

# Ecological Society Newsletter

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J.G. INNES  
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ROTORUA

## ECOLOGY: WHAT'S GOING ON OUT THERE - Some thoughts on the 1991 conference

Well, there IS a lot going on in ecology out there and I enjoyed catching up with it, and with the more than 150 ecologists at the conference.

The conference began with a formal powhiri and welcome from the tangata whenua, with Jacqueline Beggs and Murray Parsons leading and speaking for the visiting ecologists. Thank you to everyone involved for such a memorable start, and to Peter Williams and the organising committee, in particular, for a great conference all round.

Following the powhiri was a session on traditional harvesting which I felt only began to scratch the surface of a very complex issue. Hopefully, we will continue to contribute to this debate in other forums.

One of the most recurring themes of the conference had to be stoats. Mike Fitzgerald, working in the Orongorongo Valley, and the team of Elaine Murphy, Graeme Elliot, Colin O'Donnell and others working in the Eglington Valley, all pointed out that life isn't ever as simple as you would like to think it should be. They presented their evidence and ideas that the links between beech mast seeding and stoat interruptions are much more complicated than previously thought, and involve beech flowers, leaf fall and numerous invertebrates as well as mice. The Eglington team also unveiled their latest handy hint for catching stoats - using hens' eggs as bait. Apparently, they work a treat.

Another major theme of the conference had to be that nothing is ever static. Vegetation changes all the time in response to disturbances, climate, and age. When we look at a piece of vegetation, we have to remember all its accumulated history, and not just examine present-day influences. Animals

also move and change - keas move between ski fields and the surrounding mountains, robins introduced to Hawea Island four years ago now have a denser population than anywhere else on record; the number of weta out and about on Mana Island is strongly influenced by temperature; and the number of invertebrates in South Westland forest depends on the proximity to edges and aspect.

All in all, it was a great conference - lots of interesting, well presented papers, a lavish book launch, an entertaining photographic excursion through the scenic wonders of North-west Nelson, and excellent field trips. I can't wait until next year's conference - see you all in Christchurch!

Alison Ballance

## STUDENT PRIZE

The prize for best student paper at the 1991 conference was awarded to Mel van Aalst for her paper "What makes privet a successful weed".

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## ECOLOGY BUZZ GROUP WHIRINAKI JULY 5-7 1991

*Ever thought that field ecologists in New Zealand don't get together in a field setting often enough? Then read on!*

At the last conference of the New Zealand Ecological Society, John Ogden and Kath Dickinson discussed the possibility of organising a mid-year get-together for those with field-orientated interests in New Zealand plant ecology/conservation. The idea was to have a smallish group discuss their work and interests in a totally informal manner. In part, we thought there was also some need to meet socially and perhaps generate more interaction between people in different universities and other establishments.

To see how successful such a venture might be, John organised a gathering based at Minginui, adjacent to Whirinaki Forest Park. For this first attempt, numbers were restricted to ten participants: Rachel Ebbett, Mark Horrocks, John Ogden from Auckland University, Keith Thompson from Waikato University, Phillipa Crisp, Kath Dickinson, Euan Nicol, Mike Orchard, Loes Reitsma from Victoria University, and Carol West from DSIR Publishing. Friday evening was spent introducing ourselves and research interests, as well as discussing forest dynamics in general. We also met the local populace who had heard we were 'in town' and came visiting via a novel line in window entry! On Saturday we were shown the study areas of Rachel Ebbett who is working on patch dynamics in the Whirinaki Sanctuary. The Sanctuary position provided an opportunity for a fruitful discussion on altitudinal sequence from superb podocarp forest to red beech stands.

Further informal presentations were given in the evening and collective advice given on some research problems being encountered around the country – not just those related to forest situations. Sunday morning was spent visiting and discussing the dynamics of the Old Forest Road and River Road stands of podocarp forest, as well as the nearby *Dacryphyllum subulatum* dominated frost flats. Unfortunately, time did not permit close examination of the forest-frost flat ecotone.

### Summary and Recommendations

- For the ten participants, the get-together was both enjoyable and productive. The chance to pool

experiences of staff and students from around the country was invaluable.

- We would like to see this gathering continue on a yearly basis, perhaps being rescheduled to early November after University exams.
- We recommend four rather than three days for future gatherings, particularly when long travel times are involved.
- We also see a great opportunity for some collective data gathering exercises which, with experienced people, could result in enormous progress even over just one day of fieldwork.
- Future events could develop into a mini-symposium type of approach with 20–30 people participating.

*If you would like to be involved in future events of this type or have any suggestions to make, please get in touch with either of the following:*

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## FOREST RESEARCH SEMINARS

Forest Research Institute 'Forest and Wildland Ecosystems Division Seminar Series' are held in the seminar room, FRI, Arts Road, University of Canterbury, Ilam at 11.00 am.

Proposed seminars are:

**Nov 28** *Re-examination of the safety of 1080 and the development of alternatives for possum control.* Charles Eason

**Dec 12** *Tussock grassland hydrology – an overview.* Barry Fahey and Frank Kelliher

Seminars are confirmed two weeks prior to the above dates. For further information contact:

Graham Hickling Ph (03) 351 7099 ext. 838  
Chris Phillips Ph (03) 351 7099 ext. 819

# WHAT IS ECOLOGY?

**Ecology is the scientific study of the living environment**

scientific study — study by careful observation, measurement and logical analysis

living environment — living organisms (human, animal, plant, microorganism) plus the supply of resources needed for life (food, water, soil, other animals or plants, a suitable place to grow or live)

**The study of ecology often involves:**

- regular weighing and measuring
- recording data
- tracking animals
- detailed study

**Understanding ecology is essential in:**

- the sustainable use of natural resources
- restoring damaged habitats
- controlling pests and weeds
- having a natural world for all to enjoy and delight in
- protecting endangered species
- awareness of harmful effects

**THE NZ EDUCATIONAL TRUSTEE is an independent charitable trust established to promote research in ecology. Their focus is on research, conservation, management of particular areas and species, education and resource use planning, environmental assessment, pest control, structure, education and advice with an interest in the better environment of New Zealand.**

**The objective of the Society is to promote the study of ecology, to advocate the management of natural resources, to support the development of ecological principles and to encourage growth of informed and responsible attitudes to the natural environment. Membership is open to all who share these concerns.**

For further information contact:  
The Secretary, PO Box 447, Te Anau, New Zealand.

## ARE YOU INVOLVED IN EDUCATION?

### "WHAT IS ECOLOGY?" EDUCATIONAL PACKAGE

Colour poster: (60 x 40 cm)	\$8.00	(includes GST & \$3 p & p); booklets can be included in mailing tube at no extra postage charge)
Colour booklet: (8 pp, A4)	\$4.00	(includes GST)
	\$3.00 ea.	for class/library sets of 10+
	\$2.00	(add for p & p if ordering booklets only)

The booklet is written for students in Forms 6 and 7 to provide a perspective on the practical and career applications of ecology. It also emphasizes the growing need for environmentally well-informed people in a range of different roles.

Available from:  
Nelson Teaching Resource Centre,  
Box 1012, Nelson.

Also available from the Secretary or the Education Convenor. See back page for addresses.

## DIPLOMA IN WILDLIFE MANAGEMENT

The Diploma in Wildlife Management at Otago University is a one year postgraduate course. Initiated in 1964 by the then director, Dr Kaj Westerskov, the Diploma was not offered in the four years following his retirement in 1985.

In 1990 it was decided to 'revamp' the course and Dr Henrik Moller (formerly "Dr Wasp" with the Wasp Ecology Team at Nelson D.S.I.R.) was appointed. The new course aims to meet the demand for people trained in a broad range of wildlife management skills. Greater emphasis is placed on pest control and conservation and less on game management (as in the earlier diploma course).

Graduates seeking specialised training as wildlife research scientists, technicians, policy makers, managers; or those already employed in wildlife/ecological management and interested in further training, are encouraged to apply. The diploma can also be an introduction to gaining an MSc or PhD degree. "On completion of the diploma, a student can proceed straight away with an MSc thesis. This means the student can gain a Diploma in Wildlife Management as well as a MSc in two to two and a half years", says Henrik.

As a major objective of the course is to train graduates with the skills necessary for employment in some aspect of wildlife or ecological management, prospective employer organisations have been involved in course development and teaching. The Department of Conservation, Ministry of Agriculture and Fisheries, Fish and Game Council, and Ministry of Forestry all contributed ideas and guidelines. Representatives from these and other organisations also participate in field trips and seminars. Ideas and comments from any other prospective employers or interested parties are welcome.

The course is an even mix of seminar/lectures and 'hands on experience' work such as handling, marking, observing and censusing wild animals. Students research and write a report, worth 25% of the overall grade, on a wildlife management issue. The report should be "an effective, interesting and informative piece of research for the intended end-users of the information", says Henrik.

If you would like more information about the Diploma in Wildlife Management contact:

Lynda Gray  
Diploma in Wildlife Management enquiries  
Department of Zoology, University of Otago  
P O Box 56, Dunedin  
Fax (03) 479 7584

## STUDENT RESEARCH AT OTAGO

### PhD Zoology - 1991

- **Ian Brown:** Cold tolerance mechanisms of Antarctic Nematodes
- **Gordon Court:** The ecology of non-breeding south polar skuas and a toxicological assessment of the south polar skua at Cape Bird, Ross Islands, Antarctica.
- **Norman Davis:** Larval trematode interactions with molluscan hosts in Lake Wanaka.
- **Stephen Downes:** Behaviour of langurs.
- **Barbara Hayden:** Factors affecting recruitment of farmed green-lipped mussels.
- **Mark James:** Microzooplankton in aquatic ecosystems
- **Iiona Kokay:** Characterization of biogenic amine binding sites in the brain of the honeybee *Apis mellifera*.
- **Daniel McClaryl:** Hybridization in the *Pseudechinus* species complex.
- **Angus McIntosh:** The evolution of predator avoidance behaviour in New Zealand stream invertebrates and the consequences for stream communities.
- **Christopher McMahan:** Seasonal growth patterns in red deer stags.
- **Stuart Parsons:** The immunology of lung worm infections in farmed deer.
- **Adrian Peterson:** Penguins, petrels and parasites: A cladistic analysis of coevolution.
- **Mike Scarsbrook:** Disturbance - spatial refuges in stream communities.

### MSc Zoology 1991

- **Carron Chessum:** Disturbance and population structure of sperm whales off Kaikoura
- **Tamara Edwin:** The effect of hierarchial behaviour and photo-period on production in red deer stag calves (*Cervus elaphus*).
- **Brent Evans:** Instream coarse woody debris and its influence on processes occurring in New Zealand streams.
- **Leeann Fenton:** The biology of the honeybee mite, *Melittiphis alvearius* (Berlese).
- **Bronwyn Hegarty:** Feeding behaviour of freshwater copepods.
- **Lynda Johnston:** The structure and development of antennae in the honeybee *Apis mellifera*.
- **Phil Lester:** *Salix fragilis*, effects on community structure and as a food for aquatic macroinvertebrates.
- **Shirley McQueen:** Reproductive endocrinology of Fiordland crested (*Eudyptes pachyrhynchus*) and

Adelie (*Pygoscelis adeliae*) penguins, in relation to control of foraging trip times during incubation.

- **Sarah Manuel:** The effect of temperature on the growth rate of the juvenile NZ red rock lobster, *Jasus edwardsii*.
- **Shaun Ogilvie:** Filtration in the freshwater mussel *Hydidella menziesi* and its effect upon phytoplankton in shallow lakes.
- **Andrea Robertson:** (Na<sup>+</sup>, K<sup>+</sup>) ATPase in peripheral nerve.
- **Julie Rush:** The function of the excretory system of *Trichostrongylus colubriformis* (Nematoda) infective juveniles.
- **Nick Spencer:** Inter- and intra-specific behavioural strategies in the use of the habitat of sympatric lizard species.
- **Rob Wass:** The effects of grazing by black swans (*Cygnus atratus*) and wave action on macrophytes in two shallow lakes.

#### BSc (Hons)

- **Kerri-Anne Edge:** A comparison of feeding behaviour in the native galaxiid, *G. anomalus*, in the presence and absence of a predatory threat, *Salmo trutta*.
- **Tania King:** A genetic and ecological study of structuring in Galaxiid populations in the Taieri River system.
- **Cathy Shave:** Predator-prey interactions among freshwater crayfish, trout and eels.

### NEW ZEALAND NATURAL HERITAGE FOUNDATION

It is just over three years since the New Zealand Natural Heritage Foundation was launched as a charitable education trust. During that time, the Foundation has contributed to the environmental awareness and education of New Zealanders.

The Foundation's mission is: to produce a curriculum of, and resources for, environmental education from Early Childhood to Secondary schooling level in both English and Maori as well as programmes at Tertiary level; to produce and publish books on the natural heritage of New Zealand; to develop educational tourism resources based on the concept of 'natural heritage trails' of New Zealand; and to use the media in appropriate and entertaining ways – all to raise awareness of the importance of our natural heritage to our spirituality, health, prosperity and life-style.

With the New Zealand Tourism Department as its first major sponsor, the Foundation completed its 'Programme to 1990' and those major themes are now being built upon for future work.

The Foundation's first major project was the television series, "Moa's Ark", co-produced with the Natural History Unit of TVNZ. Having conceived the idea, secured the involvement of David Bellamy, and provided basic programme themes and scripting guidelines, the Foundation also part-funded the programme and retained overall direction of the series development. Popular with New Zealand viewers, the series has begun to sell overseas and the Foundation is now working on the production of school resources based on it.

At school level, the Foundation has had teams of teachers developing educational resources. The first resources written in Maori have been published and the full programme of resources is being published as funding becomes available. The educational team comprises qualified and experienced teachers with a successful record of teaching, as well as qualified educational consultants with experience in teacher-education, curriculum and resource development, headed by Delyse Springett, Executive Director of the Foundation. The schools educational programme has been strongly supported by the former Department, now the Ministry of Education.

The Foundation also helps to set up, and acts as facilitator of hands-on school programmes, operated in schools under the general direction of Delyse Springett, Education Officer John Millard, and Consultant Murray Brown. One such programme, based on the resource written by John Millard, involves tree-planting from seedlings grown and collected by the students, and including parents, trustees and community sponsors, such as Glaxo. Another programme involves whole-school involvement in becoming an 'Eco-School' and putting into practice ecological principles for school management and the education of pupils.

Now the Foundation has become the New Zealand coordinator of an international water-monitoring programme for high school students, linked with the Global Rivers Environmental Education Network. Four New Zealand schools, backed by Regional Councils, are already working in the programme, and others throughout New Zealand will be joining in 1992.

The first Natural Heritage Trail, the "Ice and Fire" geological trail, researched and developed by Ian Mitchell, is currently being marketed overseas and will operate for the first time during the summer season 1991-2. This will be followed by a series of educational trail experiences based on themes such as natural heritage forests and ornithology.

Aspects of Foundation work which have interested scientists are book production in the

series, "Nature of New Zealand", and the linking of scientists with teachers to produce classroom resources. Scientists are enjoying writing books for the general public, visitors, and schools, which are up-to-date and have integrity as scientific writings yet make understandings about current research available to a wider audience and appeal to tomorrow's scientists. The first of these books, "Kiwi - A Secret Life", by Jim Jolly is now being published.

By emphasising community involvement and working with other groups to achieve common ends, the Foundation has developed a strong national and international network for sharing ideas and information.

Two successful conferences were run in 1990, and a major environmental education conference, "Our Common Future - The Way Forward: Environmental Education in New Zealand", was held in Palmerston North, 26-30 August 1991. The conference raised much interest in New Zealand and overseas. Keynote speakers included Dr Roger Blakely; Dr Peter Ellyard from the Commission for the Future in Melbourne; Dr Alan Miller, teacher and writer on eco-ethics; Damian Randle, editor of "Green Teacher" and writer on environmental education; and Professor Bill Stapp, originator of the G.R.E.E.N. water-monitoring programme.

Joint production, with the New Zealand Ecological Society, of a poster on "Sustainability" to be made available to schools is well underway.

The number of people the Foundation works with, and the spectrum they represent, is widening all the time. For further information about the Foundation, contact:

The Executive Director  
New Zealand Natural Heritage Foundation  
Massey University, Palmerston North  
Telephone (06) 356-9099, Fax (06) 356-7286

## ECOLOGICAL RESEARCH IN THE DEPARTMENT OF BOTANY AND ZOOLOGY, MASSEY UNIVERSITY

### PhD students

- **Vaughan Keesing** is studying the invertebrate community on and near European heather (*Callus vulgaris*) in Tongariro National Park, where the heather is a weed of major concern. Since its introduction in 1912 it has spread, replacing large areas of tussock (*Chionochloa rubra*) and native heathland (*Dracophyllum* and other genera). Eradication is not feasible, and other options are limited, so biological control may be the most

appropriate method. Vaughan hopes to identify the local invertebrate fauna and determine the likely impact of a release of the beetle *Lochmaea suturalis* (Coleoptera, Chrysomelidae) on this community.

- **Dale Towers** has been awarded a DOC Scholarship to study competition for food between blue ducks and trout. He aims to measure blue duck densities in areas with and without trout populations and also to experiment with trout removal.

- **Peter van Essen** is nearing completion of his study on the autand synecology of leatherwood (*Olearia colensoi*) scrub.

### MSc students :

- **Julienne Alley** is investigating the social and population dynamics of feral goats.

- **Kerry Sanders** has been spending much of her time in Rarotonga where she is studying the kakerori (flycatcher).

### BSc Hons students :

- **Brigitte Bakker** has a project on hybridization between the indigenous grey duck and the acclimatised Mallard duck.

- **Gary Bramley** is measuring the energetic value and protein contents of the artificial diet fed to blue ducks in captivity and of some samples of stream insects by analysing faecal material.

- **Tania Deadman** is interested in the nocturnal behaviour and food preference of the common bush weta.

- **Nicky Macdonald** is developing a field census method based on the responses of sedentary blue ducks to call playbacks.

- **Toni Withers** is studying the effects of water pollution on the invertebrate fauna of the Mangaone Stream.

### Dip Scl students:

- **Steve Brown** is investigating heather (*Calluna vulgaris*) allelopathy in Tongariro National Park.

- **Richard Stocker** is studying the phytosociology of Westland sub-alpine grasslands.

### Other work :

- **Robin Fordhan** and **Stephen Pilkington**, with **John Ogden** (University of Auckland) are examining the population ecology of Kaikawaka in Tongariro National Park. Robin and **Ed Minot** are investigating the phenology and population structure of German wasps in the Manawatu, and Robin is also interested in the philosophy of resource use.

- **Gillian Rapson** is studying the wire-rush,

*Empodisma minus*, to learn about its life-history and role in ombrotrophic peat domes and more minerotrophic wetlands, especially in conjunction with the giant restiad, *Sporadanthus traversii*. The growth and reproductive success of the local endemic tree daisy of Castle Point, *Brachyglottis compacta*, is also being investigated: data is being gathered on seedling survivorship, floral phenology, and inflorescence predation. Experimental work is nearing completion on the ecological structure of a grass population, supplemented by genetic analysis.

• **Ian Stringer** and **Liz Grant** have commenced a study investigating rearing techniques for two species of flax snail: *Placostylus ambagiosus michiei* and *P. a. paraspiritus*. Ian is also involved in a study with **Steve Pilkington** and **J.D. Green** (Waikato University) on the zooplankton of Lake Namu Namu.

Murray Potter

## NEW ADMINISTRATIVE STRUCTURE AND FUNCTION

The AGM at Nelson passed motions that changed the way the Council of the New Zealand Ecological Society is structured so that the Society may better carry out its objectives.

This restructuring was necessary and sensible for two reasons: first, government departments are no longer willing to subsidise their staff's attendance at Council meetings and the Society can afford to pay only at the expense of other activities; and secondly, past experience has shown that many of the constructive activities of the Society have been done outside the formal Council structure. Our submissions on the West Coast Beech Scheme, population policy, nuclear winter, and ecological sustainability; the on-going work of the Education sub-committee; production of the Journal, Occasional Publications series, and the Newsletter; the organisation of specialised workshops, are examples of Society objectives being fulfilled outside the Council.

Basically, Council is to be a smaller (and cheaper) affair with only the office-bearers (President, Vice-President, Secretary, Treasurer, immediate past-President and four councillors). The Councillors are elected for two years, may stand for a further two years, but must then stand down. It is the function of this body to administer the Society (most Council meetings are taken up with rather mundane matters), to set policies (in conjunction with the AGM), and to promote the objectives of the Society.

The incoming Council consists of John Parkes (President), Morgan Williams (Vice-President), Caroline Mason (Secretary), Graham Nugent

(Treasurer), Judith Roper-Lindsay (Past-President), and Councillors Graham Hickling, Mary McEwan, Murray Potter and Colin O'Donnell.

To promote the objectives of the Society, it is intended to continue with or form new 'working groups' outside the Council. The chair/co-ordinator of these groups will be formally appointed by Council (anyone with a good idea, or who volunteers, is likely to be so appointed), will liaise with one councillor, and may be funded to attend Council meetings as requested. Public statements by working groups must be approved by Council.

Clearly, the Society does not have unlimited funds to support all working groups, but the success of the Education sub-committee in soliciting funds for special projects points the way for the incoming Council.

The working groups will be of two sorts: those with a formal permanent structure to carry out ongoing tasks and those formed temporarily to address a particular issue. The advantage of temporary groupings over such older sub-committees as 'Conservation', is that they are more goal oriented and must meet a deadline.

### Permanent Groups:

*New Zealand Journal of Ecology*: Jill Rapson (Editor)

*Newsletter*: Mary McEwan

*Education Sub-committee*: Mary McIntyre (Convenor)

*Awards*: Graham Hickling

*Membership Directory*: Murray Potter

*Royal Society Members' Body Representative*: Kath Dickinson. This position is in a state of flux as the new Federation of Scientific Societies (FOSTS) evolves.

### Temporary Groups

*1991/92 Conference*: Colin Burrows (Organiser). The conference is at Canterbury University, 24-27 August 1992.

*Sustainability Working Group*: Paul Blaschke (Convenor). It is possible that separate groups will be formed to look at the sustainability of agriculture, fisheries, forestry, etc. For example, the Society commented on a document on agricultural sustainability from MAF (Policy) and the issue is ongoing. The apparent compromises in orange roughy quotas announced by government have all the signs of an impending collapse of this fishery - we are considering commenting on the ecological principles

Members wishing to contribute to these groups should contact the convenor. Members who think the Council should comment on a particular ecological issue should contact the Council.

John Parkes

## Office Holders of the New Zealand Ecological Society 1991/92

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The Newsletter was produced by Kim Pritchard, with the support of DSIR Land Resources. Duncan Cunningham organised the mailing out.

Contributions for the newsletter – news, views, letters, cartoons, etc. – are welcomed. If possible, please send articles for the newsletter on disk – any size, IBM or Macintosh; MS Word or plain ASCII file texts are best but we can also manage Word Perfect. Send your disk and hard copy to:

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**The deadline for the January issue of the newsletter is 20 December 1991.**

*Unless indicated otherwise, the views expressed in this Newsletter are not necessarily those of the New Zealand Ecological Society or its Council.*