secretariat of the Pacific Regional Environment Programme (SPREP), in the Bird Conservation and Invasive Species Programme. Suzy comes from an ecologist background in Australia and combines this with learning and development at DOC.

‘New Zealand is The Greatest Living Space on Earth’ is The Department of Conservation’s aspirational vision. It is broader than conservation and broader than DOC. DOC wants to connect with a whole range of sectors from education, health, tourism, business and the New Zealand conservation community to make it happen. Training is one avenue that DOC is using to work towards this vision.

DOC will continue to grow knowledge and skills and find opportunities to increase awareness, understanding and support for conservation through its everyday work and training and education. We currently have a range of training and education programmes to support this vision, but what we are missing? What else can we do?

DOC has numerous learning and development programmes supporting audiences from primary and secondary schools to Maori Cadetship and the Trainee Ranger Programmes and delivering Biodiversity training through Polytechnics. The Biodiversity training programme is open to the public. We even are reaching people globally (on the internet) with Biodiversity online courses. I want to present the range of field based and online courses that are available to iwi and the community, and get feedback on which skills we are missing in our training programme.

Working together to tell gardeners about pests

Helen Braithwaite, Department of Conservation

Helen has always been interested in ecological restoration and has been working on weeds since 1995, initially for Wellington Regional Council and now with the Department of Conservation (DOC). Her current role is in giving technical support on weeds issues to field staff and to managers. She has also been involved in developing DOC’s standard operating procedures for weed control work, particularly around surveillance and the early detection and control of new invasive weed species. Helen believes that it is very important to involve everyone in stopping the spread of pest species, so has been an enthusiastic supporter of the Weedbusters weed awareness initiative. Helen has been involved in a variety of ways to encourage the public to get involved in weed control, including the Bush Telly stand at the Ellerslie Show in Christchurch.

In 2009 the move of the Ellerslie Show from Auckland to Christchurch was controversial for both cities. However, controversy can help increase interest and publicity. So when the Bush Telly floated the idea

of using a stand to film live interviews on conservation topics, many of us working in the world of pest control and native restoration in Christchurch jumped at the chance.

Preparing for the 2009 event was an exercise in how to develop a prize-winning stand with some good ideas, lots of enthusiasm and very little funding. People and organisations involved in restoration and pest control got involved and worked well together under the Bush Telly brand. The display won the supreme prize and attracted lots of attention and queues – we certainly got the message about weeds and animal pests out to a large number of people.

Another display was undertaken at Ellerslie in 2010. This was developed after learning from the experience in 2009 to deliver an even more spectacular display and more chance to interact with visitors to the show. Again a mixture of people with a range of talents were involved, including members of organisations like Weedbusters, NZBI and the local Botanical Society, staff from government departments, councils, research organisations, consultants and contractors. Some gave their time and others contributed equipment or cash. But the things that connected them all is their 'can do' attitude and desire to protect the places and species we value in New Zealand.

Community Groups: the problem; the funding; the result

Hugh Gourlay, Landcare Research

Whether it be farmer-based or organisational based community groups can get together and form a group to source funding for a local or national problem. Over the past 10 years a number of farmer-based community groups have formed to source large amounts of funding to help deal with a significant plant pest problem in their region. These groups have successfully sourced funding and with the assistance of Landcare Research have managed to establish a biocontrol project in their region and throughout New Zealand. This presentation will talk about how to form a community group, how to source funding and how to get a desired result.

Biosecurity from an Iwi perspective

Fred Temiha

Fred is the iwi representative on the Top of the South Marine Biosecurity Partnership.



Best practice: The New Zealand Wine Company has won an environmental award for its commitment to being clean and green. Chief winemaker David Pearce, left, and sustainability and compliance co-ordinator Craig Fowles received the award in Wellington last week. Photo: DEREK FLYNN

Clean, green blend a winner

A Marlborough winery has shown its environmental pedigree by winning a national Green Ribbon Award for its clean, green practices.

The New Zealand Wine Company, which makes wine under the Grove Mill, Sanctuary and Frog Haven labels, won the Small Businesses Making a Difference category at the 20th awards ceremony at Parliament last Thursday night.

The Green Ribbon Awards are bestowed on businesses and individuals by the Ministry for the Environment.

Company sustainability and compliance co-ordinator Craig Fowles and chief winemaker David Pearce were in Wellington for the event and said they were flattered even to be finalists.

The business won the award for its commitment to environmental friendliness, Mr Fowles said. The winery

recycles water, has switched to new bottling and transportation processes to reduce its carbon footprint, and has developed its own fertiliser through composting, among other initiatives.

"We were informed that we had made the final three and were rapt with that," Mr Fowles said.

The pair were "treated like royalty" in the capital, and to be named the winner was fantastic, he said.

"Our over-arching philosophy is to make award-winning wine with minimal impact to the environment."

The Blenheim company had won Marlborough environmental awards in the past, but this was the first time they had entered a national competition. "We see it as recognition of a lot of hard work."

The company became New Zealand's first carbon neutral winery in September, 2006.

Celebrating a fabulous first year for Yealands estate

What a year Yealands Estate has had.

Since officially opening their state-of-the-art eco-friendly winery at Hawke's Bay in August last year, the local family wine company has achieved a string of successes not to mention making international media headlines for their innovative environmentally sustainable initiatives.

As boss Peter Yealands says, there's no point in doing something half-right, especially when our environment's at stake.

He and his team have set out to create one of the most sustainable wine companies in the world, right here in Marlborough - producing affordable wines that don't just taste great but are good for the environment.

And as they celebrate their first birthday, they're already well on their way to reaching that goal.

Among many highlights in their first year of operation, Yealands Estate has:

- Become one of just 12 wineries in the world to be awarded carbonGlow certification.

This internationally recognised programme requires rigorous measurement and management of greenhouse gas emissions.

As part of achieving carbonGlow, Yealands Estate measures its use of all fuel, electricity, LPG, air travel, glass, waste, fertiliser and packaging

(including transport, glass, delivery and labour).

Unsurprisingly, emissions are offset through the use of solar and wind powered electricity, which they generate on-site at the winery, as well as the regeneration of native forests.

A third key requirement of carbonGlow certification is contributing to a programme of year on year improvement in emission reduction and hence the innovative ideas of Peter and his team really come to the fore.

- Won an Energy Efficiency and Renewable Energy award for small to medium businesses. The award, made by New Zealand's Energy Efficiency and Conservation Authority (EECA), recognises businesses that have achieved great things in energy efficiency or renewable energy projects.

Yealands Estate was commended for its innovative energy saving and resource conservation practices including solar and wind power, harvesting storm water to irrigate the vineyards around the winery and the development of more than 20 wetland areas to preserve native species and attract native birds.

- Gained accreditation through the Sustainable Winegrowing New Zealand (SWNZ) programme for both the Yealands Estate vineyard and winery.

- Captured the interest of

eco-promoters from one end of New Zealand to the other with the "My Green Idea" promotion which generated thousands of entries and has resulted in a huge on-line library of practical ways to save for the planet. The grand prize of \$30,000 was awarded to backing eco-teacher Lynette Main School, who are using the money to rebuild the school with sustainability in mind.

- Launched a number of world first eco-initiatives of their own, such as using guinea pigs, and new plastic-free Baby Doll sheep, for organic vineyard mowing and weed control.

All that while picking up more than 40 medals for their first vintage - including a gold at the International Australia competition, and a host of others at the Royal Easter Show, Air New Zealand Wine Awards and the International Wine Challenge awards.

Winemaker Dennis Worthington is delighted that the Yealands Estate portfolio is performing well both domestically and globally.

Home and based at Blenheim, Dennis was lured home from an international career in winemaking by the opportunity to be involved from the very beginning of a new winery and wine brand that is absolutely committed to excellence in sustainable life.

One year down the track and that's



filled with both the quality of the fruit and the winemaking team go to work with and the high tech winery, designed to operate sustainably at every level, in which they craft the Yealands Estate wines.

Nestled in the middle of the vineyard at the end of Seaford Road in Seaford, the winery demonstrates Yealands Estate's award-winning wines and innovations in its "country plinger" style cellar door

- which was itself recently awarded a Gold for the standard of its service in Wine Marlborough's "Cellar Door of the Year".

A warm welcome awaits all visitors, especially those from Marlborough's local community with whom the cellar door team are only too happy to share a taste of this fantastic venture.

Head on over and fully celebrate a fabulous first birthday.

One gold, 17 silver and 22 bronze awards.

That's something else we aim to sustain.

Better Yealands is creating New Zealand's first fully sustainable winery using wind turbines, solar power and water recycling to reduce environmental impact. Mind you he also wants to create great wines that anyone can afford. And if 40 wine awards for the first year's production are any indication, he's succeeding. Look for the Yealands range at leading grocery and liquor outlets.

Yealands
ESTATE
www.yealands.com

