NEW ZEALAND ECOLOGICAL SOCIETY

Newsletter

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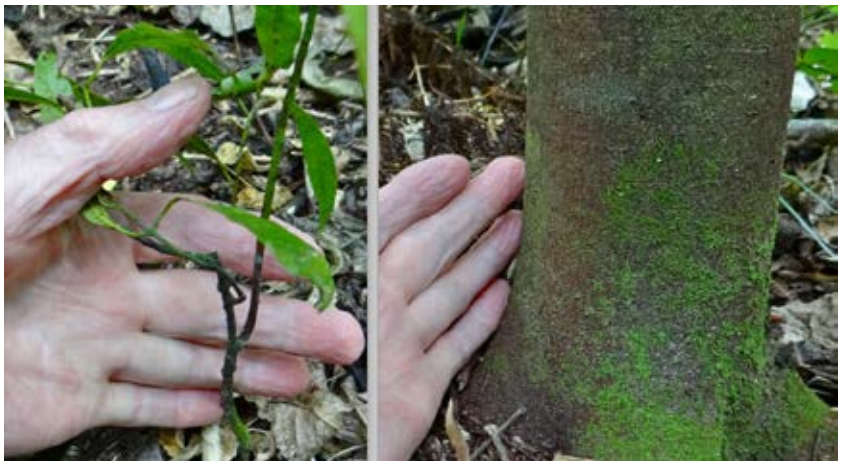
FROM THE EDITOR

It is with great sadness that I note the passing of two giants in the NZ ecological community—Tony Whitaker and Colin Burrows. Both scientists have influenced my own research and also left an enduring legacy for New Zealand ecology and conservation. Tony Whitaker's 1987 paper *The role of lizards in New Zealand plant reproductive strategies* (NZJBot 25) inspired my MSc research on seed dispersal by common geckos. I first met Tony on a field trip to Brothers Island to survey Duvaucel's geckos, and kept in touch with him over the years. He was always happy to hear from me when I contacted him with random lizard-related queries, and Colin Miskelly's obituary captures Tony's role in the herpetological community perfectly: "*there were few lizard species that he had not seen, nor lizard researchers that he had not cheerfully assisted*". Although I never had the privilege of meeting Colin Burrows, his research on seed ecology of New Zealand plants has been an invaluable resource and I and many others will no doubt refer to it for years to come.

This will be my last issue as Editor of the NZES Newsletter, although I will continue as a Councillor. I'm pleased to announce the appointment of Jane Gosden, who will be taking over the role of Newsletter Editor from the next issue. I'd like to thank everyone who has contributed newsletter items over the last 3½ years, and made it such a rewarding experience.

ILLUSTRATE ECOLOGY



SIZE NO INDICATION OF AGE
*Two tawa (*Beilschmiedia tawa*) seedlings, planted 35 years ago in John Flux's garden. Initially, both were about 30 cm high, with 10–15 leaves. The one on the left is now 40 cm high, with 52 leaves; it grows under a closed canopy of mahoe (*Melicytus ramiflorus*). The other is in a light gap, and is now 11 cm dbh, and 10 m tall. A useful lesson in the difficulty of ageing trees by their size! (Photo: John Flux).*

INSIDE:

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Layout and design: Jeremy Rolfe

The deadline for submissions for the next issue of this newsletter is ***Friday 6 June 2014****.*

OBITUARIES

COLIN BURROWS (1931–2014)

By Dave Kelly, University of Canterbury

Colin Burrows, who died recently, was an internationally known plant ecologist and conservationist who spent almost his whole working life at the University of Canterbury (UC) studying South Island systems, and then had a long and productive retirement still working on botanical and conservation issues in Canterbury.

Colin was born in Methven, and did his undergraduate degree at UC before a short spell in secondary school teaching. He then returned to UC to complete an M.Sc. in 1958. On graduating, he was offered a Fulbright Scholarship to Stanford University, but had to decline because his first wife Nancy had become ill. Instead he began work teaching ecology at the University of Canterbury in 1960. This was, he said, a turning point. Had he gone, "I would have been a very different scientist. At that time I was involved in evolutionary biology, but when the position came up at Canterbury I changed my research thrusts, so I turned out to be an ecologist". He remained in that position until his retirement in 1993, having also found the time while lecturing to gain his Ph. D. in 1967 and D. Sc. degrees.

His research focussed in particular on the ecological problems of Canterbury and New Zealand. He worked in alpine grasslands, wetlands, and forests, producing many reports on natural areas suitable for conservation throughout the South Island. He worked extensively on paleoecology, including dating glacial advances through the then-new method of aging lichens, developing an international reputation and his DSc was awarded for his work in this field. Latterly he returned to modern-day ecology with a book on plant succession "Processes of Vegetation Change", though he would not thank me for retaining the term "succession". His book, which was many years in gestation, was well received internationally. He also carried out extensive work on seed germination. His series of papers on the germination ecology of a wide range of New Zealand species is a great resource for anyone working on some of those species, and gave us a clearer view of the overall trends in the local flora.

He also made major contributions to the Arthurs Pass National Park Board, and the Canterbury Museum Trust Board, as well as being on the UC University Council for many years. Plus he was a tireless writer of letters to The Press, on a wide range of subjects informed by his scientific and humanist approach.

In "retirement" he scarcely slowed down, continuing to produce numerous journal articles, and another book. Published in 2005, "Julius von Haast in the Southern Alps" described von Haast's travels and how those assisted geological and biological exploration of the South Island. Colin also put great energy into the ecological restoration of Quail Island in Lyttelton harbour, helping set up the Quail Island Restoration Trust and working hard at replanting projects on the island.

He received a string of awards for his work. In 1963 Colin received the Hamilton Memorial Prize of The Royal Society of New Zealand for his work in evolutionary studies and systematics, showing that if he had gone into evolutionary studies he would have made his mark there too. He was made a Fellow of the Linnean Society of London, joining only 21 other New Zealanders. He became in 1991 the second recipient of the New Zealand Ecological Society Award (now called Te Tohu Taiao) for excellence in the study of ecology, and in 2010 he was given New Zealand's premier conservation award, the Loder Cup, for his contributions to the restoration of Quail Island.

Colin's contributions to ecology and conservation in Canterbury and New Zealand are an enduring legacy. I am pleased to record my own debt to him, having joined Canterbury as a new lecturer in 1985 and having been "shown the ropes" as we worked together till his retirement in 1993. His extensive field knowledge and commitment to teaching were great assets, for which he will long be remembered. He was a relaxed, energetic and supremely informed colleague to have along on an undergraduate field trip to Cass, but was always concerned when the trip clashed with the opening of the duck-shooting season, another of his interests!

Colin James Burrows, 19 April 1931 – 16 January 2014. Survived by second wife Vivienne, son Adam and daughter Julia and two grandchildren.

Colin Burrows teaching a 2nd year ecology class about buried soils and past evidence of fires at Cass, May 1987 (Photo: Dave Kelly).

ANTHONY HUME WHITAKER, MNZM (1944–2014) – A TRIBUTE

By Colin Miskelly, Te Papa

Tony Whitaker (or 'Whit' to his many friends) was the godfather of modern herpetology in New Zealand. Following more than half a century of fieldwork to the remotest corners of New Zealand, there were few lizard species that he had not seen, nor lizard researchers that he had not cheerfully assisted.

Tony's passion for, and knowledge of, cold-blooded beasts were legend. But it was the warmth of his compassion for his wide network of contacts that resulted in him being both loved and respected by so many in the conservation community.

I first met Tony during a Department of Conservation survey for goldstripe geckos (*Woodworthia chrysosireticus*) on Mana Island in 1993, and was privileged to participate in several lizard surveys with him over the following 15 years. Our lizardly correspondence by phone and email grew over time, and became even more frequent after I joined the Te Papa team, with curatorial responsibilities that included reptiles and amphibians. Tony was always generous with his time and knowledge, and my own interest in and enthusiasm for New Zealand's herpetofauna continued to grow as a result.

Tony Whitaker (centre) with Department of Conservation staff Ian Cooksley and Mark Townsend during a 'pre-rat-eradication' lizard survey on Kapiti Island, May 1995 (Photo: Colin Miskelly).

Te Papa, as an institution, is also greatly indebted to Tony. He contributed far more New Zealand lizard and frog specimens to the national collection than any other individual (1674 specimens – the next largest contribution is 576). Most of these specimens were donated to Te Papa (then the National Museum of New Zealand) when Tony resigned from Ecology Division, DSIR in 1977.

Many of the Ecology Division specimens collected by Tony came from dozens of islands off northern New Zealand during a 5-year period (1968-73) when he was periodically seconded to the Wildlife Service to assist with island surveys. Tony made many new discoveries during this time, including the skink that bears his name, discovered on Middle Island, in the Mercury Islands, in June 1970. During the same 3-day visit, Tony also discovered the Mercury Island tusked weta (*Motuweta isolata*). In his last phone call to me he expressed his delight at hearing how tusked weta were thriving following their introduction to Ohinau Island.

Whitaker's skink (Oligosoma whitakeri), Pukerua Bay, January 1996. Tony Whitaker discovered this species on two islands off Whitianga, and it was subsequently found to occur also at Pukerua Bay north of Wellington (and nowhere else). It was named in honour of Tony by Graham Hardy in 1977 (Photo: Colin Miskelly).

Although Tony named only one lizard species himself (the black-eyed gecko, now *Mokopirirakau kahutarae*), eight other New Zealand lizard species were named by other scientists based on specimens that he collected. Using their current names, Tony collected the holotypes of *Oligosoma whitakeri*, *O. chloronoton*, *O. stenotis*, *O. longipes*, *O. townsi*, *M. kahutarae* and *Leiolopisma pachysomaticum* (the latter is now synonymised with *O. oliveri*). He also collected paratypes for *O. hardyi* and *O. toka*. There is little doubt that many more 'Whitaker' specimens will be selected as type specimens during the revision of New Zealand gecko taxonomy that is underway.

Tony was appointed a Member of the New Zealand Order of Merit (MNZM) in 2010, for services to herpetology. At the time, he commented that one of his biggest achievements had been to recognise the threat that rodents posed to New Zealand reptiles. This referred to his 1973 paper "Lizard populations on islands with and without Polynesian rats, *Rattus exulans* (Peale)", published in the *Proceedings of the New Zealand Ecological Society* (Vol. 20: 121-130). Tony's hypothesis that Pacific rats (kiore) were major predators of lizards has since been corroborated by numerous island pest eradication operations followed by successful translocations of at least 12 lizard species to sites cleared of Pacific rats.

In addition to the many scientifically invaluable specimens collected by Tony, the Te Papa collection also includes specimens that were more personal to him. The earliest were single specimens of common skink (*Oligosoma polychroma*) and Wellington forest gecko (*Mokopirirakau silvestris*), collected near his home in Pinehaven, Upper Hutt in 1955, when Tony was just 11 years old. But the specimens with the best back-story were not collected by Tony himself…

Tony was a foundation member of the Society for Research on Amphibians and Reptiles in New Zealand (SRARNZ), and a long-time editor of *SRARNZ Notes*. He was invited to give a plenary lecture on 'Reminiscences of 50 years in New Zealand herpetology' to the 14th biennial SRARNZ conference at Tautuku, Catlins in February 2011. Tony contacted me a few days before, and asked whether Te Papa still held some Nelson green geckos (*Naultinus stellatus*) collected by Ray Clarke at Tophouse *circa* 1950. Indeed we did, but it wasn't until I heard his talk that I learnt their significance. Tony described to the audience how, during a family holiday to the Marlborough Sounds at the age of 12, he convinced his mother to let him hitch-hike to St Arnaud by himself in search of Nelson green geckos. He managed to get to St Arnaud, but failed to find any geckos. However, when the publican at Tophouse (Ray Clarke) learnt of his interest, he gave the young Whit a jar containing five long-dead geckos pickled in vodka! (They have since been transferred to 70% ethanol.)

Tony was, of course, deeply proud of Viv, their children Kim and Mike, and their grandchildren. I was delighted to receive his call last year describing how he and "the F2s" (his term for his second generation of descendants = grandchildren, for any non-geneticists reading this) had seen some royal spoonbills on Motueka Estuary, and had looked them up on the newly-launched New Zealand Birds Online website. That phone call encapsulated Tony – passionate about wild things, but even more so about sharing his enthusiasm and good humour with family and friends. He will be greatly missed by many.

[Tony suffered a heart attack while mountain-biking at his home at Orinoco, inland from Motueka, on 20 Feb 2014, and could not be revived. He was the dearly loved husband, father, father-in-law and grandfather of Viv, Kim, Mike, Darren, Megan, Sam, Maddie, Ollie and Hannah.]

For further images and links, see http://blog.tepapa.govt.nz/2014/02/28/anthony-hume-whitaker-mnzm-1944-2014-a-tribute/

NZES CONFERENCE 2014

Plans are well underway for the 2014 annual conference of the New Zealand Ecological Society. It will be held at the Turitea campus of Massey University, in Palmerston North, from Sunday 16 – Thursday 20 November 2014. We look forward to seeing you all at this hub of kiwi ecology.

Invited speakers include

- Ragan Callaway—exotic dominance over adaptation
- Phillip Cassey—anthropogenic changes in biodiversity
- Rachel Gallagher—vegetation responses to global change
- James Russell—island conservation and pest control
- Ken Thompson—weeds, seeds, pests and traits
- Janet Wilmshurst—palynology: Te Tohu Taiao speaker.

The programme, loosely, is

- Sunday 16 November—student session all day; registration for all participants.
- Monday 17—registration; plenaries and symposia all day, concluding with a poster session; evening council meeting.
- Tuesday 18—plenaries and symposia, AGM, concluding with the conference dinner.
- Wednesday 19—plenaries and symposia, concluding at 4.30pm.
- Thursday 20—Day-long field trips. Themes planned include: Biocontrol successes on the Volcanic Plateau, Estuarine and coastal ecology, Electrofishing and stream biodiversity, Restoration planting developments and successes.
- Friday 21 – Sunday 23—Writers' retreat. Ken Thompson, one of the 4 editors of the British Ecological Society's journal *Functional Ecology* (which has a citation impact of 4.8) will share his experiences in science editing.

Accommodation

Accommodation will be available on campus, as well as in the many motels and hotels in town. The campus is a 10 minute bus ride or a 20 minute walk from the Square, the centre of Palmerston North. The airport is conveniently on the outskirts of town, and is well supplied with flights and facilities.

Costs

Costs are likely to be in the order of $550 for funded, and $220 for student, participants who book early, and will include lunches on campus on all days, and the conference dinner.

The theme for 2014 is

"Is NZ the world's invasion hotspot?" This topic is designed to encourage understanding of the science of invasion, especially in the context of New Zealand's apparent relative vulnerability, which can then be applied to improving management of invading species, both plants and animals. Being concerned about the state of our planet, we will be attempting to run this conference as sustainably as possible, and attendees will be asked to assist.

Symposia proposed include

- Urban invasions
- Control of invasives
- Habitat fragmentation and depredation
- Migratory invaders
- Hybridisation: invasion, assimilation, adaptation.

Other ideas are solicited, and if you have a topic you wish to develop, then please get in touch with Jill, or submit your ideas via the website. One session recently suggested concerns the Biological Heritage National Science Challenge, and we look forward to topical symposia.

Our preliminary website is up and running at www.nzes2014.org, and details will be added later. Please bookmark this, and add your name to our mailing list.

Contacts: Jill Rapson, Phil Battley and Paul Barrett

Email: G.Rapson@massey.ac.nz

ARTICLES

CAN NATIVE TREES GROW THROUGH SCOTCH BROOM IN DRY ENVIRONMENTS?

Larry Burrows[1], Nick Head[2], Anita Spencer[2] and Debra Wotton[3]

[1] Landcare Research
[2] Department of Conservation
[3] Moa's Ark Research

Nitrogen-fixing plants such as gorse (*Ulex europeaus*) have been advocated as 'nurse-crops' to aid indigenous vegetation restoration, especially in moist environments. Very little work has focused on scotch broom (*Cytisus scoparius*) as a nurse crop in dry locations, but re-measurement of a Department of Conservation (DOC) trial indicates broom can provide significant benefits.

In 2000 DOC developed a restoration management plan for the Balmoral Fire Lookout Conservation Area, Amuri Basin, North Canterbury (42 52.469S, 172 46.593E). The site is arid or semi-arid – NW facing, and with rainfall of ~600 mm/year. It is hot and dry in the summer and cold and dry in the winter. Botanists would classify the site as a cold dry broadleaf-podocarp forest biome. The area has had a long history of human disturbance including burning, grazing (ceased in 1987) and weed invasion. When the management plan was drawn up broom was already common and spreading on the lower slopes, as can be seen in aerial images from 2003.

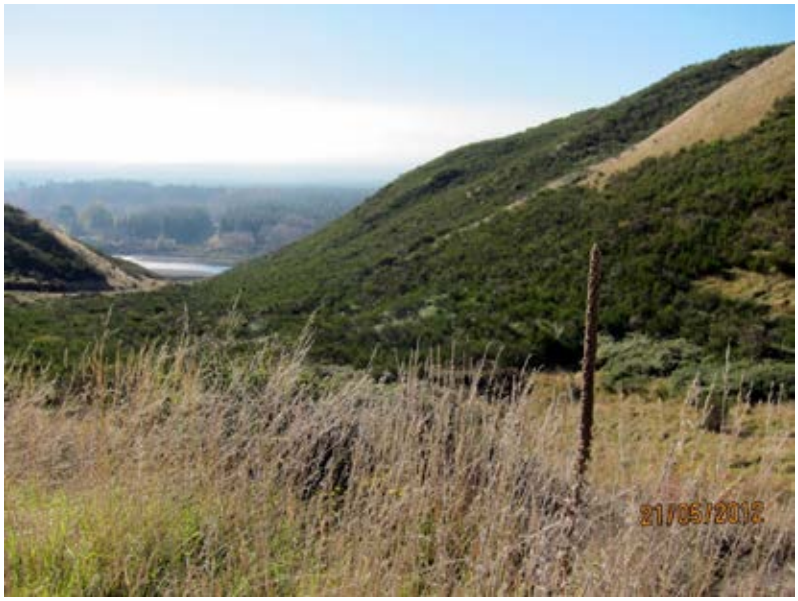


Fig 1. Scotch broom stands at Balmoral Fire Lookout Conservation Area, Amuri Basin, North Canterbury.

Weed control was planned where broom was still scattered or sparse. In those open areas, characteristic dryland shrub species (e.g. shrubby pohuehue (*Muehlenbeckia astonii), Coprosma intertexta,* prostrate kōwhai (*Sophora prostrata)*) would be established and natural values would be enhanced. However, where broom was already abundant and cover continuous, the costs of weed control were thought to exceed the benefits. Instead it was proposed to 'kick-start' woody restoration while simultaneously controlling broom through re-colonisation by native tree species that would, over time, overtop and smother it, and a trial was instigated to find out whether this was realistic.

The trial

Seeds or cuttings for planting into the broom were sourced from a limited range of native tree and shrub species present in the Conservation Area, and from the closest known sources beyond, which were grown on in root-trainers for 1–2 years at the DOC nursery. Species included kōwhai (*Sophora microphylla*), kānuka (*Kunzea ericoides*), karamū (*Coprosma robusta*), kōhūhū (black matipo, *Pittosporum tenuifolium*) and lancewood (*Pseudopanax crassifolium*)—although kānuka, karamū and kōhūhū were the most abundant.

Five areas of ~0.2 ha within blocks of broom of various ages were selected for trial plantings, and fenced to exclude rabbits, hares and stray domestic stock (Fig. 2). In some blocks, the broom was young (~1–3 years old), waist-high and still somewhat grassy underneath at the time of planting, while in other blocks the broom was already head-high and provided an almost continuous canopy with a ground-cover of broom litter (~4–7 years old). A small handful of remnant kānuka and cabbage trees (*Cordyline australis*) up to 6 m tall remained in the vicinity so we know trees will overtop broom.

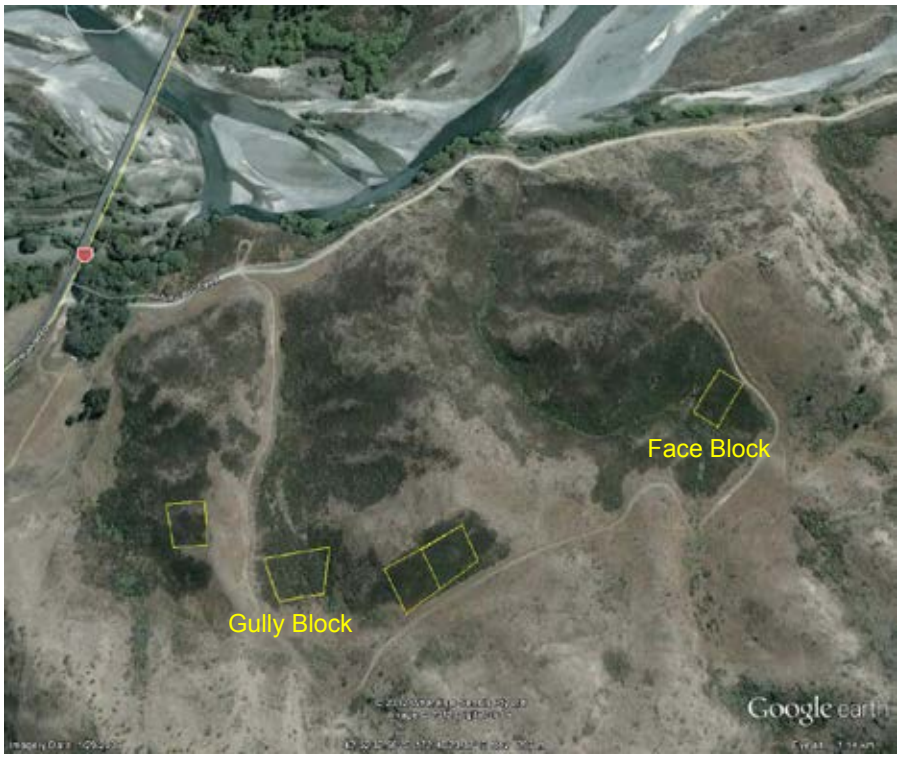


Fig. 2. Fenced plots each ~0.2 ha in dense broom at Balmoral Lookout, Amuri Basin. Planted native trees were measured in Face Block and Gully Block.

In spring 2001 and 2002, Nick, Geoff Speirs and others planted the tree and shrub seedlings. Plants were distributed throughout the blocks spaced approximately 2.5–3 m apart (equivalent to 1100–1600 stems/ha). There was no weed control or watering at any stage.

In January 2003, Anita and Nick ran three transects through two of the blocks (Face Block and Gully Block, Fig. 2) and the height and health was recorded for each surviving seedling encountered—these individuals were permanently marked. About 25 seedlings were assessed on each transect (~75 per block). In June 2006, Anita and others re-assessed some transects for plant mortality and condition. In May 2012, Nick, Anita, Debra and Larry relocated all the transects and marked plants and measured them again.

Trial results

Despite the very harsh conditions at the site and despite seedlings getting no help to aid establishment or survival, they have done remarkably well (Table 1). More than 30% of all trees planted have survived in Face Block, and >70% in Gully Block, although some individual species have done much better. Surviving seedlings that were 20 or 30 cm tall when planted, by 2012 were >2.5 m tall in both blocks and beginning to overtop the broom. Some were seeding (Fig. 3) and self-sown seedlings were beginning to appear under the broom.

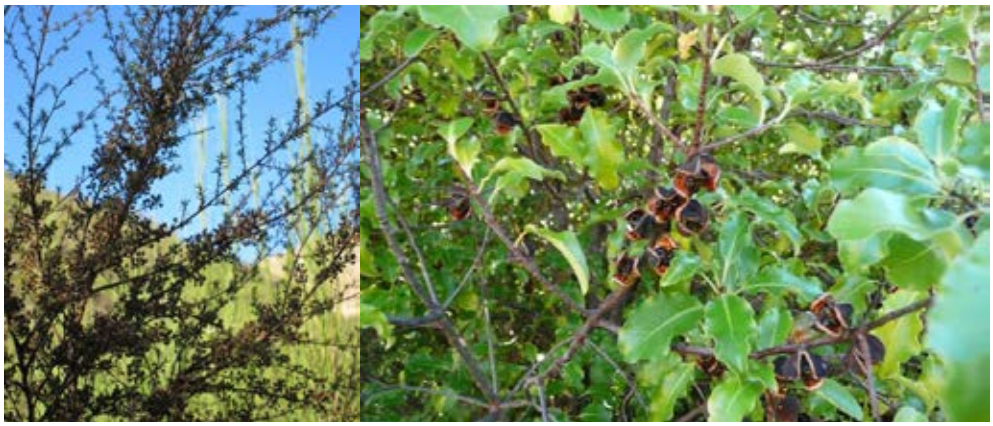


Fig. 3. Planted trees are beginning to overtop the broom canopy and are flowering and setting seed. Kānuka on left, kōhūhū on right

Some species did better in one block than the other. In the drier Face Block 91% of kānuka survived while 52% of kōhūhū survived. That contrasted with the Gully Block where 72% of kānuka and 96% of kōhūhū survived. Karamū was the other species planted in useful numbers and 13% of them survived in the Face Block, while 86% survived in the Gully Block.

We are not quite sure why there were such clear differences between the Blocks, with kānuka surviving better and growing faster at the Face Block, while the opposite was true for kōhūhū and karamū. It may be explained by preferred habitat of the species and differences in soil depth and possibly soil moisture between the Blocks. There were also differences in broom stand structure at the time of planting but we don't know how much that has affected results. At the time of planting the age of broom in the Face Block was younger and about 1 m tall. In the Gully Block the broom was about 2 m tall.

Age and size of broom stands

Mean stand height and age of broom was different between Face Block and Gully Block. We cut discs from the bases of 10 well-grown individual canopy broom bushes from beside each Block in 2012 to ascertain mean stand age. Mean canopy broom in the Face Block was ca. 2.5 m tall and 11.4 (SD 1.5) years of age. Broom in the Gully Block was ca. 3.5 m tall and 17.3 (SD 2.9) years of age. These ring-counts indicate that Face block broom was ~1–3 years old at planting and Gully block was ~4–7 years old. Mean broom ring-widths in the Gully Block and Face Block were 2.4 mm and 2.0 mm respectively, although there was no statistically significant difference between them suggesting they have grown at about the same rate in the two blocks.

Height and growth

Mean annual height growth rate of plants are given in Table 1. Kānuka grew equally fast in both Blocks while kōhūhū and all species on average grew fastest in the Gully Block. Mean height of kānuka in the Face Block by 2012 was 2.1 m, while it was 1.4 m in the Gully Block. Mean heights for kōhūhū were 1.7 m and 1.9 m respectively.

Table 1. Survival of plants marked in Jan 2003 and remeasured in May 2012, and mean annual height growth of plants in the Face and Gully Blocks.

	Face Block		Gully Block	
	Survival (%)	Height growth (cm yr^{-1} ± 1 SD)	Survival (%)	Height growth (cm yr^{-1} ± 1 SD)
Kānuka	91	13.3 ± 5.6	72	13.1 ± 6.1
Kōhūhū	52	12.2 ± 5.7	96	17.3 ± 6.6
All species	33	12.9 ± 5.4	75	15.6 ± 6.2

Reproductive state of the planted trees and new seedlings

Many kānuka >2 m tall and with their top branches in full sunlight have flowered and set seed (Fig 3.). No new kānuka seedlings were observed but kōhūhū seedlings were noted under broom in one of the fenced blocks. Seedlings of *Coprosma propinqua* were observed within the broom, although this bird-dispersed species was not planted.

Spectacular survival in a dry environment was facilitated by broom

Considering the harsh, semi-arid local environment, the survival and growth of planted trees and shrubs in the scotch broom stands at Balmoral Lookout has been spectacularly successful. Although the trial didn't include seedlings planted into the grass sward outside the broom as a comparison, it appears that broom had facilitated survival of planted seedlings, acting as a 'nurse crop'. It is possible that a number of mechanisms are involved. For example, the cover of broom reduced grass competition, provided shelter (reduced sunlight and heat, increased humidity, reduced

evapo-transpiration), altered soil conditions (cooler in summer, warmer in winter, possibly wetter in both), as well as probably adding nitrogen (from decomposing broom litter or roots) and providing some protection from herbivores. Such facilitation by nitrogen-fixing nurse shrubs that outweighs competition and climate has been described overseas from arid lands.

In sum, the trial results suggest broom can facilitate native tree establishment and growth, even in a dry environment such as the Balmoral Lookout. Furthermore, if reversion to native trees is the goal, an implication of the trial is that planting seedlings directly into scotch broom may be more successful and cost-effective than attempting to remove the broom first and planting later. Spraying, burning or mowing are techniques commonly used to attempt to control broom, and most have limited effectiveness due to the huge broom seed-bank. Attempted control also removes any natural regeneration of desirable species and costs a considerable amount of money. The most common outcome is an initial flush of exotic grasses which compete with native plantings, and, eventually, reversion to broom. The Balmoral Lookout trial hints that dollars spent on weed control could be better spent on direct planting.

For more information, contact Larry Burrows (burrowsl@landcareresearch.co.nz).

A NEW ZEALAND ECOLOGICAL SOCIETY STUDENT SECTION?

Andrew Veale

After the wonderful success of last year's EcoTas13 conference in Auckland, I have been thinking about how to continue the networking and collaboration these events lead to. One potential avenue would be a more permanent student section for the NZES, with associated management structure and membership.

Why bother with such a group?

Because being in contact with the other ecology students in the country would significantly benefit all of us.

Knowing what research is being undertaken

Whenever I have attended NZES conferences, I've seen students meet up and find 'wow, you've been doing something complimentary (or identical) to my research; I wish I had known about 6 months ago…". It is such a small country with a tiny group of people working in ecology, but still communications between universities as to what we're doing can be pretty poor. Just knowing what everyone else is doing would decrease wasted effort in duplicating studies, and enable collaboration where we add to each other's research.

Assisting in sampling

I have personally flown and driven around the country racking up carbon miles on samples that anyone could get. For some of my sampling I have just called up local schools in inaccessible areas and asked them to do it – but having actually trained ecologists doing it would be even better. We should have a database/facebook page of current students, with a field-work planned/desired schedule. If someone is heading into the middle of Kahurangi National Park to do some sampling, others may want to join the trip— leading to efficiencies for both parties. Similarly, it may be possible to get others to just do the sampling for you in some cases—if I need some chitons from Otago, it would be much cheaper to ask some marine students from Otago to get them for me, than for me to fly from Auckland to get them myself.

Sharing skills

Many of us have specialist skills, but too often we take these with us when we finish. It would be great to have a place where we can list our skills so that we can contact each other when we need to learn something new. Something that would also be useful is to write down how-to or best-practice guides for many of these skills so that we can learn from each other's mistakes—which brings me to…

Publishing a journal

Lastly, I feel that there is space in the local publishing realm for a peer-reviewed journal run by post-grad ecologists – possibly hosted on the NZES website. This would give students a chance at being involved in scientific publishing, and would enable the publishing of useful material that might otherwise never see the light of day. The New Zealand Journals of Ecology, Zoology, Botany etc. are high quality international journals, and to be published in them you have to be of relatively high quality research. There are times however when small studies, field-trip reports, observations etc. are useful to have published and accessible, but these too often sit in the grey literature – or just disappear.

New Zealand Universities have a history of publishing student-led ecological journals, with the University of Auckland Field Club publishing Tane, and Victoria University publishing Tuatara.
http://www.thebookshelf.auckland.ac.nz/document.php?wid=69&action=null
http://nzetc.victoria.ac.nz/tm/scholarly/tei-corpus-tuatara.html

These journals are wonderful resources for local flora and fauna, and I strongly encourage anyone doing research in New Zealand in ecology to browse through them. Many of the articles are pretty humbling in terms of the quality and knowledge displayed, and looking at the authors is like a who's who of senior ecologists in New Zealand. Sadly both journals were discontinued around the time that the government decided that investing in the future by having free education for students would decrease the amount baby-boomers could sink into houses, and semesters became shorter with more frequent examinations.

The sole remaining journal of this kind is produced by Canterbury University—New Zealand Natural Sciences (http://www.nznaturalsciences.org.nz) which is also a great example. If there is interest in publishing a journal for a postgraduate student group we can discuss potential collaborations with this journal.

I think Tane and Tuatara would serve as great models for a new (probably online only) journal, published and peer reviewed by postgrad students. This could include field trip notes, small studies, guides on techniques and more social things.

Social events

Ecologists generally like to get out in nature and have a good time. Both during conference season and just generally, an ecological society student group could organize social events where we all go out and be awesome. This could include events like those run by the University of Auckland field club historically, where people meet up to go and do self-directed studies in cool places. Check out the field club trip to Rakitu Island (volume 28 in Tane) for an example of such awesome trips.
http://www.thebookshelf.auckland.ac.nz/document.php?wid=69&action=null

Summary of NZES student section

Ideally we want to:

- Have an up-to-date list of all ecology students in NZ.
- Have a forum for collaborating on field-work.
- Share skills across universities.
- Organize social events (during conference week and throughout the year).
- Publish a journal of our exploits.

Where to from here?

Ok, so now I've got you all thinking this is the greatest idea ever, what you need to do is contact me Andrew Veale (Andrew.j.veale@gmail.com) to say that you're potentially interested in organizing it. If people are keen, we need a president, vice president, treasurer, secretary, journal editor(s), and I would say at least two people from each institute (Auckland, AUT, Massey, Unitec, Waikato, Victoria, Canterbury, Lincoln, Otago & others I'm sure). There needs to be an AGM, and from this, some form of legacy structure put in place so that it does not rely on one person who, when they graduate, causes the whole thing to collapse.

While I have thought that this is a brilliant idea for some time—I wasn't capable of organizing this while I was a student, and now I'm off to Canada to play with salmon. Therefore while I'm hoping to get the ball rolling, I won't be in charge, and I merely want to facilitate the group's creation and establishment.

Don't forget to be awesome.

CONFERENCE REPORT

ECOTAS13: A STUDENT PERSPECTIVE

Every year the NZ Ecological Society helps fund postgraduate student presenters (Travel Awards) and promising undergraduate students (Kauri Seed Scholars) to attend the annual conference. Below is a selection of the 2013 award recipients impressions of the EcoTas13 conference. Thanks to Olivia Burge for coordinating the contributions.

Travel fund recipients

I really enjoyed the Barbara Rice Memorial Poster session; especially the reward points put an interactive twist to it. I would have never imagined that so many people are interested in my research ;-) People were queuing, eager to speak to the presenters - or was it just to get a free drink... ?

Thanks to NZES for letting me being part of it!

Constanze Keye, University of Canterbury

My favourite talk was "Swimming capabilities of stoats and the threat to inshore sanctuaries" by C. King with amazing videos of stoats in water treadmills with their little webbed paws going nineteen to the dozen. Cute but concerning. I felt very privileged to be one of the lucky few to visit Little Barrier Island, the most intact ecosystem in New Zealand.

Tarryn Wyman, University of Canterbury

I was fortunate enough to receive a Student Travel Grant for the New Zealand Ecological Society to attend 2013's EcoTas conference (my first conference ever!), where I gave a poster presentation outlining my MSc thesis work on conservation of tropical montane trees in Nigeria. The poster session was an excellent way to mingle with other students and academics and I received some great comments and feedback on my work. The talks that I enjoyed the most were those given by the keynote speakers Ian Jamieson and Chris Thomas. Both were very provocative and challenged the way we view and handle problems relevant to conservation. It was also great to see research carried out by our neighbours across the ditch in Australia. All in all, the EcoTas conference was a very memorable, thought provoking, and educational experience. I'd like to pass my sincere gratitude to the New Zealand Ecological Society for providing me the travel grant that helped me get to Auckland.

Josh Thia, University of Canterbury

Kauri seed scholars

Thank you for the opportunity to attend Ecotas13, it was fantastic experience and served as a real eye-opener to a variety of topics that I had some experience of and those that I had not yet been exposed to. Attending the presentations made me realise how much there is to learn, and that the learning never stops! I would recommend attending the conference to all undergraduate students, though trying to keep up with understanding new concepts can be overwhelming at times, seeing the many different approaches to presenting many hours of research in a short time period is very valuable.

Naomi Keen (Bay of Plenty Polytechnic)

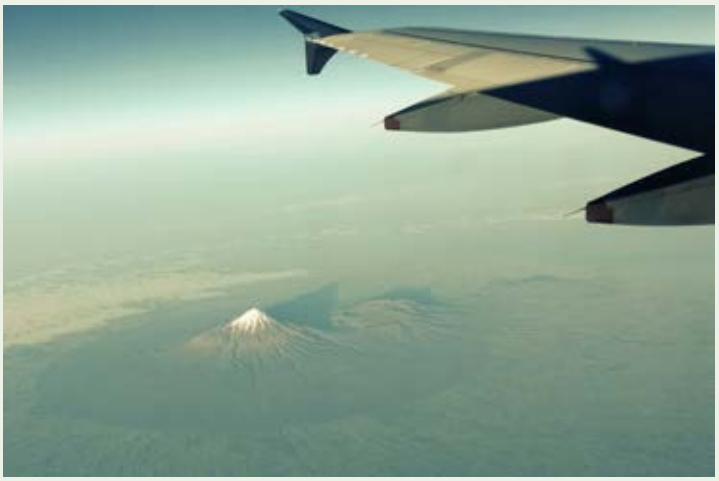
Conference highlight: Getting to see what career ecology and research is all about. Also meeting new people and getting valuable experience.

Student day: Slightly daunting, but really good meeting other like-minded students. The workshops related to science writing and presenting your own research were really beneficial (I've been able to apply the 'victory stance' in a presentation!).

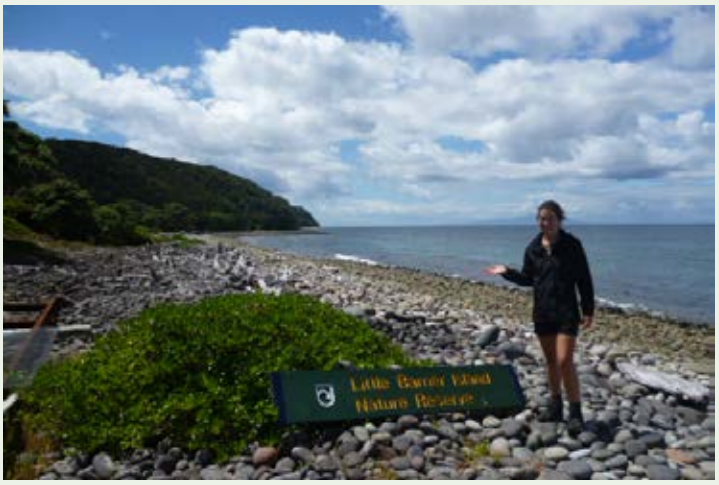
Jonathan Ridden (Lincoln University)

The highlight of the conference was the chance to mingle and meet all the researchers face to face, the chance to meet the writers

The EcoTas13 conference offered a spectacular range of fieldtrips, including excursions to Little Barrier Island, Rangitoto Island, and a weekend trip to several sites of ecological interest in the Waikato.

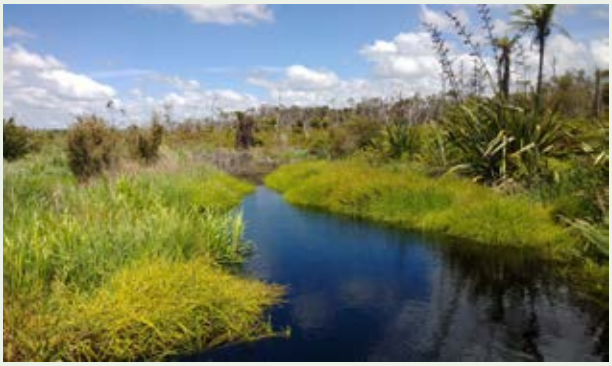


Flying up: views of Mt Taranaki, enroute to EcoTas13 (Photo: Olivia Burge).



Tarry Wyman on EcoTas13 fieldtrip to Little Barrier Island.

EcoTas13 fieldtrip participants standing on lava on Rangitoto Island (Photo: Ayla Wiles).

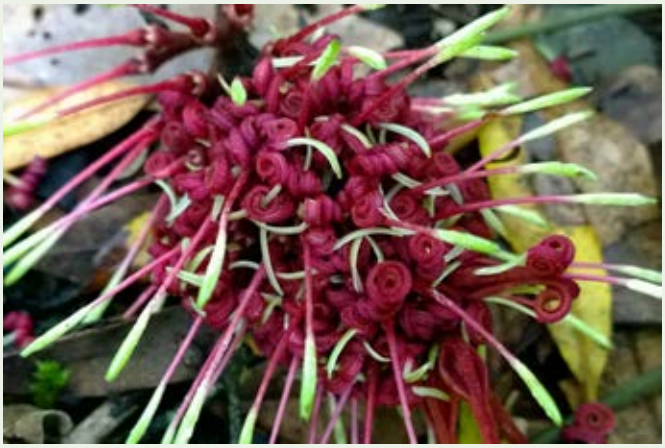


Entrance to Kopuatai Peat Bog, Waikato (Photo: Olivia Burge).

of articles I use all the time for references is akin to meeting your favourite author. The whole thing was a great experience, it opened my mind to all the ecological knowledge, techniques and challenges that are out there and inspired me to learn as much as possible. I had two favourite talks, the first was 'Grazing changes behaviour of grassland lizards' by Michael Bull, I liked it because it was about a lizard (my area of passion) once thought to be extinct being rediscovered and the impact of modern day farming on its habitat. The positives and negatives were fascinating and it left me wanting to know more. The second was the talk by Kathryn Hand "Finding nature in the city: biodiversity and children's habitat-use in the urban environment". What I loved about her talk was how it highlighted children's disconnect with nature and how the different socio-economic areas had different results. Children are after all the future of the human race, and the future of conservation. I didn't give a talk and couldn't make it to student day unfortunately but I did go on the field trip to Rangitoto Island and found it really interesting (photos attached). I found myself amongst a lot of the Australian delegates and I felt this put me on an even footing as I could share my New Zealand knowledge with them and speak with experience. At the rest of the conference I felt under experienced and out of my league, but out in the field I was a lot more comfortable and could keep up intellectually with the best of them. The combining of Australia and New Zealand for such a conference is an awesome idea, it provides each side with different perspectives and ideas. Giving students such as myself a chance to attend is a really great way to inspire the next wave of researchers, I already knew I wanted to head in that direction but the conference just cemented it and helped me to decide which area to specialise in. I am forever grateful to the NZ Ecological Society for giving me the opportunity to attend and would highly recommend it to any budding researchers.

Ayla Wiles, NorthTec, Whangarei

Nikau palm at Maungatautari mainland island, Waikato (Photo: Olivia Burge).



Caption: One of many rewarewa at Maungatautari (Photo: Olivia Burge).

ECOTONES

Bruce Burns

A selection of recently published (since Nov. 2013) research on or relevant to New Zealand ecology (except that published in the New Zealand Journal of Ecology).

What will be the consequences of sea level rise for island biodiversity?

Sea level rise is one of the more certain consequences of global climate change, with current estimates suggesting a rise of 0.5–2.3 m by the end of this century, and up to 6m after that. This sea level rise will have particularly serious effects on islands, reducing habitat and completely submerging some. Islands are also sites of high endemism and therefore globally important for biodiversity, with an estimated 20% of all species occurring on islands. Bellard *et al.* (2014) have analysed the impact of future sea level rise on 4447 islands considered highly important for biodiversity, including New Zealand. They found that from 6 to 19% of the islands considered could be entirely submerged following an increase in sea level by 1 to 6 m, respectively. In addition, more than 10% of all islands will lose at least 50% of their area in the future. The resulting loss of biodiversity is expected to be significant, with the potential for loss of dozens of endemic species within these islands under the most conservative estimates. Compared to other island groups such as the Caribbean Islands which will be heavily affected, however, New Zealand islands were predicted to be much less susceptible. Nevertheless, this study highlights the need to prioritise those islands or areas that are susceptible for conservation action.

Bellard C, Leclerc C, Courchamp F 2014. Impact of sea level rise on the 10 insular biodiversity hotspots. Global Ecology and Biogeography 23: 203–212.

Ghosts in the bush: moa bones found on forest floor

Although there are several records of moa bones found exposed on the ground surface in the 19th century, finding such bones in modern times seems highly unlikely. Nevertheless, two leg bones of a North Island giant moa have recently been found at Aorangi Awarua in the western Ruahine Range lying on the forest floor. Wood and Wilmshurst (2013) report the discovery of these bones and provide radio-carbon dates which suggest the animal died sometime between 1286 and 1390 AD. This puts its death within the first century of initial human settlement of New Zealand, and indicates that under some conditions, such remains can persist for very long periods in exposed locations. Although this is undoubtedly a rare find, it suggests that other evidence of our recently extinct fauna may still occur in our landscapes waiting for similar discovery, and providing tangible links to past ecosystems.

Wood JR, Wilmshurst JM 2013. Age of North Island giant moa (*Dinornis novaezealandiae*) bones found on the forest floor in the Ruahine Range. Journal of the Royal Society of New Zealand 43: 250–255.

History of non-target impacts of weed biocontrol agents explored

Releasing biological agents to control invasive weeds is now a well-established technique in the fight against invasive species. To 2012, 512 organisms have been released for biological control of weeds worldwide (Suckling and Sforza 2014). However, concerns have been increasing about the existence and severity of non-target impacts, particularly the possibility that the biological control agent will attack an indigenous or crop species instead of or as well as the original target. Currently these risks are usually assessed by host-testing prior to release of the agent, but such controlled tests cannot replicate the ecological conditions the released agent may find itself in. Suckling and Sforza (2014) conducted a meta-analysis of all recorded non-target effects of biological control agents and assessed their magnitudes. They found that >99% of agents released had no, minimal or minor recorded non-target impacts. Only 4 species had caused significant adverse effects on non-target plant species, and these were all early releases which would not have met modern criteria for release. Also, almost all cases of non-target effects were on native plant species that were closely related to the target weed. This record of little adverse effects of biological control agents suggests that this is still a highly worthwhile technique for weed management with more benefits to deliver.

Suckling DM, Sforza RFH 2014. What magnitude are observed non-target impacts from weed biocontrol? PLOS ONE 9 (1): e84847.

New tool available for whodunnit

Wildlife managers are sometimes faced with evidence of a predation event, e.g. on a rare bird, or of arrival of a new invader and need to know which pest species was involved. That evidence can be degraded or fragmentary e.g. moulted hairs, faecal matter, or saliva traces, making it impossible to tell which pest species was involved from physical examination of the evidence alone. Now, a simple genetic tool has been developed which allows rapid and cheap discrimination among the 19 most common mammal species in New Zealand based on even small or trace samples (Ramon-Laca *et al.* 2013). This identification assay utilizes species-specific primers that combined in a multiplex PCR, target small fragments of the mitochondrial cytochrome *b* gene. The test amplifies two distinctive species-specific

fragments for every species tested (except hedgehog), and can detect multiple species simultaneously. As well as being accurate, this simple assay is relatively inexpensive and quick. As an example of response time, Ramon-Laca et al. (2013) were able to report on the perpetrator of a kiwi predation within 24 hours of receiving the sample.

Ramon-Laca A, Linacre AMT, Gleeson DM, Tobe SS 2013. Identification multiplex assay of 19 terrestrial mammal species present in New Zealand. Electrophoresis 34: 3370–3377.

Large domestic gardens are key contributors to urban biodiversity

Domestic gardens occupy about a third of the area, and about half of the green space available within cities, so are important contributors to overall urban biodiversity. Such domestic gardens, however, vary enormously in vegetation cover, composition and structure, ranging from gardens with large areas devoted to impervious surfaces to those dominated by trees. Van Heezik et al. (2013) have recently reported on a study of Dunedin gardens, looking specifically at which factors most determined the biodiversity present including ecological, socio-economic, and characteristics of the householders. They found that simply the size of the vegetated area in gardens was the most important factor in determining diversity. The socio-economic status of the householder and the ability of the householder to identify native and exotic species (indicating level of plant knowledge) were secondary factors correlated with plant diversity. This study indicates that to maintain and encourage urban biodiversity, town planners need to consider policies that affect property and garden size, and support and encourage retention of properties with large gardens.

van Heezik Y, Freeman C, Porter S, Dickinson KJM 2013. Garden size, householder knowledge, and socio-economic status influence plant and bird diversity at the scale of individual gardens. Ecosystems 16: 1442–1454

Other recent (since Nov. 2013) publications on New Zealand ecology

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Allen W, Ogilvie S, Blackie H, Smith D, Sam S, Doherty J, McKenzie D, Ataria J, Shapiro L, MacKay J, Murphy E, Jacobson C, Eason C. 2014. Bridging disciplines, knowledge systems and cultures in pest management. Environmental Management 53: 429–440.

Atalah J, Hopkins GA, Forrest BM 2013. Augmentative biocontrol in natural marine habitats: persistence, spread and non-target effects of the sea urchin *Evechinus chloroticus*. PLOS ONE 8 (11): e80365.

Auge AA, Chilvers BL, Moore AB, Davis LS 2014. Importance of studying foraging site fidelity for spatial conservation measures in a mobile predator. Animal Conservation 17: 61–67.

Barbaro L, Giffard B, Charbonnier Y, van Halder I, Brockerhoff EG 2014. Bird functional diversity enhances insectivory at forest edges: a transcontinental experiment. Diversity and Distributions 20: 149–159.

Barbieri RF, Grangier J, Lester PJ 2013. Arrival sequence and diet mediate interspecific competition in an ant community. Insectes Sociaux 60: 463–473.

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Becker M, Gruenheit N, Steel M, Voelckel C, Deusch O, Heenan PB, McLenachan P, Kardailsky O, Leigh JW, Lockhart PJ 2013. Hybridization may facilitate in situ survival of endemic species through periods of climate change. Nature Climate Change 3: 1039–1043.

Borkin KM, Parsons S 2014. Effects of clear-fell harvest on bat home range. PLOS ONE 9 (1): e86163.

Bulgarella M, Trewick SA, Minards NA, Jacobson MJ, Morgan-Richards M 2014. Shifting ranges of two tree weta species (*Hemideina* spp.): competitive exclusion and changing climate. Journal of Biogeography 41: 524–535.

Burns BR, Dodd MB, Hartnett T 2013. Auckland's green volcanic heart: groundcover vegetation and soils of the Auckland volcanic cone reserve network. Journal of the Royal Society of New Zealand 43: 184–197.

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Burns KC 2014. Are there general patterns in plant defence against megaherbivores? Biological Journal of the Linnean Society 111: 38–48.

Chauvenet ALM, Ewen JG, Armstrong D, Pettorelli N 2013. Saving the hihi under climate change: a case for assisted colonization. Journal of Applied Ecology 50: 1330–1340.

Coelho CRV, Michelsen O 2014. Land use impacts on biodiversity from kiwifruit production in New Zealand assessed with global and national datasets. International Journal of Life Cycle Assessment 19: 285–296.

Collier KJ, Clapcott JE, Duggan IC, Hamilton DP, Hamer M, Young RG 2013. Spatial variation of structural and functional indicators in a large New Zealand river. River Research and Applications 29: 1277–1290.

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Cunningham SJ, Corfield JR, Iwaniuk AN, Castro I, Alley MR, Birkhead TR, Parsons S 2013. The anatomy of the bill tip of kiwi and associated somatosensory regions of the brain: comparisons with shorebirds. PLOS ONE 8 (11): UNSP e80036.

de Juan S, Hewitt J 2014. Spatial and temporal variability in species richness in a temperate intertidal community. Ecography 37: 183–190.

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Filbee-Dexter K, Scheibling RE 2014. Sea urchin barrens as alternative stable states of collapsed kelp ecosystems. Marine Ecology Progress Series 495: 1–25.

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Jackson BG, Peltzer DA, Wardle DA 2013. The within-species leaf economic spectrum does not predict leaf litter decomposability at either the within-species or whole community levels. Journal of Ecology 101: 1409–1419.

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Laughlin DC 2014. The intrinsic dimensionality of plant traits and its relevance to community assembly. Journal of Ecology 102: 186–193.

Li X, Flenley JR, Rapson GL 2014. Untangling the causes of vegetation change in a 5,300 year pollen record at Tiniroto Lakes, Gisborne, New Zealand. Vegetation history and archaebotany 23: 87–96.

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McLean KL, Dodd SL, Minchin RF, Ohkura M, Bienkowski D, Stewart A 2014. Non-target impacts of the biocontrol agent *Trichoderma atroviride* on plant health and soil microbial communities in two native ecosystems in New Zealand. Australasian Plant Pathology 43: 33–45.

Monks JM, Monks A, Towns DR 2014. Correlated recovery of five lizard populations following eradication of invasive mammals. Biological Invasions 16: 167–175.

Moulton MP, Cropper WP 2014. Establishment success in introduced passeriforms of New Zealand: evidence for a Franklin Delano Roosevelt effect. Biological Invasions 16: 233–237.

Nielsen JA, Whigham PA, Frew RD, Callaway RM, Dickinson KJM 2014. Invasion essentials: does secondary chemistry plasticity contribute to the invasiveness of *Thymus vulgaris* L.? Chemoecology 24: 15–27.

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Peltzer DA, MacLeod CJ 2014. Weeds and native plant species are negatively associated along grassland and kiwifruit land management intensity gradients. Austral Ecology 39: 39–49.

Recio MR, Seddon PJ 2013. Understanding determinants of home range behaviour of feral cats as introduced apex predators in insular ecosystems: a spatial approach. Behavioral Ecology and Sociobiology 67: 1971–1981.

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Tanentzap AJ, Lee WG, Schulz KAC 2013. Niches drive peaked and positive relationships between diversity and disturbance in natural ecosystems. Ecosphere 4 (11): UNSP 133.

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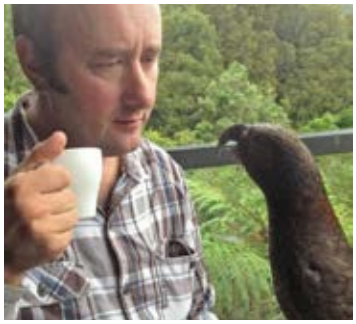
NEWS FROM COUNCIL

INTRODUCING THE NZ ECOLOGICAL SOCIETY COUNCIL

At the December 2013 AGM elections were held for several NZ Ecological Society Council positions. The current NZES office holders are profiled below.

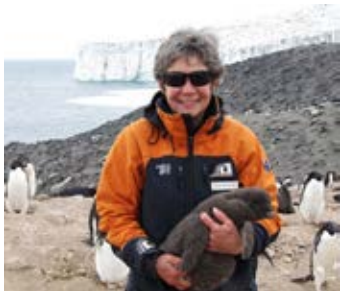
President



Chris Bycroft

Chris is a Senior Ecologist at Wildland Consultants (Rotorua office), where he has worked since 2000. He works as a botanist in a diverse range of habitats including geothermal, alpine, wetlands, forest, and in the alpine zone. He also undertakes bird surveys. Prior to working at Wildlands he completed a Ph.D. in the Botany Department, University of Otago, on the ecology and management of copper tussock grassland. He had four years on the NZES Council (2007–2011) where he was Awards Convenor. Chris co-organised the 2011 NZES conference in Rotorua. In his spare time he enjoys tramping, mountain biking, photography, and visiting wild places throughout New Zealand.

Vice President



Deb Wilson

Deb is an ecologist at Landcare Research, interested in population dynamics of rodents and mustelids and their prey species, ecological impacts of invasive mammals and habitat change on native biota, and estimating the population density of mammals, lizards and birds. Deb is an honorary senior lecturer at the University of Otago, where she contributes to the Post-graduate Diploma in Wildlife Management. Deb's PhD is from the University of British Columbia, where she studied population ecology and predation of lemmings, and her MSc is from the University of Toronto.

Photo: Phil Lyver

Secretary & Webmaster

Laura Young

Laura is about to complete a field season as a botanist at DOC, working on Tier 1 national monitoring plots. Laura is affiliated to the University of Canterbury, where she developed a management plan for the Cass Mountain Research Station and lectured in forest ecology. Laura did her PhD and MSc at the University of Canterbury investigating the role of animals in the dispersal of alpine plants, and the pollination ecology and mast seeding of *Aciphylla*. Laura has a wide ranging interest in all things ecological and has worked for several organisations in jobs ranging from forest plotting to fire ecology. Laura's passion for practical conservation is demonstrated best by her interest in hunting. Laura served two terms as a Councillor, and has been the NZES Webmaster since 2010.

Treasurer

Clayson Howell

Clayson is a scientist at the Department of Conservation (DOC) specialising in invasive plants and their management. Before starting at DOC Clayson completed an M.SC on the role of photoinhibtion on divaricate shrubs at Canterbury University. His current research includes succession in wilding conifers, weed eradication programmes and the impacts of weeds at the national scale. Clayson has been treasurer since 2008.

Immediate Past President

Mel Galbraith

Mel is Senior Lecturer in the Department of Natural Sciences, Unitec Institute of Technology (Auckland), teaching papers in ecology, biodiversity, biosecurity and restoration ecology within an applied science degree that has a major in Biodiversity Management. Mel's involvement in a number of restoration projects, particularly Tiritiri Matangi Island, Miranda RAMSAR site, and Motu Kaikoura, maintains ongoing experience in the application of ecological principles. Mel has been on the NZES Council since 2005, and is also the OSNZ Regional Representative for Auckland.

Councillors

Olivia Burge

Olivia is a PhD student at the University of Canterbury investigating constraints on forest regeneration using applied and theoretical methods in Awarua-Waituna wetland, a 20,000 ha Ramsar wetland near Invercargill. Prior to this she worked for three years in environmental law as a resource management solicitor in areas such as biodiversity offsets, policy and large industrial/residential consenting. She has a keen interest in policy-relevant science (and science-relevant policy).

Ellen Cieraad

Ellen is a scientist at Landcare Research Lincoln, and has broad research interests centred around understanding distributional limits and responses of plants to extreme environments. Her work includes plant and ecosystem-scale measurements along environmental (altitude, temperature and nutrient) and land-use gradients. Ellen undertook her PhD at the University of Durham (UK), investigating the processes forming New Zealand treelines.

George Perry

George works in the School of Environment and the School of Biological Sciences at the University of Auckland. After studying at the University of Canterbury, George moved to the University of Melbourne where his PhD considered how altered fire regimes have affected forest dynamics in New Caledonia. He then worked for four years at King's College London, before returning to New Zealand in 2004. His research focuses on the spatial dynamics of NZ forests, the effects of fire on NZ's wet forest landscapes, and the environmental transformations that accompanied human settlement of the Pacific. George is also the NZES Awards Convenor.

Debra Wotton

Debra is an independent ecologist and manages her own company Moa's Ark Research, undertaking ecological research for conservation. Debra did her BSc and MSc at Victoria University, then completed her PhD at University of Canterbury on the consequences of kereru loss for large-seeded tree recruitment. She worked as a scientist at DOC, before undertaking a FRST Postdoctoral Fellowship at Landcare Research, Lincoln. Debra's research interests include seed dispersal, mammal seed predation and herbivory, rare plants, and limits to plant recruitment. Debra has edited the NZES Newsletter since October 2010.

Journal Editor

Jo Monks

Jo is a conservation ecologist at DOC's Science and Capability Unit based in Dunedin. She is a herpetologist and behavioural ecologist by training and completed her PhD at Victoria University of Wellington in 2006. Since joining DOC she's branched out into working with bats, birds and insects, and leads research programmes focussed on both developing monitoring techniques for cryptic taxa and understanding predator dynamics and risks to native species in the alpine zone. Jo is an active member of the Society for Research on Amphibians and Reptiles in New Zealand (currently Vice President) and has edited the New Zealand Journal of Ecology since 2012.

Intecol Representative

Shona Myers

Shona is currently working for DOC National Office as a Resource Management Advisor on the prioritisation and improvement of RMA work. Shona has 30 years' experience in ecological survey, conservation of lowland ecosystems, and biodiversity policy development. Shona has also worked for the Auckland Regional Council where she was responsible for management of conservation programmes on the 40,000ha regional park network, including open sanctuary programmes. She has also worked as a scientist with the Biological Resource Centre where she was involved in establishing the Protected Natural Areas Programme. Shona has served as President and Secretary of the NZ Ecological Society, and is currently President of the International Association for Ecology (INTECOL).

POSTGRAD PROFILES

Monica Peters, University of Waikato

Monica is a PhD candidate at Waikato University, supervised by Prof. David Hamilton and Dr. Chris Eames (both in the Department of Biology).

I am just over a year into my research and currently analysing nearly 300 responses received to a questionnaire sent to community groups throughout NZ. After nearly 7 years as Waikato Regional Coordinator for the NZ Landcare Trust working closely with community groups, I became extremely interested in how groups measure the success of their restoration projects. No national level information exists hence the questionnaire.

"Citizen Science" is gathering momentum, so my research is timely. It's incredibly inspiring to see what groups are achieving. Gaining an insight into their activities, motivations and challenges is one part of the research; the other is better understanding the socio-political context their projects are situated within.

As the PhD evolves, I will be looking more closely at lake restoration - I am part of the Lake Ecosystem Restoration NZ team at Waikato University. My results will feed into the development of a tool to help community groups monitor water quality.

Community trial for WETMAK—the wetland monitoring and assessment kit.

To enable research participants (and interested parties) to engage in my research, I have set up a blog—www.monicalogues.com. Along with general posts I have begun a series of "Research Snapshots"—summaries of findings so that participants can see how I'm using their data.

monica.a.peters@gmail.com

Paul Battersby, School of Environment, University of Auckland

Paul has just completed his MSc thesis at the School of Environment, University of Auckland and is looking forward to having evenings and weekends back to spend time with his 4 month old child and a new consultant role with Opus International Consultants in Auckland. Paul was supervised by George Perry and Janet Wilmshurst with funding support from Landcare Research.

Paul's MSc research considered the evolutionary ecology of serotiny in manuka (*Leptospermum scoparium*)—the most strongly fire-adapted woody species in New Zealand's indigenous flora. The main aims of the study were to evaluate whether serotiny in mānuka can be used as proxy for fire history and to assess the interactions between serotiny, flammability and various environmental parameters at sites throughout New Zealand.

Using the palaeocharcoal record, 31 sites were placed into categories based on length of time exposed to fire, and the proportion of closed capsules at each site used as an indicator of serotiny. Environmental parameters were correlated with serotiny and flammability at each site. Flammability and germination experiments were conducted in laboratory settings on a subset of the 31 sites.

A strong latitudinal gradient in serotiny was found, with more intensely serotinous populations (higher proportion of closed capsules) in northern

Serotinous manuka capsules from Kaituna Bog, Bay of Plenty. The dull coloured capsules are from previous years, while the brighter brown capsules are from the preceding season. Open capsules that have split and shed seed are also evident.

regions. Environmental parameters such as high soil moisture deficit and lack of seasonal summer rainfall, acting in conjunction with fire are important in determining serotiny at a site. The nature of the fire regime predicts serotiny at a coarse fire vs no fire level but more subtle divisions (e.g. between sites that have experienced fire since the mid-Holocene as opposed to those where it has only occurred post-settlement) are difficult to establish. There was no correlation between flammability and serotiny.

Placing Paul's research into the longer-term perspective, it is likely that the Quaternary fire regime in NZ was sufficient to maintain serotiny, if not flammability traits. The effect of two waves of anthropogenic fires – Maori and European – has been to: (i) expand the abundance and range of mānuka across the landscape and (ii) significantly increase the expression of serotiny in the species.

THE NOTICEBOARD

LOCAL WEEDBUSTING HEROES WANTED FOR PATS ON THE BACK

Do you know of individuals or groups who are busting weeds in their community? Want to give them a pat on the back and a bit of recognition for their efforts? Here's your chance!

Nominations for Regional Weedbusters Awards 2014 are now open

Entry is open to all who volunteer their time toward weed management and education.

Volunteers may be dedicated individuals, part of a community group, or an industry/organisation. They might be involved in a small project or a big one—it doesn't matter.

Volunteers may receive financial support from grants to cover operational costs, but time spent implementing initiatives MUST be donated.

The awards recognise weed management initiatives across all land types: private, public, rural, urban and coastal. They also recognise weed advocacy, awareness and education efforts.

Nominations can be made online at http://www.weedbusters.org.nz/awards/index.asp until 30 April 2014—and anyone can make a nomination.

Christopher Rendall

VOLUNTEER WEED CONTROL RANGERS, RAOUL ISLAND

The Department of Conservation is currently recruiting for 6 volunteers for the August 2014 departure of the Raoul Island volunteer weed programme. The position will be based on Raoul Island, Kermadec Islands: 1000kms NE of Auckland, halfway between NZ and Tonga.

Closing date for applications: April 30th 2014

Contact: Sue Cameron, Volunteer Coordinator, aucklandvolunteer@doc.govt.nz

These placements are for a 6 month period on the island from August 2014 and follow a three week training period prior to departure.

Preference will be given to those with remote living experience, maintenance skills and experience in the outdoors. Emphasis of the job is weed eradication in challenging terrain, but shared food preparation for a small team (includes 4 island based staff) and maintenance of infrastructure are also required tasks.

Please contact Sue with your expression of interest so further application information can be forwarded.

DONATE NOW! KAURI FUND FOR ECOLOGICAL SCIENCE

We invite you to help grow the science of ecology in New Zealand by contributing to the NZES Kauri Fund. This fund was established in 2001 to provide resources for initiatives that assist the development of ecology and ecologists in New Zealand. As the Fund grows, it will play an increasingly critical role in advancing the Society's goals and fund exciting new initiatives for New Zealand ecology.

Please consider a contribution, whether $10, $20 or $50, to the Kauri Fund now or at the time you renew your subscription. You can make your contribution to the Kauri Fund in two ways:

Send a cheque made out to the "NZES Kauri Fund" to the New Zealand Ecological Society, PO Box 5075, Papanui, Christchurch 8542.

Use internet banking, to credit your donation to New Zealand Ecological Society, bank account 06 0729 0465881 00, identifying the payment as "Kauri Fund".

NEW ZEALAND-WIDE CLASSIFICATION OF OUTSTANDING SEED-SOURCES TO UPSCALE INDIGENOUS AFFORESTATION

Please contribute to upcoming project

Tane's Tree Trust is seeking information from its members, Nurserymen, Ecologists and Bushmen about the location of stands of high performing native trees with the intention of including these in a nation-wide database. This is part of a project aimed at assessing the availability of high performing seed resource native tree species.

Nothofagus truncata—*outstanding seed-source—Kahurangi NP (HJ Janssen)*

High quality stands of useful native trees cannot easily be located in many of NZ's lowland and hill country environments, as original native forest-covered lands were clear-felled, burned, and remnants were marginalised. What fragments remain of indigenous trees and stands in lowlands and hill-country are often of inferior use potential and vitality and could be a contributing factor towards continuing indigenous biodiversity loss.

In order to improve the quality of native trees grown for productive uses such as timber production or cultural use, we need to know where the best trees are from which to source seed.

We are particularly interested to include in this inventory the seed-sources for native tree used by nurseries and any outstanding examples of puriri; rewarewa; tawa; taraire; titoki; tawari; mangeao; hinau; black maire; kohekohe; kowhai; akeake; rata; the beeches; tanekaha; kauri; totara; rimu; kahikatea; miro and matai.

Please email Mel office@tanestrees.org.nz with your description of sites (name and location, preferably with a map reference (or latitude & longitude) of outstanding native trees that ought to be part of this nation-wide quality seed-source inventory.

For further information on the project, sites or stands, proposed project involvement and to cc site descriptions, please contact HJ Janssen resourceinfo.mgmt@gmail.com

UPCOMING MEETINGS

National Marine and Freshwater Education Wānanga Conference 2014
26–28 April 2014
Kuratini Marae, Massey University, Wellington
In partnership with the Island Bay Marine Education Centre
Communicating science for marine and freshwater conservation ACTION
http://www.emr.org.nz/information.php?info_id=99

16th Australasian Vertebrate Pest Conference
26–29 May 2014
Brisbane, Queensland, Australia
http://www.avpc.net.au/

Island Biology 2014
7–11 July 2014
Hawaii, USA
https://sites.google.com/a/hawaii.edu/islandbiology2014/
To receive announcements email island.biology@gmail.com

NZ Ecological Society Conference
16–20 November 2014
Massey University, Palmerston North
Is NZ the world's invasion hotspot?
www.nzes2014.org

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(Effective from 26 November 2013)

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SUBMISSIONS TO THE NEW ZEALAND ECOLOGICAL SOCIETY NEWSLETTER

Contributions from NZES members are sought in the form of:

- **Feature articles** on topics of interest to NZES members
- **Event announcements**, for listing on the Noticeboard
- **Conference reports**, on conferences of ecological relevance
- **Images**, for *Illustrate Ecology* on the newsletter cover
- **Ecology news from overseas**
- **Book reviews**
- **Post graduate profiles**

Feature articles can be up to 1,000 words accompanied by up to four images.

Conference reports should be around 600–800 words with up to three images.

***Illustrate Ecology* images** should be accompanied by a short title and a caption explaining the ecological concept illustrated.

Book reviews of up to 1,000 words are now published in the newsletter. If you would like to review a book of interest to NZES members, please contact the newsletter editor.

Postgraduate profiles of current or recent PhD, MSc, or Honours students should be no more than 200–300 words and include a 2-sentence blurb about yourself, a summary of your thesis written for a general scientific audience, and a photo and caption related to your research.

Please do not use complex formatting—capital letters, italics, bold, and hard returns only, no spacing between paragraphs. All images should be emailed as high resolution (300 dpi) jpg files. All contributions and enquiries can be emailed to Debra Wotton, the Newsletter Editor: newsletter@nzes.org.nz

Content for the June 2014 issue of the NZES Newsletter is due by Friday 6 June 2014.

MEMBERSHIP

Membership of the society is open to any person interested in ecology and includes botanists, zoologists, teachers, students, soil scientists, conservation managers, amateurs and professionals.

Types of Membership and Subscription Rates (2014)

Full (receive journal and newsletter) .....$90* per annum

Unwaged (with journal) .....$55* per annum
Unwaged membership is available only on application to Council for full-time students, retired persons etc.
Unwaged members may receive the journal but must specifically request it.

Overseas Full .....$115* per annum

School.....$22 per annum

Institutional (New Zealand) ..... $NZ130* per annum (incl. GST and postage)

Institutional (Australia & South Pacific) ..... $NZ140* per annum (incl. GST and postage)

Institutional (Rest of World) ..... $US90* per annum (incl. air postage)

Overseas members may send personal cheques for their local equivalent of the NZ$ amount at current exchange rates, for most major overseas currencies.

For more details on membership please write to:

NZ Ecological Society
PO Box 5075
Papanui
Christchurch 8542
NEW ZEALAND

or e-mail: info@nzes.org.nz

* There is a $10 rebate for members who renew before Feb 15 each year, and for new members