NEW ZEALAND ECOLOGICAL SOCIETY

Newsletter

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FROM THE EDITOR

I thoroughly enjoyed the recent NZES conference in Rotorua (and not just for the hot pools). For those that missed it, Jane Gosden has written a fantastic report for the newsletter. Listen out for coverage of the Waimangu fieldtrip on Radio New Zealand National's "Our Changing World"! Next year's conference will be in Lincoln.

This year the NZ Ecological Society celebrates its 60th birthday. It's an impressive milestone that was marked in style at the conference dinner by glamorously dressed ecologists (apparently not an oxymoron), a huge cake, and a toast to NZES. Dave Kelly can always be relied on in his unofficial role as the Society's 'corporate memory'. His retrospective of the last six decades of NZES (p. 2) is a great reminder of where we have come from and what we have achieved since the Society was formed.

The NZES Council recently wrote to the Minister for Conservation expressing concerns about the impact on NZ's biodiversity of impending job losses at the Department of Conservation (p. 12). In other news, there was extensive discussion about the profile and scope of the society's journal at this year's AGM. Members passed a resolution to establish a working group to advise on the journal's future. The AGM minutes will be posted on the website.

In this issue I introduce a new feature for the newsletter "Illustrate Ecology", showcasing outstanding images (photos, drawings etc.) that illustrate any aspect of ecology. Members can email me ecological images for publication in this section, accompanied by a suggested short title and caption. Thanks to Laura Young for contributing the first superb image.

Please note that the society now has a new postal address: PO Box 5075, Papanui, Christchurch 8542. If you have any ideas for newsletter items I'd love to hear from you.

ILLUSTRATE ECOLOGY

'Perfect concealment'

A jumping spider on the Borland Tops, Fiordland, perfectly concealed in its granite habitat. Photo: Laura Young, University of Canterbury.

Debra Wotton
Landcare Research
Lincoln
E-mail: newsletter@nzes.org

The deadline for submissions for the next issue of this newsletter is Monday 12 December 2011.

INSIDE:

CELEBRATING 60 YEARS OF NZES

Dave Kelly

The Rotorua conference this year marked the 60th year of the NZ Ecological Society and I was asked to introduce a toast to the Society at the Conference Dinner before we cut a birthday cake. In doing so I focused on two aspects: effort and achievement.

The effort comes from voluntary labour, because the Society has always run on unpaid contributions of time. Going back over the archives, I collated a summary of recorded positions over the years between 1951 and 2010/11. A total of 199 different ecologists have contributed their time and expertise to the different positions. Those who have spent the longest are listed in the table. At the Dinner I highlighted three of these.

K.E. Lee was one of the inaugural officeholders, and was instrumental in helping set up the society, acting as both secretary and treasurer for the first five years of the Society (while the position of President is limited to 2 years, no such restrictions apply to Secretary or Treasurer). He later acted as Vice-President and President (1962–64).

Murray Williams has the unique record of having served the Society in every major position (President, Vice President, Secretary, Treasurer, Journal Editor, Submissions Convener, Councillor), from the mid 1970s to the late 1980s.

Ian Atkinson spanned these two periods, having been Secretary in the early 1960s, and later Vice-President and President 1983–87 along with spells on Council.

Those three have made pivotal contributions to the Society. There are also another 196 volunteers who have contributed in myriad ways, as the current Council elected at Rotorua continues to do. The Society owes a debt of gratitude to all those who have so ably helped her on her way.

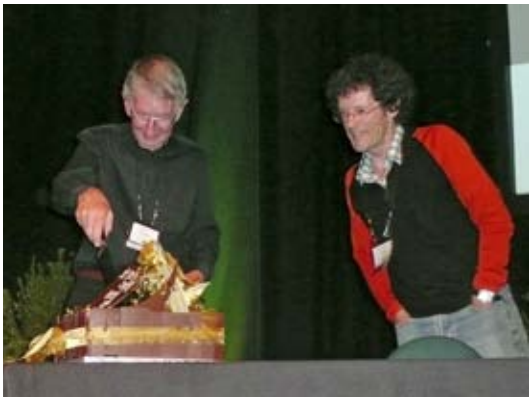
In terms of achievement, it is easy to take for granted how far the science of ecology has progressed during the lifetime of the Society. In her talk at Rotorua about Don Merton, Alison Ballance spoke of a formative event in Don's life being the ship rat (*Rattus rattus*) invasion of Big South Cape Island in 1964. Although I was only 9 at the time, it has become a retrospective landmark for me too. Notoriously, the rat invasion led to the global extinction of two endemic vertebrate species, the bush wren *Xenicus longipes* and the greater short-tailed bat *Mystacina robusta*, and one subspecies, the Stewart Island subspecies of the New Zealand snipe (*Coenocorypha aucklandica iredalei*). Wildlife Service staff including Don Merton worked frantically to translocate or protect species, barely saving the South Island subspecies of the saddleback (*Philesturnus carunculatus carunculatus*), but they were unable to save the wren, bat or snipe.

To measure our progress, it is worth noting that Big South Cape is probably the low-water mark for New Zealand ecology, and through improvements in science the tide then turned. I think there have been no extinctions of vertebrates in New Zealand since then, and if the rat invasion had happened 20 years later it would have been a trivial job to eradicate the rats. If that had been the case, we would still most likely have the wren and bat extant.

Sixty years old used to be the retirement age for people (now 65), but there's no prospect of the NZES being declared redundant or fading away. Although we have achieved much, there is a lot still to do. A number of species of plants and animals are still with us, but in intensive care. Better methods are badly needed for cost-effective restoration of mainland species interactions, for pest control at low densities, and for management of genetically depauperate populations of rare species. In this context, the seemingly endless cuts to the Department of Conservation budget are of great concern, given the excellent (and very cost-effective) work done by DOC. But as we look back on 60 years of the NZ Ecological Society, there is much to be thankful for.

Years of voluntary service to NZES in named positions 1951–2010 in the NZES archives.

Office holders	Yrs	Positions
K.E. Lee	17	President, vice-president, secretary, treasurer, councillor
Murray Williams	16	President, vice-president, secretary, treasurer, journal editor, submissions convenor, councillor
Ian Atkinson	14	President, vice-president, secretary, councillor
K.R. Allen	13	President, editor, councillor
Dave Kelly	13	Secretary, treasurer, councillor
John A. Gibb	12	President, vice-president, editor, councillor
Wren Q. Green	12	Vice-president, councillor
Colin L. McLay	11	Councillor, newsletter editor
Gavin T. Daly	11	Secretary, councillor
Judith Roper-Lindsay	11	President, vice-president, newsletter editor, councillor
Gordon R. Williams	10	President, vice-president, editor, councillor



George Gibbs cuts the Society's 60th birthday cake as Dave Kelly looks on. Photo: Debra Wotton.

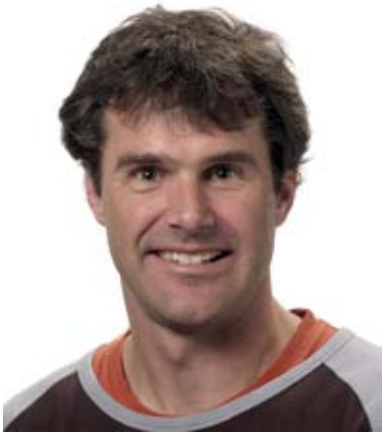
NZES ANNUAL AWARDS

Congratulations to the recipients of NZ Ecological Society awards for 2011, which were presented at the NZES annual conference in Rotorua in August.

TE TOHU TAIAO AWARD FOR ECOLOGICAL EXCELLENCE

Richard Duncan (Lincoln University)

Richard is a rare breed of ecologist. He is hard to pigeonhole. Richard is a forest ecologist, a plant ecologist, an invasion biologist, and a community ecologist, among others. His papers span everything from forest dynamics of Westland forests to the mass extinction of Pacific Island birds to a recent foray into Australian dung beetle introductions. The theme uniting Richard's diverse research is seeking out the right datasets to answer interesting and important questions. Perhaps Richard can best be described as a modern day wizard. His research involves casting magical R scripts on large datasets to reveal wonderful new things.



Richard Duncan, 2011 recipient of the Te Tohu Taiao Award for Ecological Excellence.

Richard's academic achievements to date are impressive, with many papers in Science, Nature, and PNAS, among many other contributions to top tier journals. A brief look at the titles of some of these, written by Richard with a range of collaborators, give a feel for the breadth and depth of intellectual curiosity and sheer wizardry that is Richard Duncan:

- Negative soil feedbacks accumulate over time for non-native plant species (Ecology Letters, 13:803–809, 2010).
- Safe sites, seed supply, and the recruitment function in plant populations (Ecology, 90:2129–2138, 2009).
- Do climate envelope models transfer? A manipulative test using dung beetle introductions (Proceedings of the Royal Society. Series B. Biological Sciences, 276:1449–1457, 2009).
- Strong human association with plant invasion success for *Trifolium* introductions to New Zealand. (Proceedings of the National Academy of Sciences, USA, 105:6344–6349, 2008).
- Avian extinction and mammalian introductions on oceanic islands (Science 305: 1955-1958, 2004).
- Darwin's naturalization hypothesis challenged (Nature 417: 608-609, 2002).
- Prehistoric bird extinctions and human hunting (Proceedings of the Royal Society London, B 269: 517-521, 2002).
- Determinants of establishment success in introduced birds (Nature, 414, 195-197, 2001).
- Propagule size and the relative success of exotic ungulate and bird introductions in New Zealand (American Naturalist, 157, 583-595, 2001).
- Forest dynamics in Westland, New Zealand: the importance of large, infrequent earthquake-induced disturbance (Journal of Ecology, 89, 1006-1018, 2001).
- Determinants of plant extinction and rarity 145 years after European settlement of Auckland, New Zealand (Ecology, 81, 3048-3061, 2000).

Richard began his wide ranging journey through ecology in forestry. He has a Bachelor in Forestry Science and PhD (1991) from the University of Canterbury School of Forestry. His PhD thesis was "Disturbance, succession and the coexistence of species in a lowland podocarp forest, South Westland, New Zealand", one of his many collaborations with accomplished New Zealand forest ecologist Glenn Stewart. Richard and Glenn went on to work together with PhD student Andrew Wells to reveal the surprisingly large impact that earthquakes have on the age structure and composition of Westland forests. Their results were well cited by the scientific community and gained the attention of seismologists and even achieved international exposure on an episode of the popular British TV show, "Rough Science".

In his years at Lincoln University, Richard has supervised a long list of postgraduate students and is well known for his sharp intellect, infectious curiosity and excitement for science, and open door, not just for his own postgrads. Alice Miller, one of Richard's past PhD students, writes " I say with absolute sincerity that Richard Duncan was the ideal postgraduate supervisor. His infectious enthusiasm for solving ecological puzzles, from formulating the question to figuring out how to answer it to seeing your results, coupled with his brilliance at all of the above made working with him a real privilege." Richard is well known for keeping everyone's attention focused on the big questions and key hypotheses being tested. He has been largely instrumental in the widespread use of the statistical application R throughout Lincoln ecology postgrads for many years now.

Richard delights in learning and applying cutting edge statistical techniques. Past postdoc Jeff Diez observes that Richard "wields quantitative tools with remarkable ease, understanding when they help illuminate versus get in the way." Richard proudly wears a t-shirt with the Bayes theorem on it. The manual he wrote for a postgraduate course in

R, called Research Methods in Ecology, is still in informal use by students, and staff, at universities throughout New Zealand, despite Richard being a full-time researcher at the Bio-Protection Research Centre for several years. He has also led successful workshops on data analysis for Department of Conservation staff in his uniquely lucid and enthusiastic style.

UK-based ecologist Tim Blackburn, writes the following of Richard. "I think that the best papers of my career have been the ones I worked on with Richard, and that is all down to the insight and intelligence that Richard brought to them. He is never satisfied with ordinary, but always looking for a new and better way to analyse and present data. He is without doubt the clearest thinker and consistently exciting innovator that I have ever been lucky enough to work with. As if this wasn't enough, he then writes and talks about his research with a clarity and simplicity that belies the skill and effort that has gone into it. It's rare that I read one of Richard's papers without at some point thinking "Oh, that's clever!" In fact, he has a rare talent of making sophisticated science seem like something that anyone could do. Another reason I love working with him is that it makes me seem smart!"

Tim continues, "Richard is a brilliant scientist and a truly deserving recipient of this award. I have been lucky enough to work with him on studies of bird invasions and extinctions, and such is his knowledge of these subjects that it's easy for me to forget that this work is just a side interest of his. He's not even a zoologist. It's just as well that Richard is such a charming, funny, positive, modest and interesting person, because otherwise he'd be very easy to hate."

Jeff Diez, a past postdoc of Richard's, summarises the rough formula for Richard's success: Curiosity and creativity + Incisive thought + Flexibility (and rigor) of method + Good story telling = Successful science. "One would hope that good collaborations thrive by piecing together the various parts of this process, but Richard is one of the few that seems to be able to do it all."

Jeff continues, "And on top of all this, at the end of the day he's just such a nice guy. He has in spades what I came to see as a fundamental kiwi trait of being as modest as you are excellent. So, I've found working with him inspiring, educational, empowering, fun and humbling all at once. A real privilege and pleasure. And he plays a mean air guitar."

Collaborator Dave Forsyth noted that Richard's "enthusiasm is boundless," something Richard applies to more than his research. His nickname in undergrad was "smiley". In his younger days, Richard climbed Mount Cook (more than once) and is now a competitive racing cyclist. Richard's Fulbright MSc student Kelly Gravuer observes that "Richard clearly understood the life balance needed in order to dive into his work each day invigorated. Whether spending time with family, engaging in renewing outdoor pursuits, or bonding with friends over Bob Dylan karaoke, he showed through his example that a rich, diverse life can promote the sustained enthusiasm for research that allows innovative advances to be made. I learned so much from Richard, personally as well as professionally. Richard was a great advisor in teaching me perhaps the most important lesson of all: how to maintain a lifelong enthusiasm for ecology by employing a mindful, balanced approach to how one spends one's time."

Richard has already made more than an average career's worth of contributions to New Zealand ecological science. He is currently embarking on an ambitious Marsden-funded project with Phil Hulme on the build-up of pathogens on naturalised plants and has just been awarded funds for a postdoc looking at pathogen build-up on crop plants. There is a lot more to come from Richard. It is appropriate that an ecologist at the very top of his game gets the top award from the New Zealand Ecological Society. If Richard achieves another career's worth of research before he retires, he may need to be awarded it again.

Nomination by Jon Sullivan

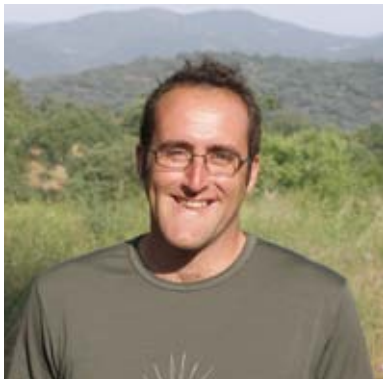
ECOLOGY IN ACTION AWARD

John Sawyer (Auckland Council)

In almost 18 years at the Department of Conservation, John has made an impressive contribution to promoting ecology throughout New Zealand. John has translated ecological advice not just for day-to-day DOC operations, but also for councils and the public as well.

One of John's strengths is his ability to engage a remarkably diverse range of people. During his time at DOC, John forged links with many organisations including Forest and Bird, QEII, local government, and botanical societies. He has been particularly adept at convincing others to contribute their time to publications...or to contribute wine to a book launch!

John is a keen advocate for effectively communicating ecological science to the public. While President of the NZ Ecological Society he was instrumental in revamping the society's website, and also organised media releases to promote new research published in the NZ Journal of Ecology.



John Sawyer, 2011 recipient of the Ecology in Action Award.

Perhaps one of John's greatest achievements to date is his role in creating the NZ Plant Conservation Network website. Constantly updated, this website is a first port of call for anyone working with or interested in our native flora, weeds, and threatened plants in particular. John is continually coming up with new and exciting ideas to make this site even more useful.

If John was working to role during his time at DOC Wellington Conservancy, his advice would have been restricted to the lower North Island. But John's passion has always been much bigger than Wellington. He recently moved to Auckland Council, so Otago will likely benefit…

With an eye for pretty things, he has produced guides to Clematis, orchids and mistletoes, although he occasionally got down and dirty with weed-swaps. John is particularly passionate about biogeography, and has focused on making NZ plant distribution records widely available. He has also been instrumental in encouraging students to attend ecol-soc conferences.

John has published nearly 40 books, reports, plans, checklists and scientific papers covering topics ranging from the status of threatened plants to ecological restoration and biogeography. John authored 'Plant me instead', a useful guide to what to plant in your garden instead of weeds. He was so busy with publishing books on what to plant instead he never got round to weeding his own garden…

John does an outstanding job of transferring ecological knowledge to a wide audience, raising awareness and achieving the protection and restoration of New Zealand's native biodiversity.

Nomination by Clayson Howell

HONORARY LIFE MEMBERSHIP

Eric Spurr

We would like to nominate Eric Spurr for life membership of the Society to recognise his outstanding service to the discipline of ecology within New Zealand, particularly to bird and pest ecology, and for his work to assist the success of the Society.

Eric completed a BSc (Hons) on the behaviour of the white-faced heron in 1967 and a PhD on the social organisation of the Adelie penguin in 1972 at the University of Canterbury before being recruited by the then Forest Research Institute. His position moved to Landcare Research when that organisation was created in 1991 and he worked there until his retirement in 2009. Throughout this time, Eric worked on a multitude of projects although his great passion has always been in avian ecology. These projects cover a very broad range of applied ecology, with a focus on pest control (mainly birds and wasps) often focussing on the use and effects of toxins, bird population monitoring, and restoration and protection (of birds and crops). He pioneered the application of 5 minute bird counts to assess bird populations in native forests, for the Forest Service, including effects of 1080 operations. He was a careful user of this now sometimes criticised technique, undertaking power analyses to help interpretation, and he was always careful about observer effects, use of control blocks, etc.

Eric is a disciplined publisher, always pleasant and positive, always thoughtful and helpful, and has been extremely professional throughout his entire career. He has published >40 scientific papers and around 100 contract reports again covering a broad range of topics including pest lures, pest biology, baiting strategies and practicalities (e.g. preservatives for meat in baits), bait lures, magpie impacts, crop pests and their management strategies, poison impacts on non-target species (weka, birds generally, invertebrates). His 1979 New Zealand Journal of Ecology paper about the theoretical ability of bird populations to recover from population loss (e.g. by 1080) IF it occurred, was very influential, discerning a key difference between K- and r-selected species.

As well as contributing to the pursuit of applied ecology, Eric has contributed hugely to transferring ecology to the general public and looking for real-world outcomes. On his webpage at Landcare Research he lists 'increasing the number of bellbirds in towns and cities' as one of his research interests, and he has been involved with local Councils and various restoration groups over the last few years in trying to achieve this feat in Christchurch. He is also a leader of the Ashley/Rakahuri Rivercare Group near his home in Rangiora which is focussed on restoring populations of braided river bird species there. His best known role in the last few years, however, is in leading the National Garden Bird Survey, which has been compiling large quantities of survey information from the public in gardens across New Zealand on an annual basis, and generating a new generation of avian ecologists.

Eric joined the Society in the 1970s and has been a member ever since. Over this time, he has been a regular contributor at Ecological Society conferences and has held several posts in the Society. These include newsletter compiler (1976–1977), Secretary (1977–1979), Journal Editor (1979–1981) and editorial board member (1989–1999). Eric was also on the local organising committee of the 20th International Ornithological Congress in Christchurch in 1990.

Eric has contributed a life-time of work to the study and application of ecology in New Zealand and we feel is a very worthy nomination for life membership of the Society.

Nomination by Bruce Burns and John Innes

BEST PUBLICATION BY A NEW RESEARCHER

From 2010 onwards, only papers published in New Zealand Journal of Ecology are eligible for this award.

Susan Cunningham

Cunningham S. J. and Castro, I. (2011) The secret life of wild brown kiwi: studying behaviour of a cryptic species by direct observation. New Zealand Journal of Ecology 35(3): 209–219. www.nzes.org.nz/nzje/new_issues/NZJEcol35_3_209.pdf

Abstract

Kiwi possess many unusual features that make them interesting subjects for behavioural study. However, their nocturnal, cryptic nature has meant that studies to date rely on data collected indirectly. Infrared technology has enabled us to observe kiwi directly and here we present the first study of wild brown kiwi (Apteryx mantelli) behaviour by direct observation. We used handheld infrared video cameras to obtain c. 6 hours of video footage of kiwi over 19 months. Kiwi used native forest and exotic pasture habitats while active at night and spent most of their time foraging (75%). Prey capture rates were significantly higher in pasture than forest. The remaining 25% of time was spent walking, vigilant, engaged in comfort behaviours, escaping disturbance, and investigating obstacles. Direct social and courtship interactions were observed rarely. The senses of hearing, olfaction and touch seemed most important to kiwi. Touch was used for investigating terrain and negotiating obstacles. Hearing was used in response to sounds made by observers, conspecifics and other sources. Olfactory search behaviours (OSBs) were used in the direction of these sounds, and olfaction was also apparently used to assess odours on the ground. We observed no behaviours that appeared to be guided by vision. Behavioural repertoire size and diversity increased in winter, due to increases in OSBs towards conspecifics and other odour sources, and rarely observed behaviours. Prey capture rates also increased near-significantly in winter and microhabitat use was more diverse. Female kiwi at our study site had 30% longer bills than males, and probed into soil substrates on average 30% deeper. No other fine-scale behaviours that might reduce competition between kiwi sexes were observed.

CONFERENCE STUDENT AWARDS

Best student conference paper

Catherine Bryan (Centre for Biodiversity & Ecology Research, University of Waikato)

Bryan, C. L. & Clarkson, B. D. Vascular epiphytes in urban ecological restoration

Abstract

Urban environments present multiple challenges for ecological forest restoration. Many native plant guilds such as midstorey trees and shade tolerant shrubs are absent in urban forests and accordingly become priorities in restoration projects that aim to restore ecosystem function. Here, we focus on another guild of native plants that are underrepresented in urban forests but rarely prioritised in restoration; the vascular epiphytes and vines.

Communities of epiphytes and vines were surveyed on 750 host trees in urban and nonurban forests of the Waikato and Taranaki regions along with canopy microclimate monitoring. A total of 31 species were identified, with comparable diversity and a wide range of growth forms in both regions. Population comparisons showed that urban Waikato forests were relatively depauperate. Epiphyte and vine diversity and abundance was found to be correlated to host tree characteristics, associations with nest epiphytes, and canopy microclimate; all of which were less conducive in the highly modified urban Waikato forests.

A physiological drought tolerance experiment on the shrub epiphyte *Griselinia lucida* was undertaken to further explore microclimatic requirements for establishment and survival. This species postponed desiccation through reduced photosynthetic and stomatal activity which facilitated rapid recovery with rewatering.

Strategies for inclusion of epiphytes and vines in forest restoration were developed to assist restoration planning. Future planned research includes reintroduction trials for the establishment of best practise methodology. This study has highlighted the importance of New Zealand's vascular epiphytes and vines and presents a case for their explicit inclusion in restoration projects.

Highly commended student presentation

Fiona Clarkson (Centre for Biodiversity & Ecology Research, University of Waikato)

Clarkson F. M., Gemmill, C. E. C., Clarkson, B. D. Population genetics and autecology of the endemic shrub *Pittosporum cornifolium*

Abstract

Habitat loss and fragmentation are recognised as major drivers of the extinction of specialist species. *Pittosporum cornifolium* (Pittosporaceae) is an endemic dioecious shrub with lifestyles ranging from epiphytic to rupestral and terrestrial. The primary habitats of *P. cornifolium* are lowland and coastal ecosystems which, in recent times, have been widely cleared and fragmented resulting in major reductions to the species potential range.

We investigated the population genetics and autecology of *P. cornifolium* across five populations on North Island where habitat loss and fragmentation have been significant. Genetic analysis revealed relatively low genetic diversity at the population level, which is indicative of geographic isolation caused by habitat fragmentation.

Demographic parameters such as sex ratios and population structures were investigated to determine current ecological status of these populations and results did not reveal any substantial limitations to regeneration and dispersal. Environmental profiling identified the major determinants of the species distribution throughout New Zealand. *Pittosporum cornifolium* is absent from areas where mean daily temperature minimums of the coldest month are <0.6°C.

We also assessed levels of intra-specific divergence in *P. cornifolium* individuals from the Poor Knights Islands, which are morphologically distinct from mainland forms. Significant differences were observed across multiple lines of evidence (genetics, morphology and anatomy), and suggest recognition at subspecies or even species level may be warranted.

The results of this research have provided a framework for the development of species specific conservation and restoration strategies for *P. cornifolium* and reintroduction trials are currently being initiated.

Best student poster

Marie Brown (Centre for Biodiversity & Ecology Research, University of Waikato)

Brown, M. A. Clarkson, B. D. & Barton, B. Towards robust exchanges: evaluating the use of ecological compensation under the Resource Management Act 1991.

Abstract

Compensating for ecological harm is an established practice under the Resource Management Act 1991(RMA), and elsewhere around the world. Compensatory mechanisms for ecosystem damage can include a range of positive conservation actions such as ecosystem restoration or creation, fencing, pest and weed control and legal protection. While requiring ecological compensation for adverse ecological effects is common; research and monitoring into the effectiveness of the actions is not.

Comprehensive research into the ecological outcomes of compensation agreements has been scarce worldwide, and not carried out in New Zealand to date. Our research is nationwide, and assesses 112 resource consents to determine the ecological outcomes being achieved. The lack of policy guidance in New Zealand has also meant that stakeholders in a development context have driven the use of the concept. The perspectives of these stakeholders are therefore pivotal to understanding the context in which ecological compensation is negotiated and implemented. These perspectives are being collected via a series of structured interviews with relevant stakeholders.

A stronger understanding of the context, processes and outcomes associated with the use of ecological compensation in an RMA context in New Zealand will provide valuable insights into establishing a more robust framework and generating more favourable ecological outcomes.

Highly commended student poster

Joshua Thoresen (Institute of Natural Sciences, Massey University)

Thoresen, J. Monitoring gecko diversity at predator controlled and uncontrolled sites

Abstract

New Zealand geckos do not only face predation by native birds including pukeko (*Porphyrio porphrio*) and morepork (*Ninox novaeseelandiae*), but also introduced mammals, such as rats (*Rattus* spp.), possums (*Trichosurus vulpecula*) and cats (*Felis catus*). There is a current inability to effectively monitor gecko populations in forest ecosystems due to their cryptic and elusive nature and behavioural changes caused by high predator densities. Hence, our current knowledge of population sizes and dynamics as well as predation impacts particularly on arboreal gecko species is scarce. A new survey method developed by Bell (2009) was applied which allows monitoring of low density gecko populations. Cell foam retreats (CFR's) were attached to tree trunks along twenty transects and systematically checked once every two days over two weeks. Populations of forest (*Mokopirirakau*[1] *granulatus*), green (*Naultinus elegans*) and pacific geckos (*Dactylocnemis*[1] *pacificus*) were monitored in three regional parks around Auckland (Whakanewha, Tawharanui, Shakespear). These parks currently differ in their pest management strategies: poisoning, eradication/exclusion, and no management[2] (respectively). Preliminary results showed that Whakanewha had the highest densities of geckos (52 per h/a) and densities at Tawharanui and Shakespear were significantly lower (8 and 6.25 per h/a respectively). Surveys conducted in areas without pest control adjacent to Whakanewha (Waiheke Island) also showed high densities of geckos (23 per h/a), despite the presence of rats, mustelids (Mustelidae spp.) and cats. This result suggests the intriguing possibility that possums (which have never been present on Waiheke Island) could be exerting significant predation pressure on geckos on the mainland.

1 Previously *Hoplodactylus* as newly described in: Nielsen et.al. (2011).

2 Shakespear used to run an annual pest control programme but have stopped for several months leading up to a large poison drop in July.

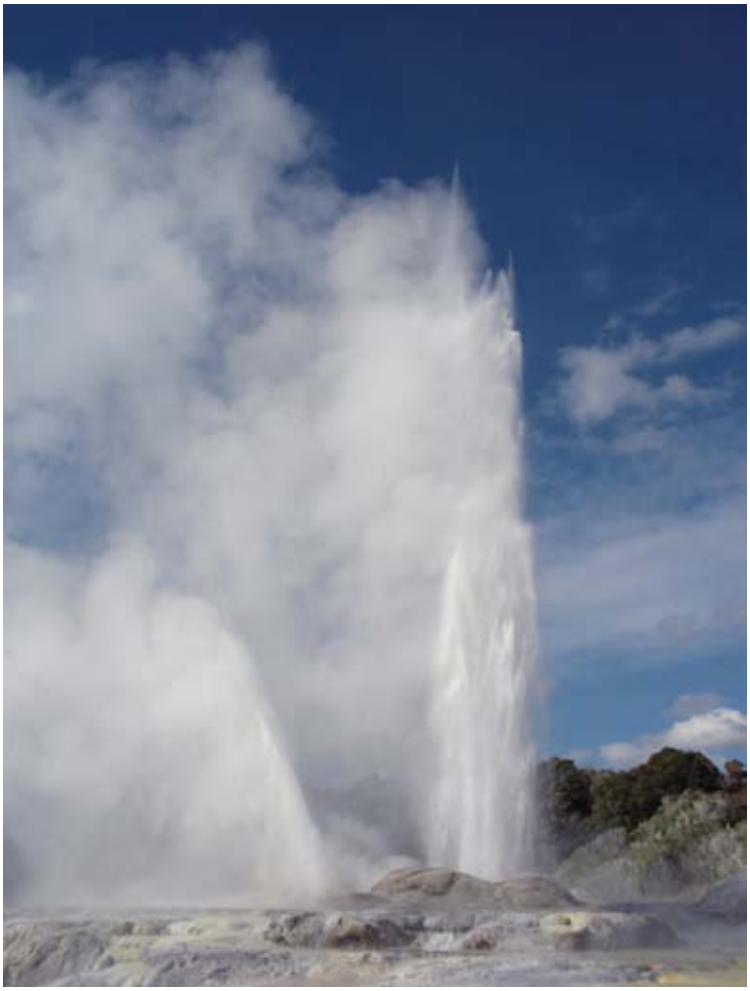
CONFERENCE REPORT

NZ Ecological Society Conference, Rotorua, 28 August–1 September 2011

By Jane Gosden, University of Canterbury

The 2011 Ecology in the Heartland — NZES & New Zealand Society of Plant Biologists conference was a success by any measure you care to use. Around 300 ecologists and plant biologists descended on Rotorua to attend the three days of talks, with many staying on for the field trips at the end of the week. The conference was also a special celebration for the NZES as it reached its 60th anniversary.

The conference opened on Sunday 28 August, with the student day, which gave students an opportunity to present their work or practice their talks before the main conference. The student day had two highlights for me; firstly, the lunch time excursion to Te Puia where we were able to watch the Pohatu Geyser, and see a *Korthalsella* mistletoe. Secondly, the talks by Shona Myers who shared some of her ecological work experiences, and Professor Bruce Clarkson who gave students some valuable advice on publishing.



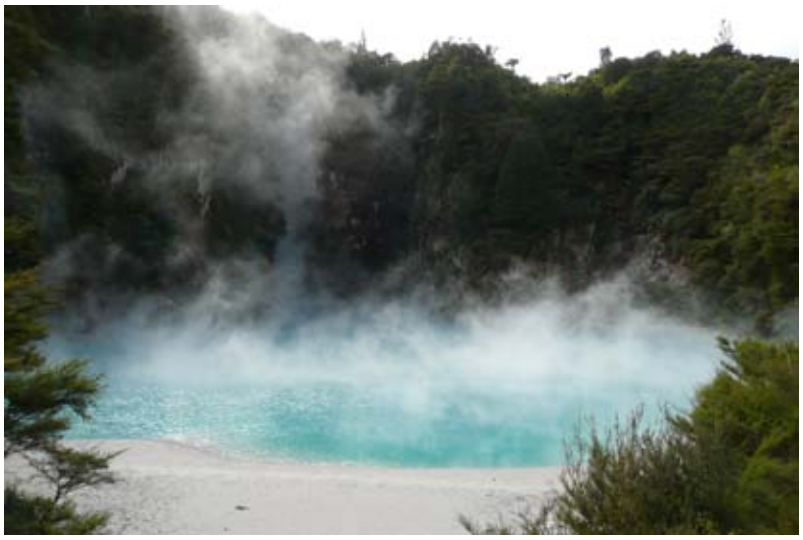
The student day included an excursion to Pohatu Geyser at Te Puia. Photo: Jane Gosden.

The main conference started on 29 August with fascinating plenary talks from Donald Strong and Alan Saunders. These two talks were to set a precedent that was aptly followed by the plenary speakers throughout the rest of the conference. I think the plenary speakers were a key strength of the conference, and this was due to the high quality of talks given on a very diverse range of subjects. On this note, I think that the conference organisers should be applauded for selecting such a great variety of high calibre plenary speakers. I particularly enjoyed Jan Wright's talk on her review of 1080 use in New Zealand and the importance of using a strong analytical framework; Marieke Lettink's presentation on whether NZ's native fauna could be farmed; and Tim Brodribb's talk on the evolution of stomata and leaf venation being alternative drivers of the major leaps in plant evolution that are usually attributed to changes in the reproductive systems of plants. Across all the plenary speakers and many of the contributed papers there was a clear emphasis on the importance of scientists communicating their findings in a straightforward manner to the general public.

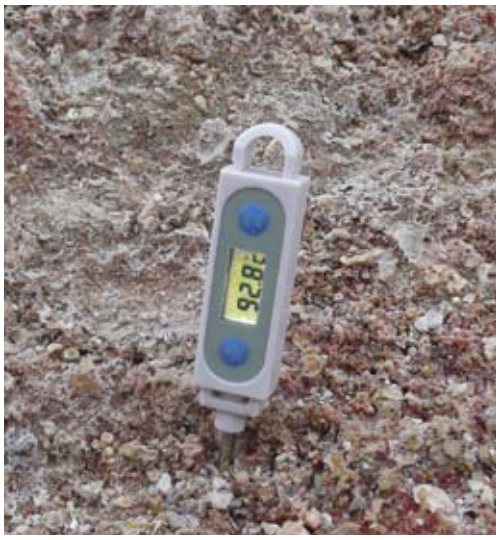
The diverse range of talks also extended to the contributed papers. I learnt a lot in very few days on everything from bats, wilding conifers, and orchids; to cultural perspectives and the RMA. Personal favourites were the talks on natural history, as a young ecologist it is fascinating to learn about the history of what are now protected places and the dedicated efforts of ecologists before me. Another obvious measure of the conference's success was the vast number of talks and posters presented by students. Around a third of the talks and about two thirds of the posters were by students. The opportunity to present work in front of a friendly audience is certainly something that I am very thankful for (no matter how nervous I may have been beforehand).

The conference dinner and 60th anniversary celebration of the NZES was a fantastic finale to three days of talks. Ruud Kleinpaste entertained the conference delegates with a lively speech on why we bother to practice ecology, research and conservation. He again emphasised the need to communicate our work clearly, which he did to great effect with some stunning pictures of bugs. It was fantastic to hear that familiar voice of radio and television enthusiastically demonstrate his deep passion for ecology. It should inspire us all to be proactive in getting our work out there in a way everyone can understand and enjoy.

On the final day of the conference I changed tack and visited Waimangu and Lake Tarawera. This was undoubtedly an excellent choice of field trip, as it was absolutely captivating to learn about the volcanic and geothermal systems at Waimangu (and see some special plants living in extreme conditions). Geologist Brad Scott gave an excellent tour of the Waimangu valley, explaining the cause and history of volcanism in the area. It was neat to experience a different expression of tectonic plate collisions, rather than the earthquakes I have become habituated to in Christchurch. My personal highlights of the trip were visiting the almost mystical Inferno Crater, and seeing a thermometer display a reading of 92.8°C in the ground beside us. Next time you're in Rotorua I would highly recommend a trip to Waimangu.



Inferno Crater on the field trip to Waimangu. Photo: Debra Wotton.



The Waimangu fieldtrip measured soil temperatures up to a whopping 92.8°C. Photo: Debra Wotton.

I think that the conference organisers deserve an enormous amount of praise for their hard work in putting together an excellent conference. So, thank you again to the Co-convenors Willie Shaw and Chris Bycroft, the scientific committee, the general organising committee, field trip leaders, and the student day organisers. It was a fantastic conference and I look forward to attending the 2012 NZES conference in Lincoln.

CONTRIBUTED ARTICLES

Calling all early career ecologists!

International Network for Next Generational Ecologists

By Tim Curran

Are you interested in what your peers in other parts of the world are doing? Are you keen to build ties with them to help solve environmental problems or conduct interesting ecological research? Are you looking for advice on how to have a career in ecology?

Then INNGE (the International Network for Next Generational Ecologists) can help you. This organisation of ecologists from different ecological societies across the world was formed recently to facilitate networks between early career ecologists. It aims to build international knowledge of ecological topics, encourage collaborations across countries and disciplines, foster local stewardship and sustainability efforts via global coordination, and communicate international career opportunities for early career ecologists (http://www.innge.net/). Tim Curran will liaise with the INNGE working group on behalf of the NZES, although if there is another early career ecologist who is interested in helping out that would be appreciated.

Tim has recently arrived in NZ from north Queensland, where he taught forest ecology for five years at the School for Field Studies, an American study abroad institution affiliated with Boston University. Undergraduates from universities across the US would spend a semester at the SFS field station nestled in World Heritage rainforest on the Atherton Tablelands. Prior to that Tim did his PhD at the University of New England, Armidale, testing hypotheses regarding the origins of dry rainforest in inland NSW.

He joined Lincoln University in June 2011 as a Lecturer in Ecology. His main research interests lie in the field of plant functional ecology and he is particularly interested in using plant functional traits to understand how plants respond to disturbance, especially extreme weather events such as drought, cyclones and frost, and applying these findings to restoration projects.

IUCN Update

By Wren Green

Much of the current focus for IUCN members and the NZ National Committee is our input into next year's major event—the 2012 World Conservation Congress in South Korea. In August, an important regional conservation forum was held in Brisbane for Oceania members to give their feedback on the draft. Most of the ten New Zealand members attended, including Landcare Research and the newest member—Antarctica New Zealand. It is particularly valuable to have Antarctica NZ within IUCN. IUCN's past strong interest in Antarctica has been waning, but New Zealand has been pushing hard for a reversal, especially given the growing environmental challenges and diverse threats from climate change.

I wasn't able to attend, but reports indicate there was robust discussion on the proposed IUCN Global Programme 2013–2016 with its five themes: valuing and conserving biodiversity; sharing nature's benefits fairly and equitably; nature-based solutions to climate change; managing ecosystems to improve food security; greening the economy. Should there be such an emphasis on food security? Some argued that is primarily an issue for developing countries, but if one factors in the collapse of pollinators, increasing floods, droughts and fires, a super-weed or two, and over-fished oceans, then I'm not so sure it is just a problem 'elsewhere'.

Staff from the regional office in Suva presented the draft Oceania Regional Programme which identifies programme areas that are relevant to us and the Pacific Island countries under the five themes. These are ambitious programmes, but the Regional office has already attracted millions in donor support for a diverse range of projects since it was established several years ago.

The NZ National Committee holds four meetings a year. Looking ahead, the Congress provides it with an important focus, just as the preparation of its major submission against prospecting and mining in national parks was last year. At the global level, focusing the diverse interests and priorities of the 1000 IUCN members to work within a One Programme approach is an ambitious task indeed, but the Secretariat continues to try.

We do have the benefit of a short and powerful IUCN Vision statement: "A just world that values and conserves nature." I'd like to finish with a quote on IUCN's unique role from the draft Oceania Regional Programme:
"Nature is our life support system. The diversity of life and nature must be conserved for development to be sustainable. A just world requires fundamental change in all dimensions of life and society, including politics and economics. IUCN's niche is to advance nature-based solutions both to halt the destruction of biodiversity and to sustain development for all and especially for the poorest people and communities who depend on nature for their livelihoods. A just world must guarantee equitable rights of access to biodiversity and the benefits of nature, across generations, economic and social classes, gender, and geopolitical lines."

Pattern and process of vegetation change (succession) in recent volcanic landscapes of New Zealand and Hawaii

The following abstract summarises the plenary talk given by Bruce Clarkson at the recent NZ Ecological Society Conference in Rotorua.

Bruce D. Clarkson (b.clarkson@waikato.ac.nz), Environmental Research Institute, University of Waikato, Private Bag 3105, Hamilton, New Zealand

Beverley R. Clarkson (bev@landcareresearch.co.nz), Landcare Research, Private Bag 3127, Hamilton, New Zealand

Volcanic activity (including lava flows, debris flows and tephra eruptions) is a regular feature of many landscapes of the North Island of New Zealand and the Hawaiian archipelago. We have been using a combination of the chronosequence and direct monitoring methodologies to research the pattern and process of vegetation change (succession) at our main study sites including Tarawera, Whakaari (White Island), Rangitoto Island, Ruapehu, Tongariro, Ngauruhoe, and Taranaki in New Zealand, and Mauna Loa in Hawaii over the last 20–35 years. Our results show a range of pattern and process relating to the frequency, intensity and scale of the volcanic disturbance and biogeographic setting. At one extreme are deterministic direct successions characterised by low to medium species richness and strong facilitation and aggregation mechanisms. At the other are probabilistic multiple pathway successions, characterised by medium to high species richness, and tolerance and inhibition as well as facilitation mechanisms. Full understanding of vegetation pattern and change on recent volcanic landscapes requires long-term (several human generations) experimental and observational studies using both direct monitoring of permanent plots as well as careful use of chronosequences.

A conference proceedings paper we have had published on this topic can be accessed at the University of Waikato Research Commons: http://hdl.handle.net/10289/5718

Mana BioBlitz 2011 based in Titahi Bay

By Astrid van Meeuwen-Dijkgraaf

The Mana BioBlitz took place over a one month period from 5 February to 6 March 2011. Normally a BioBlitz is held over a 24 hour period. However, when surveying species in the sea around NZ more time is needed to allow for weather uncertainties, for instance none of the planned dive surveys could take place the first weekend due to weather restrictions. Mana 2011 Bioblitz head office was in the old cablehouse near Titahi Bay Beach and the search area included part of Porirua peninsula, Mana Island and all of the sea in between.

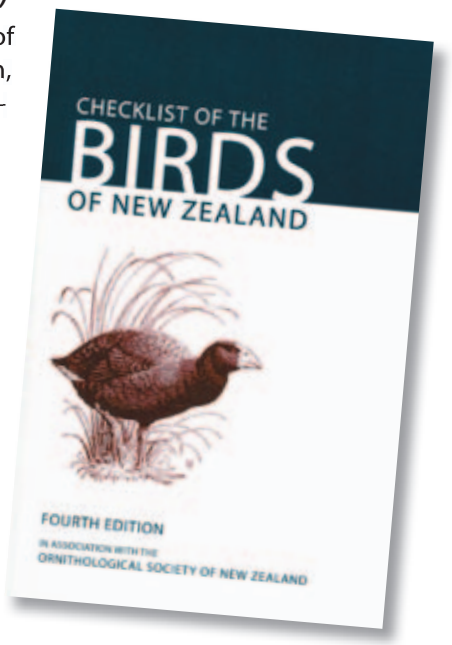
The total number of species found on both the land and sea was 1291, including 665 marine species and 626 land species. These are great numbers. The higher marine figure reflects the number of available specialists that were involved rather than the true biodiversity of these two main habitats. There are only a few entomologists in Wellington and our insect, spider and centipede pages have captured just a small snippet of these beasties that live in the Mana region. Several specimens are in the hands of experts and are still being identified. These details will be added to the database so the actual total number will be greater than indicated above. More information, area searched and species databases can be found at http://www.bioblitz.org.nz/home.

BOOK REVIEW

Checklist of the Birds of New Zealand 4th Edition

Te Papa Press in association with the Ornithological Society of New Zealand, 2010. RRP $100.

Reviewed by Mel Galbraith, Unitec Institute of Technology (Auckland)



The Checklist of the Birds of New Zealand can be considered as the 'official' list of every living and extinct species of birds in the New Zealand biogeographic region, including Norfolk and Macquarie Islands, and the Ross Dependency, Antarctica – 435 species in all.

Written by the Ornithological Society of New Zealand Checklist Committee led by Dr Brian Gill as convenor, this is the 4th edition of such a Checklist (previous editions 1990,1970,1953). The Committee followed two main principles in updating the Checklist. First, a 'cautious approach' was used to maintain a stable national nomenclature, avoiding the adoption of novel taxonomic changes that were not supported elsewhere. The second principle was the recognition that New Zealand birds are part of the wider Australasian biogeographic realm. Recent, Australian taxonomic decisions were used as a guide where appropriate, although not necessarily influencing outcomes where New Zealand endemics were concerned.

The content and format of this new edition of the Checklist have been extensively revised and reorganised compared to earlier editions. The key features are:

- birds of Norfolk and Macquarie Islands are included, now recognised as part of the New Zealand biogeographical region;
- current details of nomenclature, taxonomy, classification;
- status and distribution (current, historical and fossil);
- common and Maori names;
- bibliographic references;
- failed introductions.

A section of interest from an ecological perspective is the list of non-native species that have failed to establish. This list totals 83 species, and may generate debate on the possible ecological impacts that may have resulted from any of the introductions having a successful outcome!

The OSNZ Checklist Committee has produced a comprehensive publication that includes taxonomic advances since the last checklist, and one that considers New Zealand birds in the context of a larger Australasian avifauna. This book should be the constant companion for anyone referring to New Zealand birds in their publications.

NEWS FROM COUNCIL

LETTER TO MINISTER FOR CONSERVATION

The NZES Council agreed at their August meeting to write to the Minister for Conservation expressing concerns about the impact on NZ's biodiversity of impending job losses at the Department of Conservation. A copy of the letter is below.

Impending job losses of technical and scientific staff at Department of Conservation

Dear Minister,
New Zealand's biodiversity and natural estate is unlike anywhere else in the world. Through a combination of unusual biogeographic history and species guild presences and absences, New Zealand has developed a different ecology. Relict organisms survive that have become extinct elsewhere (e.g., tuatara), and plants and animals are adapted to avian predators and herbivores, rather than mammalian ones. The noted academic Jared Diamond once said "New Zealand is as close as we will get to the opportunity to study life on another planet." Therefore, conservation management in New Zealand cannot simply apply approaches taken overseas but must include strong technical and innovative capabilities to apply novel solutions to novel problems. We conclude that the existence and fostering of such technical capacity within the Department of Conservation is essential to its ability to manage the New Zealand conservation estate.

It is with great concern therefore, that the New Zealand Ecological Society has learnt of the impending job losses and downsizing at the Department of Conservation which we understand will significantly reduce their technical and scientific capacity. The Department of Conservation is world-renowned for their continued innovation and success in developing new cost-effective solutions to New Zealand's biodiversity problems. We think the job losses mooted in this current restructuring have the potential to irreplaceably excise an important part of the brains and soul of the organisation, and to severely limit its ability to adapt and grow in the future. We believe this damage will put at even greater risk the biodiversity of New Zealand, which provides the country with enormous values and is our responsibility to protect.

In your role as Minister of Conservation, the Society strongly encourages you to ensure that the technical and scientific capacity within the Department of Conservation is not degraded, and that sufficient resources are provided to enable it to carry out its important roles. The Department of Conservation is a comparatively small government agency, so that the change we are asking for is relatively small but would have a large positive impact on the one-third of New Zealand currently managed by this department.

Yours sincerely

Dr Bruce Burns
President, New Zealand Ecological Society

INTRODUCING THE NEW COUNCIL

At this year's AGM a number of new NZES Council members were appointed. All of the current NZES office holders are profiled below.

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.

Vice President

Fleur Maseyk

Fleur has worked for the Manawatu-Whanganui Regional Council for seven years now in a role that takes her from region-wide weed strategies, to science-driven policy development, to systematic conservation planning. Passionate about our wildlife and wild places, Fleur is also unapologetic in her conclusion that a great many of our big challenges sit around current land-use practices and how we turn this around to recognise that indigenous biodiversity can, and needs to, co-exist within our production landscapes.

Secretary

Shona Myers

Shona is a senior ecologist and manager of the Auckland office, Wildland Consultants Ltd. She has over 26 years experience in ecological survey, conservation of lowland ecosystems, and biodiversity policy development. Shona was previously employed as a senior Heritage manager with the Auckland Regional Council. Here she was responsible for management of conservation programmes on the 40,000ha regional park network, including open sanctuary programmes. She has also previously worked as a scientist with the Biological Resource Centre where she was involved in establishing the Protected Natural Areas Programme. Shona is a past president of the NZ Ecological Society, and is a current board member of the International Association for Ecology.

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

Bruce Burns

Bruce is a senior lecturer in plant ecology at the University of Auckland based at the Tamaki campus. His research interests include forest ecology, particularly the ecology of kauri forests (latterly in relation to the ecological impacts of kauri dieback), restoration ecology, and the occurrence and importance of positive feedbacks in determining vegetation structure and composition. Prior to joining the University of Auckland, Bruce worked for Landcare Research based in Hamilton. He was President of the Society from 2009–2011.

Councillors

Laura Young

Laura is a PhD student at the University of Canterbury investigating the role of animals in the dispersal of alpine plants. Prior to this, and consistent with her love of being in the South Island mountains, Laura completed a MSc on 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. This is Laura's second term on the council, where she will continue to work as the webmaster.

Deb Wilson

Deb is an ecologist at Landcare Research, interested in temporal and spatial population dynamics of vertebrates and their interactions with prey and predator populations. Her work presently focuses on rodents and lizards. Deb is an honorary 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 dynamics and predation on lemmings, and her MSc is from the University of Toronto.

Ellen Cieraad

Ellen is in the final stages of her PhD, investigating the processes forming New Zealand treelines. After her MSc on the history and ecology of ferns in New Zealand, Ellen worked at Landcare Research, with various projects including dryland ecosystem restoration, threatened environment classification and biodiversity indicators. From October, she will return to Landcare Research Lincoln, investigating carbon exchange in grassland and forest ecosystems.

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 dynamics of high-diversity shrublands in Western Australia.

Journal Editor

K.C. Burns

K.C. is a senior lecturer at Victoria University of Wellington. He received an undergraduate degree from the University of California, Berkeley in 1993 and a PhD from the University of California, Los Angeles in 2001. His research interests include animal behaviour, plant-animal interactions, the evolution of plant form and function, and island biology. K.C. has edited NZ Journal of Ecology since 2009.

Newsletter Editor

Debra Wotton

Debra is a FRST Postdoctoral Fellow at Landcare Research Lincoln, investigating causes of rarity in NZ's native plants. Debra's ecological career commenced with her MSc thesis at Victoria University investigating the role of geckos as seed dispersers. Her PhD at Canterbury University quantified the consequences of kereru loss for large-seeded tree recruitment. Before joining Landcare, Debra worked at DOC on topics ranging from ecosystem services to weed seed dispersal. Debra has edited the NZES Newsletter since October 2010.

PRESIDENT'S REPORT

Bruce Burns, President 2010–2011

I'm pleased to report on the activities and work of the New Zealand Ecological Society over the period between the 2010 conference held in Dunedin in November and this one in Rotorua. Over this short "year", the Society has continued its work to improve its professionalism and to provide increased member benefits, and I thank all those members who continue to support the Society and its mission to promote ecological science in New Zealand.

The Society's conference is always a highlight of the year and the Dunedin conference was no exception. The conference attracted more participants than any to date (>360) and was extremely well organised by Deb Wilson, Gretchen Brownstein, and Bill Lee. The conference theme "Biodiversity 2010 and beyond" was celebrated with some excellent symposia including: 'Ecology and conservation of indigenous grasslands', 'Molecular ecology of New Zealand biota', 'Biodiversity and production lands: the benefits and the risks', and 'Cultural perspectives on biodiversity research and management.' The numbers attending the Dunedin conference reinforced for me the current relevance and interest in ecology in New Zealand, and, afterwards, the need to maintain the momentum it provided.

The New Zealand Journal of Ecology continued to be produced to a high standard over the year and I thank KC Burns, Anne Austin and the editorial board of the New Zealand Journal of Ecology for their time and efforts. KC will provide his own report but of particular note is the publication of another special issue of the journal this year on 'Search and detection: theory and application in disease and wildlife management' edited by John Parkes. Thanks to John for putting this excellent special issue together based on a symposium held in Wellington in 2008. Academic publishing is becoming increasingly electronic and there is increasing pressure to join a 'stable' of a key publishing house. The incoming Council needs to keep up with these developments and make informed decisions which continue to promote New Zealand ecology in the best way to a global audience, including considering again working with a publishing house.

The Society newsletter continues to perform its task of communicating information on the profession of ecology to Society members. Thanks to Debra Wotton for her excellent work on the Society newsletter and all contributors. There have been three issues of the newsletter prepared (December 2010, and April and June 2011), and all were of a high quality. I would also like to recognise and thank Laura Young, Jon Sullivan and John Sawyer for their work in developing our website, re-launched last year, in keeping it up-to-date and adding new material. The new website is proving more flexible and useful than the previous version, and I look forward to further improvements.

Following the successful Intecol conference in 2009 held jointly with the Ecological Society of Australia, we have sought to build on this relationship with our trans-Tasman colleagues and are currently discussing a range of initiatives to build this link. These include members of each Society gaining discounts on joining the other Society, member rates being applied at the other Society's conference, supporting an interchange of award winners to present at conferences, and better communication between the two Societies of ecological news. We expect to agree on the details of these proposals soon which we think will bring benefits to members of both Societies.

During the year the Society made a submission on the proposed National Policy Statement on Biodiversity. Although our submission pointed out several details that we think could be improved with this proposed policy, our main motivation was to support the existence of such a policy. Further developments or decisions on this policy have not yet been released, and the Society needs to keep a watching brief on this issue. I feel that the political situation engendered by the current government substantially undervalues biodiversity and the environment, hugely prioritising

short-term developmental gain at the expense of our long-term prospects. I urge the Society to increase its presence and voice in this arena, pointing out the scientific information currently available and needed in the future to support effective environmental and biodiversity management. I am particularly concerned about the continuing downsizing and loss of technical capacity within the Department of Conservation that is occurring, involving some of our members, and the implications of irreplaceably removing such an important part of the brains and soul of this organisation. This is surely a time for the Society to speak up on these and other issues.

I would like to recognise and thank the efforts of our Council who continue to effectively manage Society business, and have a laugh along the way. Thanks to Ruth Guthrie as Secretary, Clayson Howell as Treasurer, Mel Galbraith as Vice-President, Shona Myers as Immediate Past President, and John Sawyer, Laura Young, Chris Bycroft, and Fleur Maseyk as Councillors. I would also like to thank Susan Sheppard as our administrative secretary for her efforts managing the day-to-day business of the Society, making it happen even during and after the Christchurch earthquakes. In this report, I would particularly like to thank John, Chris and Ruth, as these three are leaving the Council at this AGM. All three of them have been on the Council for many years: John since 2003, Ruth since 2004, and Chris since 2007. They have all contributed enormously to the continued success of the Society and we are in much debt to their hard-work and wisdom. Thanks to these three once again and we wish them well for their future, and continued association with the Society.

TREASURER'S REPORT

Clayson Howell, Treasurer

Shown below are statements of financial performance and financial position for the New Zealand Ecological Society for the 12 month financial year ended 31 December 2010 (values in this report are GST exclusive).

The society now has two trusts, (Kauri Fund for Ecological Science and Research, and the Nigel Barlow Trust). Accounts for these trusts are presented here with the general NZES accounts. All accounts are audited together.

Note. While I believe these to provide an accurate reflection of the NZES finances, they have not yet been finally approved by the auditor.

Financial performance

The Society made a Profit of $31,737.52 for the 12 months ended 31 December 2010.
Conference income comprises:
Intecol 10 profit.
Sponsorship of 2010 conference paid to NZES
Registrations for 2010 conference mistakenly paid to NZES.
Conference expenses:
Sponsorship of 2010 conference paid to NZES
Registrations for 2010 conference mistakenly paid to NZES.
Journal subscriptions:
Strangely appear to be up and down. Auditor checking 2009 figures, confident that 2010 is accurate.

Awards are less than 2009 which included the Brisbane travel grants. However, in 2010 the Awards now include Kauri Seed Grants, in addition to Conference awards and Student Travel Grants.

Financial position

The total equity at 31 December 2010 is now at $ 218,863.13
The day to day accounts remain with the National Bank. We retain the Westpac account to process credit card payments.

NEW ZEALAND ECOLOGICAL SOCIETY (Inc)
Statement of Financial Performance for the twelve months ended 31 December 2010

Income	**2010**	**2009**
Membership	33,852.28	30,069.80
Interest	2,855.46	6,179.86
Journal Sponsorship	7,111.11	-
Journal subscriptions	7,695.66	13,004.70
Page Charges	5,976.29	8284.14
Conference	75,741.59	11,137.36
Sundry income	675.35	561.38
Donation to Kauri fund	425.25	120.00
Total	**134,332.99**	**69,357.24**
Expenditure		
Journal production	40,565.51	30,252.70
Newsletters	3,226.03	1,247.21
Secretariat	9,018.64	9,011.28
Subscriptions	731.91	1,140.00
Council expenses	2,043.47	2,834.53
Administration	2,170.05	2,021.21
Audit	1,000.00	2,400.00
Awards	12,095.00	19,339.51
Web site	32.95	32.95
Tui time		59.95
Conference	23,041.91	-
Logo redesign		5,030.00
Website re-development	8,670.00	9,325.50
Total	**102,595.47**	**87,302.12**
Surplus/ (Deficit)	31,737.52	(17,944.88)

Statement of Movements in equity as at 31 December 2010

	2010	2009
Equity at start of year	**187,125.61**	**223,241.75**
Surplus		
Net surplus/(deficit) for the year	**31,737.52**	(17,944.88)
Equity at end of year	**218,863.13**	**187,125.61**

Statement of Financial Position as at 31 December 2010

	2010		**2009**	
Current Assets				
NZES Cheque acc	19,861.71		3,144.79	
NZES Savings	73,125.57		83,686.03	
Westpac Cheque	11,778.95		668.50	
Barlow Fund	57,326.63		55,984.76	
Kauri Fund	64,978.75		61,654.15	
Journal Stock	150.00		150.00	
Accounts receivable				
Total Assets		**227,071.61**		**205,288.23**
Current Liabilities				
GST	2,339.54		5,589.00	
Accounts Payable	5868.94		12,572.62	
Total Liabilities		**8,208.48**		**18,162.62**
TOTAL Equity		**218,863.13**		**187,125.61**

MEMBERSHIP REPORT

Shona Myers, Secretary

As at 18 August 2011 the total membership of the New Zealand Ecological Society is 664. This represents a small decrease in membership since 2010. This decrease is across all categories.

The total count of members includes those in arrears for this year with just over 65% of subscriptions paid at the time these statistics were generated. Journal subscriptions currently total 95 for 2011 (*cf.* 106 in 2010), which includes 17 complimentary subscriptions.

Membership of the New Zealand Ecological Society as at 18 August 2011 (data from May 2010 in brackets provided as a comparison)

Category	Paid	Arrears this year	Total
Full	297 (342)	126 (73)	423 (415)
Joint	40 (44)	10 (5)	50 (49)
Unwaged	85 (129)	72 (48)	157 (177)
Overseas*	11 (18)	11 (6)	19 (24)
Honorary	11 (10)		11 (10)
Newsletter only	2 (10)	1 (0)	3
Total	435 (553)	219 32)	664 (685)

* Includes waged, unwaged and joint overseas subscriptions

JOURNAL REPORT

K.C. Burns, Journal Editor

The 2010 Impact Factor is 1.29, which is up from last year and indicates that the journal continues to be in good standing (Austral Ecology is 1.83 and the Royal Society journals average around 0.8). I'm pretty sure that the effect of Feathers to Fur has yet to be realised, so hopefully it will hold steady (or improve).

There will be three issues in volume 36—two regular issues (1 & 3) and a special issue, 36(2) edited by MacLeod and Tompkins. Issues 1 & 2 will be sent out jointly in the same envelope to save a bit on postage.

The first issue of 2012, 36(1), is nearly full with 1 review, 7 articles and 1 Forum paper. We're waiting for a one or two more papers to be accepted before we go to press.

Submissions are holding steady. 31 manuscripts have been received so far in 2011. 19 are in review, 5 were rejected without review, 4 were rejected with review and 3 have been accepted. These numbers are essentially identical to the past few years.

Jacqueline Beggs has stepped down from the editorial board. Craig Barnett, Hannah Buckley, Jo Hoare & Wayne Linklater have been added to the board. I have taken on a managing editor, Iggy Menzies, who has been an enormous help in maintaining the Journal's books.

ECOTONES – NEW ECOLOGICAL RESEARCH

Bruce Burns

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

Potential for improving pasture to forest restoration through mycorrhizae

There is increasing interest and activity in New Zealand in converting abandoned agricultural land to indigenous forest. This is an expensive activity, however, so any techniques which could improve success would be valuable. Williams et al. (2011) have recently conducted a glasshouse experiment to see whether Hall's totara seedlings grew faster and were more competitive against a common grass species when inoculated with spores from ex-agricultural pastoral soil than those inoculated with spores from remnant forest. They found that the seedlings with the pastoral mycorrhizae grew significantly slower and were less competitive than seedlings with forest inoculum. These results suggest that restoration of abandoned pasture to forest could be substantially improved using seedlings inoculated with appropriate mycorrhizae, and that further research is strongly warranted.

Williams A, Ridgway HJ, Norton DA 2011. Growth and competitiveness of the New Zealand tree species *Podocarpus cunninghamii* is reduced by ex-agricultural AMF but enhanced by forest AMF. *Soil Biology and Biochemistry 43:* 338–345.

Non-marine turtles lived in New Zealand and survived Oligocene drowning.
Fossils of a large probably terrestrial turtle have recently been found in Early Miocene sediments (16-19 million years ago) at St Bathans in central Otago (Worthy et al. 2011). Comparison with other fossils in the Australian Museum in Sydney suggests the fossils belong to a type of meiolaniid turtle. These now-extinct turtles previously known from South Australia and the southwest Pacific were bizarre with cranial horns or frills and a tail bearing a heavily ossified club. The fossils discovered suggest individuals with an approximately 0.5 m long carapace. Recently, several authors have argued that all terrestrial life in New Zealand would have been exterminated by an Oligocene (34-25 million years ago) submergence event. The presence of this terrestrial turtle in New Zealand at the time indicated by the age of the sediments it was found in, seems evidence to suggest that at least some parts of New Zealand remained above the waves and a relict Gondwanan biota survived.

Worthy TH, Tennyson AJD, Hand SJ, Godthelp H, Scofield RP 2011. Terrestrial turtle fossils from New Zealand refloat moa's ark. *Copeia 2011:*72–76.

Chytridiomycosis absent from surveyed Hochstetter frog populations
Chytrid fungus has been linked to declines in amphibian populations worldwide, including Archey's frog in New Zealand, and so it potentially poses a threat to all species of New Zealand endemic frogs. Recently Moreno et al. (2011) carried out a survey of 2 Hochstetter's frog populations (Waitakere Ranges and Great Barrier Island) to establish the presence and disease prevalence of chytridiomycosis. They took more than 60 skin swab samples from each of the 2 populations, and assessed them for the presence of chytrid fungus. Somewhat surprisingly none of the samples tested positive for the fungus and no frogs were found that seemed unhealthy. As well as concluding that both populations were free of chytridiomycosis, Moreno et al. (2011) also conclude that Hochstetter's frog is resilient or immune to the disease. Further, if this is confirmed with further experiments, they suggest that elucidating the mechanism of immunity may be useful in amphibian conservation of more susceptible species elsewhere.

Moreno V, Aguayob CA, Brunton DH 2011. A survey for the amphibian chytrid fungus *Batrachochytrium dendrobatidis* in New Zealand's endemic Hochstetter's frog (*Leiopelma hochstetteri*). *New Zealand Journal of Zoology 38:* 181–184.

Bryophytes have allelopathic effects on tree seedlings
Mosses and liverworts are common in most lowland New Zealand forest ecosystems, and can cover up to 90% of the ground surface in thick mats. Because of their abundance, they could be particularly important in these ecosystems in determining the quality of forest floor microsites for seed germination and seedling establishment of different tree species. Michel et al. (2011) report on experiments to test whether water-soluble leachates from different bryophytes have allelochemical effects on the germination and early growth of native tree species. Their results show that leachates from bryophytes can inhibit germination at relatively high concentrations, and either inhibited or promoted root growth of different tree species. They also showed that the frequency and composition of tree seedlings in bryophyte mats in the forest were consistent with the allelopathic effects shown in the laboratory. Their work suggests that dense bryophyte mats in forests could potentially influence the vascular species composition of forests in New Zealand.

Michel P, Burritt DJ, Lee WG 2011. Bryophytes display allelopathic interactions with tree species in native forest ecosystems. *Oikos 120:* 1272–1280.

Hunt-success data reveals long-term decline in muttonbird numbers
Rakiura Maori have traditionally harvested muttonbird (titi; sooty shearwater; *Puffinus griseus*) from 35 small islands off southern New Zealand, but have perceived declining hunting success over time, suggesting lower numbers of breeding birds. Clucas (2011) has recently published a fascinating analysis of data from 8 catch diaries supplied by Rakiura Maori that record hunting success over the last 67 years, and looked to see whether the data indicate long-term changes in muttonbird populations. Her results suggest an approximately 2% decline in annual hunt success for muttonbird chicks over this time suggesting population decline (though with substantial interannual variation), and that a major knockdown event probably occurred in the late 1980s and early 1990s, from which the population is still recovering. It is difficult to establish whether this population decline is influenced by large-scale depletion of fish stocks by overfishing or climate-driven changes in ocean ecosystems, or a combination of both. Nevertheless, these results do provide probable evidence of cumulative impacts of environmental change on a top-trophic-level predator which is highly concerning.

Clucas R 2011. Long-term population trends of Sooty Shearwater (*Puffinus griseus*) revealed by hunt success. *Ecological Applications 21*: 1308-1326.

RECENT STUDENT RESEARCH

K.C.Burns

VICTORIA UNIVERSITY OF WELLINGTON ECOLOGY THESES 2010

M.Sc.

Milena Palka (2010) Stress resistance in an extreme environment: lessons learnt from a symbiotic sea anemone.

Michael Doherty (2010) Ocean acidification: comparative impacts on the photophysiology of a temperate symbiotic sea anemone and a tropical coral.

Shiree Palmer (2010) The ecological role of a mobile omnivore (Patirella regularis) within intertidal cobble fields.

Danilo Coelho De Almeida (2010) Spatial patterns in plant diversity.
Danilo quantified spatial variation in the diversity and abundance of common trees in Otari-Wilton's Bush. Results showed that tree distributions could be predicted by the interplay between plant traits and small-scale variation in environmental conditions.

Hilary Cresko (2010) Male-biased sex ratios in New Zealand bellbird (*Anthornis melanura*).
Hilary's thesis investigated mal-biased sex ratios in the Karori Wildlife Sanctuary (KWS). She found no support for the hypothesis that females are less abundant because they are more likely than males to disperse outside of the predator-proof fence in winter.

Melanie Duncan (2010) Sexual selection and the human breast morphology.

Joanna Wilson (2010) Resource competition on North Brother Island — conservation implications for tuatara (*Sphenodon guntheri*).
Joanna investigated changes in demography of a tuatara and gecko population over time. She found that population viability of the tuatara population will likely be affected by a further bias in sex ratio and reduction in condition of individuals; patterns that were not apparent in the gecko population.

Thomas Allan (2010) Biology of *Powelliphanta augusta*.

Samantha Jamieson (2010) Sand dune restoration in New Zealand: methods, motives and monitoring.
Sam discovered that the main motivations for sand restoration by community groups were fore-dune stabilization and conservation of vegetation. Replacing introduced marram grass with native plants generally reduced overall vegetation cover and biomass in the short-term leading to a reduction in the abundance and diversity of fauna (invertebrates, reptiles and introduced pests). It is recommended that marram be removed in several stages to provide continuity of habitat availability while the restored dune matures, and that further monitoring be implemented where feasible.

Ph.D.

Heidy Kikillus (2010) Exotic reptiles: are they really a threat to New Zealand?
Heidy's research examined the risk that exotic pets pose to the economy and biodiversity of New Zealand should they escape into the wild. Using physiological data and climate-matching models, she found that eight species could survive in the wild and three species could potentially breed in warmer microclimates. Her research also revealed there was limited potential for the transfer of novel diseases to native fauna and humans.

Shane Geange (2010) The effects of diffuse and diverse biological interactions on coral reef fish community structure.

Grant Hopkins (2010) Assessment and management of risks from biofouling.

Eileen Koh (2010) Phototrophic bacteria in Antarctic sea ice.
Eileen has demonstrated for the first time the presence of light harvesting bacteria in sea ice.

Erasmo Macaya Horta (2010) Phylogeny, connectivity and dispersal patterns of the giant kelp *Macrocystis* spp. in the South Hemisphere.

Alejandro Perez Matus (2010) Effects of macroalgal habitats on the community and population structure of temperate reef fishes.
Ale examined the causes of spatial variation in reef fish assemblages using both experimental approaches and surveys conducted across a broad range of scales (including sites in Chile and Australia). Ale now has an academic appointment at the University of Valparaiso in Chile.

Anna Smith (2010) Temperate reef fish and their interactions with macroalgae.
Anna used a combination of field experiments and observational studies to explore the relationships between reef fish populations and habitat comprised of macroalgae. Her work illustrates important effects that transcend successive life stages of individuals. Anna currently works at the new Zealand Ministry of Fisheries.

Gareth Williams (2010) The prevalence and ecological impacts of coral disease at Palmyra Atoll.

Catherine Duthie (2010) Competition between ants and wasps in a beech forest.

Nik Fadzly Rosely (2010) Visual signalling in plant-animal interactions.
This thesis tested whether the colours of leaves and fruits of selected New Zealand plants have evolved to repel and attract animal predators and mutualists, respectively.

Gesine Pufal (2010) Evolution of hygrochastic fruit dehiscence.

Wan Fatma Wan Musthapa (2010) The influence of mosquito predators on population dynamics of endemic and exotic mosquitoes.

Laura Wicks (2010) Persistence of corals in marginal habitats the role of the environment, and symbiont diversity and ecophysiology.

Ashley Coutts (2010) The nature, extent and survivorship of biofouling organisms at different hull locations on various vessel types.

THE NOTICEBOARD

Botany Lecturer Vacancy (Fixed-term), Otago University

Join our team of plant researchers and contribute to teaching in the Botany Degree Programme at undergraduate and postgraduate levels. We have research strengths from the cell to the ecosystem, laboratory- and field-based, and work in environments from the mountains to the sea. The successful applicant will have the opportunity to work with experts in biotechnology, ecology, evolution, genetics, physiology, mycology, phycology and virology.

Applications are welcome from those with a botanical research background (especially with quantitative skills) who could teach into some of our existing courses, but particularly from amongst BIOL 113 Biology of Plants, ECOL 111 Ecology and Conservation of Diversity, BTNY 322 Mycology and Plant Pathology, BTNY 326 Plant Diversity and Evolution, and BTNY 467 New Zealand Plant Ecology and Evolution.

The position will be offered as a fixed-term (9-month) position at the level of Lecturer. The successful candidate is expected to take up duties in mid-February 2012. The minimum qualification is a PhD degree. The Department is committed to diversity in staffing, and would consider job sharing arrangements or applications from those seeking a research and teaching sabbatical. Further information may be obtained from http://www.otago.ac.nz/botany

Specific enquiries may be directed to Professor Kath Dickinson, Head of Botany Department (Ph: 03 479 9059). **Applications close Monday 3 October 2011**.

https://otago.taleo.net/careersection/2/jobdetail.ftl?lang=en&job=1100479

PII Resource Kit for Rodent and Cat Eradication

The PII team

The Pacific Invasives Initiative (PII) team has launched their **new on-line Resource Kit for Rodent and Cat Eradication**. The PII Resource Kit can be found at: www.pacificinvasivesinitiative.org/rk.

The PII Resource Kit provides project managers with a systematic approach to planning and implementing rodent and cat eradication projects on islands in the Pacific. While focusing on rodents and cats and targeted at the Pacific, the process and many of the supporting tools are readily applicable to eradication of other invasive species and islands in other regions.

The need for the Resource Kit came from PII's experience working on invasive species capacity development with Pacific agencies. Because invasive species management is a relatively new tool for island restoration in the Pacific, a common constraint for agencies was access to an authoritative and consistent process and a source of information to effectively address the complexity of invasive species management.

To address this need PII, in collaboration with world leading eradication experts, developed a stepwise process and supporting tools to provide project managers with access to current eradication best practice. Use of the Resource Kit will give Pacific agencies the ability to embark on their invasive species management projects with greater confidence of achieving their desired island restoration goals.

The Resource Kit was designed by combining PII's experience working with Pacific agencies with existing eradication best practice. PII have actively involved eradication experts and potential Pacific users throughout the development of the Resource Kit to ensure the content is both accurate and relevant.

PII has also developed an accompanying training course on 'How to eradicate Rodent and Cats on Islands'. The purpose of the course is to provide project managers with the knowledge and skills to carry out eradication projects and maximise the benefits of using the Resource Kit. For more information on the training course, please contact PII at: PII@auckland.ac.nz

The Resource Kit is freely available on the web. A CD-ROM version can be obtained from PII on request (PII@auckland.ac.nz).

Kereru News

Astrid van Meeuwen-Dijkgraaf

For those people interested in all things kereru - kukupa - kuku a newsletter summarising news, research, websites and observations is emailed out three to four times per year. The newsletter is sent out irregularly depending on workload and how much news has been gleaned. If you are interested in receiving the upcoming September newsletter then please email astrid@wildlands.co.nz and ask to be added to the list.

Postdoc free NZ: Do we really want to go there?

Members may be aware of a letter signed by over 500 researchers raising concerns about the lack of Postdoc funding in NZ, which was sent to the Minister for Research Science and Technology, the Royal Society, and the Prime Minister's Science Advisor. The current funding gap forces many PhD graduates (whose education has been paid for largely by NZ taxpayers) to leave the country. The letter has prompted the Ministry of Science and Innovation to review postdoc support in NZ. The letter signatories have created a Facebook page to encourage discussion about postdoctoral opportunities in NZ: http://www.facebook.com/#!/pages/Postdoc-Free-NZ-do-we-really-want-to-go-there/256456734394215

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".

UPCOMING MEETINGS

BIOLIEF 2011—2nd World Conf. on Biological Invasions and Ecosystem Functioning

21–24 Nov 2011
Mar del Plata, Argentina
http://www.grieta.org.ar/biolief/

Ecological Society of Australia 2011 Annual Conference

21–25 November 2011
Wrest Point, Hobart, Tasmania

10th Invertebrate Biodiversity & Conservation Conf. Melbourne, Vic.

4–10 Dec 2011
http://www.ibcc2008.org/

25th International Congress for Conservation Biology (ICCB2011)

Society for Conservation Biology
4–10 December 2011
Sky Tower, Auckland
http://www.conbio.org

19th International Congress of Biometeorology (ICB2011)

5–9 December 2011
University of Auckland, Auckland
Conference theme: Climate and Society
http://www.icb2011.com

5th National Wetland Restoration Symposium

21–23 March 2012
Ascot Park Hotel, Invercargill
This symposium is being organised by the Southland Wetlands Working Party in conjunction with the National Wetland Trust.
http://www.wetlandtrust.org.nz

MMM3: Meeting on Mangrove ecology, functioning and management.

2–6 July 2012
Galle, Sri Lanka
http://www.vub.ac.be/APNA/greendyke/MMM3/

International Wildlife Management Congress IV

9–12 July 2012
Durban, South Africa
www.iwmc2012.org

7th World Congress of Herpetology

8–14 August 2012
Vancouver, Canada
http://www.worldcongressofherpetology.org

INTECOL 11 Congress

18–23 August 2013
London, UK
Theme: Ecology—Into the Next 100 Years
http://www.intecol2013.org/

Office Holders of the New Zealand Ecological Society 2011/2012

(Effective from 30 August 2011)

In the first instance, please send postal or e-mail correspondence to:

Secretariat (society office – Susan Sheppard)
NZ Ecological Society Secretariat
PO Box 5075
Papanui
CHRISTCHURCH 8542
Physical Address:
46 Genesis Drive
Edendale, RD 1
CHRISTCHURCH 7671
P: 64 3 318 1056
F: 64 3 318 1061
E: nzecosoc@paradise.net.nz
W: www.nzes.org.nz

President
Mel Galbraith
School of Natural Sciences
Unitec New Zealand
Private Bag 92025,
Carrington Road, Mt Albert
AUCKLAND
P: 64 9 815 4321 ex 7296
M: 64 25 6948139
E: mgalbraith@unitec.ac.nz

Vice President
Fleur Maseyk
Horizons Regional Council
Private Bag 11-025
Manawatu Mail Centre
PALMERSTON NORTH
P: 64 6 952 2903
M: 64 21 2277 188
E: fleur.maseyk@horizons.govt.nz

Secretary
Shona Myers
Wildland Consultants
PO Box 132-040
Sylvia Park
AUCKLAND 1644
P: 64 9 276 7540
F: 64 9 276 7541
M: 64 21 325 272
E: shona.myers@wildlands.co.nz

Treasurer
Clayson Howell
Department of Conservation
PO Box 10-420,
WELLINGTON
P: 64 4 471 3113
M: 64 21 973 181
E: chowell@doc.govt.nz

Councillors (4)
Bruce Burns *(Past President)*
School of Biological Sciences
University of Auckland
Private Bag 92019
AUCKLAND
P: 64 9 373 7599 ex 83135
E: b.burns@auckland.ac.nz

Laura Young
School of Biological Sciences
University of Canterbury
Private Bag 4800
CHRISTCHURCH
P: 64 3 364 2987 ext. 7048
M: 64 21 668 084
E: laura.young@pg.canterbury.ac.nz

Ellen Cieraad
Landcare Research
PO Box 40
LINCOLN 7640
P: 64 3 321 9827
E: cieraade@landcareresearch.co.nz

George Perry
School of Environment & School of Biological Sciences
University of Auckland
Private Bag 92019
AUCKLAND
E: george.perry@auckland.ac.nz

Deb Wilson
Landcare Research
Private Bag 1930
Dunedin 9054
P: 64 3 470 7212
E: wilsond@landcareresearch.co.nz

Journal scientific editor
K.C. Burns
Victoria University of Wellington
School of Biological Sciences
PO Box 600
Wellington 6140
P: 64 4 463 6873
E: Kevin.Burns@vuw.ac.nz

Journal technical editors
Anne Austin
Landcare Research
Private Bag 11052
Manawatu Mail Centre
PALMERSTON NORTH 4442
E: techeditor@nzes.org.nz
E: austina@landcareresearch.co.nz

with assistance from:
Christine Bezar
Landcare Research
PO Box 69
LINCOLN 7640

Newsletter editor
Debra Wotton
Landcare Research
PO Box 40
LINCOLN 7640
P: 64 3 321 9605
E: newsletter@nzes.org.nz

Webmaster
Laura Young
School of Biological Sciences
University of Canterbury
Private Bag 4800
CHRISTCHURCH
P: 03 364 2987 ex 7048
M: 021 668 084
E: laura.young@nzes.org.nz

This Newsletter was produced by Debra Wotton and Jeremy Rolfe.

Contributions for the newsletter—news, views, letters, cartoons, etc.—are welcomed. Please e-mail to editor (newsletter@nzes.org.nz) with document attached (Word formatted for Windows) or post. If posting, please send articles for the newsletter on CD. Please do not use complex formatting; capital letters, italics, bold, and hard returns only, no spacing between paragraphs. Send CD to:

Debra Wotton
Landcare Research
P.O. Box 40, Lincoln 7640

Next deadline for the newsletter is Monday 12 December 2011.

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

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 (2011)

Full (receive journal and newsletter) .....$80* per annum

Unwaged (with journal) .....$45* 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.

Joint.....$80* per annum
Joint members get one copy of the journal and newsletter to one address.

Overseas Full ..... $105* per annum

School.....$12 per annum

Institutional (New Zealand) ..... $NZ120* per annum (incl. GST and postage)

Institutional (Australia & South Pacific) ..... $NZ130* per annum (incl. GST and postage)

Institutional (Rest of World)..... $US80* 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