NEW ZEALAND ECOLOGICAL SOCIETY

Newsletter

Published by the New Zealand Ecological Society (Inc.),
P.O. Box 5075, Papanui, Christchurch 8542

No. 146, December 2013

FROM THE EDITOR

As 2013 draws to a close, it's time to reflect on the year that's been and what lies ahead. There have been several milestones for the NZ Ecological Society, including commencing redevelopment of our website, hosting the successful EcoTas13 conference with our Australian colleagues, and registration of the Society as a charitable organisation. We are now eligible for tax exemptions, and tax credits can be claimed for donations of $5 or more to the Society. We also have a Facebook page that you can use and 'like'.

Congratulations to Janet Wilmshurst, this year's recipient of the *Te Tohu Taiao Award* for ecological excellence. Also to Dave Kelly, who was recently awarded the Hutton Medal for plant science.

After more than three years editing the NZ Ecological Society Newsletter, I'm looking for someone to take over the role (see Noticeboard p. 19). If you are interested or would like to know more, please email me. I look forward to continuing to serve the Society in my new role as a Councillor. Wishing you all a relaxing and enjoyable festive season.

ILLUSTRATE ECOLOGY

A tramper standing on an almost solid Melicytus alpinus *shrub, near Cass, Canterbury in 1995. The plant is thought to be over 100 years old. Hares arrived in the alpine valleys of Canterbury in 1896, and hedge these plants every year, but the plants survive. However, several endangered plant species in the Canterbury high country (e.g.* Hebe armstrongii *and* Ranunculus paucifolius*) are vulnerable to hare browsing (Photo: John Flux).*

INSIDE:

Newsletter Editor: Debra Wotton, Moa's Ark Research. E-mail: newsletter@nzes.org.nz
Layout and design: Jeremy Rolfe

The deadline for submissions for the next issue of this newsletter is ***Friday 7 March 2014****.*

NZES TE TOHU TAIAO AWARD 2013

Congratulations to Janet Wilmshurst from Landcare Research, the 2013 recipient of the NZ Ecological Society Te Tohu Taiao Award for ecological excellence.

Nominated by Dave Kelly and Matt McGlone

Janet Wilmshurst is New Zealand's leading researcher in the field of palaeoecology. Her sterling research output has changed our understanding of the immediate pre-human state of New Zealand and Pacific island environments, including climatic change, Polynesian settlement of New Zealand and the Pacific and subsequent human impacts on the environment. She has made major contributions to technique development, to our understanding of New Zealand environmental change over the past 18 000 years, and has resolved long-standing controversies surrounding the settlement of New Zealand and the Pacific. As well, she has applied this expertise to practical ecological problems such as restoration of indigenous ecosystems. In all these ways, she has made an intellectual contribution that has widespread implications within New Zealand and overseas.

Janet Wilmshurst, 2013 recipient of the Te Tohu Taiao Award.

Proof of her impact comes not only from an examination of the novelty of the ideas, but from objective metrics. She has been a highly productive researcher (64 peer-reviewed ISI publications), and is very well cited (H-index 22, Scopus). She has published in top international journals both within the field of paleoecology (*Holocene*, *Quaternary Science Reviews*, *Journal of Quaternary Research*) and in top interdisciplinary journals (*PNAS*, *Nature Geoscience*). She has been a PI on 4 Marsden Grants, an AI on a further 3 Marsdens, collaborator on at least 5 international programmes, and a key researcher and leader in Landcare Research programmes, including Outcome leader in the Ecosystem Processes OBI. She is an Honorary Fellow of Anthropology at the University of Otago and has just been appointed to a part-time professorial position at the University of Auckland. Internationally, she is a member of the Scientific Steering Committee of the Past Global Changes Project—the key palaeo component of the International Geosphere-Biosphere Programme.

She has included tangata whenua at key points in her research programme and has supported and been supported by the Maori community. Finally, she has been actively engaged in mentoring and assisting students and has been a supervisor or co-supervisor of 6 post-doctoral fellows, 5 PhD students and 7 MSc students. She has built up a palaeoenvironment research hub at Lincoln including a soon to be commissioned ancient DNA laboratory.

Below we provide further detail on her scientific achievements in four noteworthy areas, and identify six important papers with some explanation about each.

Settlement of New Zealand and the Pacific

Beginning with her work on analysing radiocarbon dates for Maori settlement (McGlone & Wilmshurst 1999 *Quaternary Int*), Janet has thoroughly explored the important questions of exactly when Maori arrived in New Zealand, and when did their ancestors first venture into the eastern Pacific. Her sequence of publications on this issue elegantly applied novel methods to resolve this question and have settled it beyond all reasonable doubt. Her work also resulted in new models for how humans settle and transform pristine environments (Wilmshurst et al 2008 *PNAS*; Prebble & Wilmshurst 2009 *Biol Invasions*; Rieth et al 2011 *J Arch Sci*; Wilmshurst et al 2011 *PNAS*).

Understanding environmental change

Beginning with her work on the now famous Tutira lake sequence in lowland Hawke's Bay (Wilmshurst 1997 *NZJ Botany*) Janet has explored the effects of volcanic eruptions, fire and climate change on New Zealand ecosystems. We now understand far better the widespread effects of volcanic ashfall (Wilmshurst & McGlone 1996 *Holocene*), the degree to which pre-human fire modified New Zealand forests (Perry et al 2012 *Global Ecol Biogeog*) and the long trends of temperature and rainfall change on the New Zealand mainland and subantarctic islands (McGlone et al 2010 *Nature Geosci*).

Innovative new techniques

Starting out with the conventional palaeoecological tools of pollen and spore and sediment analysis and radiocarbon dating, she has greatly enriched the field through expanding the range of organisms and techniques employed. She pioneered testate amoebae analysis in New Zealand, thus introducing an important new tool for charting soil moisture changes with time (Wilmshurst Wiser & Charman 2003 *Holocene*), introduced the analysis of gnawed seeds as a proxy for rat presence (Wilmshurst & Highham 2004 *Holocene*), and *Sporomiella* coprophilic fungi analysis for detection of herbivore abundance (Wood et al 2011 *Quaternary Sci Rev*). Her laboratory began the quantification of microscopic charcoal in lake and peat sediments, and has published widely with international collaborators in an NSF grant on fire and its past influence on the New Zealand environment (McWethy, Whitlock, Wilmshurst, McGlone & Li X. 2009. *The Holocene;* Perry, Wilmshurst, McGlone, McWethy, & Whitlock 2012. *Global Change Biol*; Wilmshurst & McGlone in review *NZ J Ecol*). Currently, she and colleague Jamie Wood are extending the horizons of palaeoecology through detailed pollen, macrofossil and DNA analysis of moa and other bird coprolites (Wood et al 2012 *NZ J Ecol*). Other signal achievements include revitalising the analysis of pollen data through application of sophisticated transfer function techniques to quantify climate change over time (Wilmshurst et al 2007 *J Quaternary Sci*), detailed radiocarbon analysis to narrow the timing of crucial periods in New Zealand and east Polynesian prehistory (Wilmshurst et al 2011 *PNAS*), and quantification of the effects of past volcanic eruptions (Wilmshurst & McGlone 1996 *Holocene*).

Guidance for ecosystem restoration

Janet has always been concerned to apply her palaeo research to conservation contexts. She has, for instance, investigated the past impact of moa in relation to present day ungulate browsing to cast light on the important question of just how novel a pressure are mammalian browsers (Forsyth et al 2010 *NZ J Ecol*). She has looked at the possibility of past pollinator-plant linkages now broken in her work on kakapo dung (Wood et al 201 *Conserv Biol*). Her project on northern offshore islands are yielding valuable information for future management (Wilmshurst et al in press *Conserv Biol*).

Six important papers

Wilmshurst, J.M., McGlone, M.S., Leathwick, J.R., Newnham, R.M. 2007. A pre-deforestation pollen-climate calibration model for New Zealand and quantitative temperature reconstructions for the past 18,000 yrs B.P. Journal of Quaternary Science 22, 535–547. *Very important paper as it provides a tool for quantifying temperature reconstructions from pollen profiles. 31 cites in Google Scholar.*

Wilmshurst JM & McGlone MS. 2005. Origin of pollen and spores in surface lake sediments: comparison of modern palynomorph assemblages in moss cushions, surface soils and surface lake sediments. Review of Palaeobotany and Palynology 136: 1–15. *At first glance a simple descriptive paper, but it has proven to be important in quantifying sources of pollen and spores in lake sediments. 45 cites Google Scholar*

Wilmshurst J.M. and McGlone, M.S. 1996. Forest disturbance in the central North Island, New Zealand following the 1850 BP Taupo eruption. The Holocene 6 (4), 399–411. *A breakthrough paper from her thesis that revealed just how extensive vegetation disturbance has been after volcanic eruptions. 81 cites Google Scholar.*

Wilmshurst, J.M., Wiser, S.K., Charman, D. J. 2003. Reconstructing Holocene water tables using testate amoebae: differential preservation of tests and implications for the use of transfer functions. The Holocene 13 (3) 61–72. *Here she pioneered a new technique in NZ, and created an essential tool for understanding past rainfall fluctuations. 46 cites Google Scholar*

Wilmshurst JM, Hunt T, Lipo C, Anderson A. 2011. High precision radiocarbon dating shows recent and rapid initial human colonization of East Polynesia. Proceedings of the National Academy of Sciences USA 108 (5) 1815-1820. *This is a remarkable new paper in which Janet took the lead in extending the New Zealand results for rapid, recent settlement and showed it applied to all of east Polynesia. Already 53 cites in Google Scholar.*

Wilmshurst JM, Moar NT, Wood JR, Bellingham PJ, Findlater AM, Robinson JJ, Stone C. 2013. Pollen and ancient DNA provide conservation baselines for offshore islands in New Zealand. Conservation Biology in press. *This paper is the first in NZ to use DNA to reconstruct vegetation base lines for restoration.*

Conclusions

Janet has produced a wide platform of research which has changed the accepted views in a number of different areas, and has pioneered a range of novel techniques which are used widely. This research clearly fits the aims of the Te Tohu Taiao award to recognise "*individuals who have made an outstanding contribution to the study and application of ecological science*".

Furthermore, she is still relatively young which makes her achievements all the more remarkable. And of the 20 previous recipients of this award, only two are women (Carolyn King and Kath Dickinson). Janet's work is clearly worthy of this award on its own merits, and awarding it to her will serve as a shining example to younger scientists and female scientists. For all these reasons she is an outstanding candidate.

NZES STUDENT AWARDS 2013

BEST PUBLICATION BY A NEW RESEARCHER

Sarah Wyse, University of Auckland

Effects of *Agathis australis* (NZ kauri) leaf litter on germination and seedling growth differs among plant species

Abstract: *Agathis australis* (*A. australis*, New Zealand kauri, Araucariaceae) exerts a substantial influence on soil properties and nutrient cycling, and mature specimens form an acidic organic soil layer beneath them that can be up to 2 m deep. We investigated whether phytotoxic compounds occurred in *A. australis* leaf litter and organic soil, and whether allelopathy may explain the distinctiveness of plant communities surrounding *A. australis*. We extracted water-soluble compounds from fresh litter, and conducted bioassays of seed germination and seedling growth in these extracts on both *A. australis*-associated and non-associated species. Germination of all species except *A. australis* was inhibited by extracts from *A. australis* litter, which probably contains phytotoxic compounds. Germination of a forest species that is not associated with *A. australis* was inhibited by the low pH organic soils collected from beneath mature *A. australis*, but when these soils were neutralised using lime, its germination was not inhibited. *Lactuca sativa*, a species highly sensitive to phytotoxic compounds, was negatively affected by both the low pH of the organic soil and the presence of phytotoxic compounds. In contrast, there was no effect of the organic soil on the germination and growth of *A. australis*-associated species. These results suggest that the high acidity of *A. australis* organic soil plays a considerable role in structuring the composition of plant communities associated with *A. australis*, and also that *A. australis* litter probably contains unidentified phytotoxic compounds that may exert additional direct allelopathic effects on sensitive species.

Article available online at:
http://newzealandecology.org/nzje/abstract.php?volume_issue=j37_2&pdf_filename=NZJEcol37_2_178.pdf

NZES ECOTAS13 CONFERENCE AWARDS

Oral presentations

	Name	Title	Affiliation
First	Freya Thomas	Incorporating functional traits into a multi-species model of plant growth	University of Melbourne
Second	Sichong Chen	A mammoth mouthful? A test of the idea that big animals disperse big seeds	University of New South Wales
Highly commended	Nixie Boddy	Interacting global change drivers limit the distribution of a thermally-sensitive freshwater fish	University of Canterbury
Conservation Biology Society Award	Patrick Garvey	Behavioural responses of stoats to the presence of a dominant competitor	University of Auckland

Posters

	Name		Affiliation
First	Paul Battersby	Relating serotiny in *Leptospermum scoparium* to known fire histories in New Zealand	University of Auckland
Second	Jennifer Dent	The influence of dead material on flammability in common gorse (*Ulex europaeus*)	Lincoln University
Highly commended	James Brock	NZ Tree Fern Ecology	University of Auckland

GONG FOR NZ ECOLOGIST

DAVE KELLY AWARDED HUTTON MEDAL

The Royal Society of New Zealand awarded the Hutton Medal for plant science to Professor Dave Kelly FRSNZ**,** University of Canterbury, for his research on plant ecology. Professor Kelly has made major contributions to New Zealand plant ecology across a range of areas. His hallmark is using long-term studies of South Island ecosystems to reveal the answers to fundamental questions of national and international interest. He has used decades-long studies of variable seed crops in native plants to probe the evolutionary causes, the proximate climate triggers, and the ecosystem consequences of this striking natural phenomenon, which is unusually common in New Zealand but is of interest worldwide.

His research has improved understanding of New Zealand ecosystems and provided tools for better conservation of the native flora and fauna. His work has appeared in top journals worldwide. He says he is delighted receive the highly regarded medal. "It's a great honour to be among such hallowed company. I'm also delighted that UC gets recognition for its support of my research over the years—without good backing and infrastructure the discoveries I've made would not have been possible."

The Hutton Medal is awarded for outstanding work by a researcher in New Zealand, rotated annually among the earth, plant and animal sciences. Previous recipients of the Hutton Medal include Leonard Cockayne, Eric Godley, and Sir Alan Mark.

NZES CONFERENCE 2014

The annual conference for 2014 will be held at the Turitea campus of Massey University, in Palmerston North, from Sunday 16 to Thursday 20 November 2014. It will follow the standard format, with a Student-only day on the Sunday, invited and offered speakers and posters presented from Monday to Wednesday, and field trips to local areas of high interest and low accessibility on the Thursday. Additional workshops are being developed. The conference dinner is planned for Tuesday night, and it and all lunches will be included.

The theme for 2014 is: *"Is NZ the world's invasion hotspot?"* This topic is designed to encourage understanding of the science of invasion, especially in the context of New Zealand's apparent relative vulnerability, which can then be applied to improving management of invading species, both plants and animals. Being concerned about the state of our planet, we will be attempting to run this conference as sustainably as possible, and attendees will be asked to assist.

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

Contacts: Jill Rapson, Phil Battley and Paul Barrett

ARTICLES

COMPENSATING FOR ECOLOGICAL HARM

Marie Brown

My PhD investigated the use of ecological compensation (including biodiversity offsets) under the Resource Management Act 1991. Ecological compensation is often required of those that undertake development or resource use, and usually take the form of planting programmes, pest control or financial contributions. It has many names, with the 'biodiversity offset' generally being at the top of the spectrum in terms of detailed accounting and often aiming for a goal of no net loss of biodiversity. They are all trade-offs however, and have similar implementation issues, so I have treated them in the same way. There hadn't been much empirical research into ecological compensation outcomes in New Zealand before and there wasn't much interest from the Ministry for the Environment in engaging with it either, so I set about figuring how to assess the outcomes together with my supervisors, Professor Bruce Clarkson and Professor Barry Barton and a wonderful team of advisors.

Reviews of ecological compensation around the world generally highlight that weak policy, poor exchanges, and a lack of follow up cause the use of ecological compensation to potentially place vulnerable species and ecosystems at risk. These matters are usually less problems than symptoms of problems with institutional design and inherent biases in planning systems towards environmental exploitation—both of which contribute to the advancement of the public interest and the advocacy for nature being fraught tasks. Ecological compensation is an attractive concept because it helps decision makers to avoid saying "no" (an unpopular decision!)—but the capability to match the losses to ecosystems is often over-stated. ecological compensation measures rarely effectively address the loss of rare ecosystems, and those that have developed as a result of unique environmental conditions. They can be difficult to

secure over long time periods, and the priority and resourcing afforded to monitoring and enforcement on all sides is typically inadequate.

My research began with an evaluation of compliance, with a field trip lasting several months right across New Zealand. I evaluated a total of 245 resource consent conditions of all different types. Overall rate of compliance was 64.8%, but I then compared the rates of compliance between different kinds of conditions, activities and applicant types and found significant differences. For example, I demonstrated that conditions that are paper based (such as registering a covenant) were complied with 82.6% of the time, while those that are 'active' (i.e. planting) are complied with less than half the time (49.2%). This dataset has been the subject of a great deal of interest from local government and NGOs, and has hopefully highlighted the need to better secure ecological exchanges, to ensure that they happen and meet expectations.

In my travels around the country and as I plowed through the detail of all of the case study consents (110 in total), it became clear that compliance was only part of the story. Perhaps of even greater concern was what were the applicants not complying *with*? What was the nature of the exchanges, and how did they recognise the complexity of biodiversity and help to ensure it persists and maintains or improves in condition? I analysed the kinds of exchanges occurring under the RMA, demonstrating that some ecological compensation requirements were quite poor, meaning that even perfect compliance was unlikely to yield a good environmental outcome.

Stepping into the frightening world of interview research, I then designed a series of questions, and ran interviews with 116 people around the country to glean their impressions of EC and how it could be improved. Overwhelmingly, the respondents were concerned about the implementation of ecological compensation and felt that the next logical step was for New Zealand to develop statutory guidance and policy. Having some decision-support available is likely to improve outcomes, by making sure that decision makers consider the key areas of concern when allowing exchanges of biodiversity.

The alternative to requiring ecological compensation is usually either to decline the activity or to allow it to proceed without seeking to compensate for the ecological harm. Despite this fact, many remain opposed to the concept, suggesting that ecological compensation makes everything "up for grabs" and makes it difficult to protect anything in nature. I'd probably argue that it was always difficult to protect nature from development, and that trade-offs have always occurred. Instead of such tradeoffs being implicit and silent in development traditionally, ecological compensation tends to make them more explicit and obvious. That isn't to detract from the very real risk that ecosystems can be damaged with ecological compensation and that there do not need to be strict limits on its application. The policy vacuum in New Zealand does not achieve this however.

National level policy is required on the use of ecological compensation—the *ad hoc* application of the concept is without a doubt constraining outcomes. The private sector is frustrated with inconsistent expectations, agencies often have little guidance and technical support and communities and NGOs are tired of re-litigating the same battles. The policy vacuum allows for any decision makers individual interpretation of what EC is to guide the nature of the exchanges. This simply will not do. A stronger emphasis upon like for like exchanges, equivalency in exchanges and ensuring additionality of new gains (i.e. that they are new, and would not have otherwise occurred) is vital and statutory policy is how this could be mandated.

In addition to that, New Zealand could look closely at how ecological compensation is presently delivered and think about how that might be improved. Generally exchanges are delivered on a case by case basis, specks of mitigation activity dotted about the landscape. In other countries, these gains are delivered through credit trading systems, bio-banking and agency-led restoration and habitat protection. There is potential for these delivery mechanisms to be used in New Zealand as well, and for the use of ecological compensation to be integrated into landscape-level planning to ensure it contributes to strategic conservation gains. There is much room for improvement and about time for a national conservation on just what it is that we expect.

PhD publications

Brown, Clarkson, Barton & Joshi (2013) Ecological compensation: an evaluation of regulatory compliance in New Zealand. Impact Assessment and Project Appraisal 31 (1) 34–44.

Brown, Clarkson, Stephens & Barton (2014) Compensating for ecological harm—the state of play in New Zealand. New Zealand Journal of Ecology (in press).

Brown, Clarkson, Barton & Joshi (2014) Implementing ecological compensation in New Zealand: stakeholder perspectives and a way forward. Journal of the Royal Society of New Zealand (in press).

APPEAL FOR A WISE POLITICAL RESPONSE TO OUR DETERIORATING WORLD

Sir Alan Mark

To N.Z. Ecological Society Members: Request for support for an Appeal to Parliament for a Risk Assessment for New Zealand

Symptoms too serious to ignore: a call to face up to NZ's critical risks

We live on a biologically complex and exquisite planet, home to 7 billion people and a myriad of other unique life forms. We believe it is our human responsibility to maintain the integrity of life support systems and the natural processes which sustain and renew them.

We believe it is also our responsibility to fervently defend the basic right of humans to live secure and fulfilling lives consistent with the UN Declaration of Human Rights. It follows that our generation must satisfy our present material needs in ways that do not diminish the prospect of their realisation for present and future generations.

We are deeply concerned about the links between global climate change, fossil fuel extraction and combustion, and the economy. We consider the evidence is now overwhelming (refer Urgency below) for accepting that human-induced climate change, (including extreme weather events) and impending oil constraints threaten our ability to meet those environmental and social obligations. There are also numerous other unprecedented trends and threats of the present era which, individually or in combination, could destabilise New Zealand's wellbeing.

So far, New Zealand has failed to truly face up to such unprecedented threats to its collective security. Indeed, some policies exacerbate the situation. There appears to be an unwavering faith that technological fixes will be found in time. Yet with scientists saying critical "thresholds" are upon us, the odds of such solutions being found diminish by the day and the consequences of this faith being ill-founded will, in all probability, be disastrous and irreversible.

Therefore, in the name of all our children and grandchildren we, the undersigned, call on the New Zealand Parliament to face up to this situation now by dispassionately assessing risk levels in the following five areas. Then, if found necessary, and with public input, design coherent, robust cross-party strategies and policies to avert these risks and give future generations the very best chance of security, peace, social justice and opportunity for all.

1. **Economic Security: the risk of a sudden, deepening, or prolonged financial crisis.** Such a crisis could adversely impact upon our society's ability to provide for the essentials, including local access to resources, reliable supply chains, and a resilient infrastructure.
2. **Energy and Climatic Security: the risk of continuing our heavy dependence on fossil fuels and associated global warming.** Progressively restricting their extraction, importation and use could promote a switch to genuine renewables and encourage smarter use of existing energy and energy systems while creating better public transportation. Such responses would simultaneously lower greenhouse gas (GHG) emissions.
3. **Business Continuity: the risk exposure of all New Zealand business, including farming, to a lower carbon economy**. To mitigate this risk, all businesses could explore both market and job opportunities in reducing the human ecological footprint, finding substitutes for petroleum-based goods and services, increasing efficiencies and reducing waste in food and resources. This would position New Zealand as a market leader in low-carbon technologies and living arrangements.
4. **Ecological/Environmental Security: the risks associated with failing to genuinely protect both land-based and marine ecosystems and their natural processes**. We believe that such protection is essential for both the maintenance of indigenous biodiversity and ultimately, all human welfare.
5. **Genuine Well-being: the risk of persisting with a subsidised, debt-based economy, preoccupied with maximising consumption and GDP.** An alternative is to measure progress by means of indicators of community sustainability, human well-being, more equitable wealth-sharing and environmental resilience, and to incorporate full-cost pricing of harmful environmental impacts.

For more information check our website at www.wiseresponse.org.nz, where you can add your name for support of this initiative. As you know, support is essential to make an impact.

A risk assessment is the first step in determining the scale, timeframe and interactivity of the risks faced by New Zealand. It would build on international risk assessments such as the World Economic Forum's Global Risks 2013 report. Such a report for New Zealand should then be used as the basis for engaging the public and businesses of New Zealand in informed discussion as to what choices need to be made to buffer New Zealand from such risks and to work towards genuine well-being.

Thirty years ago, widespread public concern about nuclear proliferation led to cross-party support for New Zealand's anti-nuclear legislation. This was a defining moment in New Zealand's history, and was in response to just one single risk. The Land and Water Forum is another example of where New Zealanders have come together to acknowledge, work through and address the risks of deteriorating water quality. Today New Zealand faces numerous additional risks, which are all the more risky for being largely unacknowledged. We believe Parliament should build on its proud tradition of foresighted collective response to risks, and initiate a risk assessment as the first step in achieving a more secure future.

Urgency

- The International Panel on Climate Change's 5th Assessment Report – Summary for Policymakers (27 Sept. 2013) put a figure for the first time on how much carbon dioxide humanity can continue to release into the atmosphere before overheating the planet. Half to two-thirds of the "budget" have already used up, and if emissions continue at current levels, or rise, then the world is on track for global temperature increases of more than 2 degrees by 2100, and possibly up to 4 degrees. See www.climatechange2013.org/images/uploads/WGIAR5-SPM_Approved 27Sep2013.pdf
- Fatih Birol, the chief economist at the The International Energy Agency (IEA) has stated recently that: "If current trends continue, and we go on building high-carbon energy generation, then by 2015 at least 90% of the available "carbon budget" will be swallowed up by our energy and industrial infrastructure. By 2017, there will be no room to move at all". (http://www.guardian.co.uk/environment/2011/nov/09/fossil-fuel-infrastructure-climate-change, IEA (2011) *World Energy Outlook*). A new report draws attention to the climate extremes already being experienced and the urgent need to prepare (IPCC. 2012. Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., et al]. Cambridge University Press, Cambridge, UK. 582 pp. Gruber,N. 2011. Warming up, turning sour, losing breath: ocean biogeochemistry under global change. Phil. Trans. Royal Soc. A 369: 1980–1996).
- International negotiations to combat human-induced climate change (Rio 1992, Kyoto 1997, Copenhagen 2009, Durban 2011) reveal that the course of climate diplomacy has increasingly lost touch with the scientific evidence (New Scientist 3843: p3. We can still avoid a 'lost decade' on climate change. Dec 2011). Not only is the widely used target, based on the 4th IPCC assessment report (450 ppm atmospheric CO2 equivalent) now very difficult to achieve, but this limit may be far too high. Scientists such as Jim Hansen argue that the maximum safe level for atmospheric CO2 concentration is 350 ppm (Hansen, J. 2012. Scientific Case for Avoiding Dangerous Climate Change to Protect Young People and Nature. http://pubs.giss.nasa.gov/abs/ ha08510t.html).
- Fatih Birol from the IEA (2011) has also stated that maximum global conventional crude oil production ("peak oil") occurred in 2006. This means that "all liquids" supply will likely steadily decline after an undulating plateau with a growing gap between demand and supply occurring from around 2015. The economic implications of this decline are likely to be serious. See Hirsch, R. L., Bezdek, R. & Wendling, R. 2005. Peaking of World Oil Production: Impacts, Mitigation, & Risk Management, US Department of Energy, and Hirsh R.L, ASPO presentation Vienna. 2012). Only by moving away from fossil fuels can we both ensure a more robust economic outlook and address the challenges of climate change. This process will be a "decades-long transformation that needs to start immediately" (see Murray, J. & King, D. 2012. Climate policy: oil's tipping point has passed, Nature 481: 433–435.).
- Financial inequity is increasing and the world financial system is unable to deliver security; social cohesion is at risk both nationally and globally (see Jackson, T. 2009. Prosperity without Growth. Earthscan. London, UK). In 1998, more than 45% of the globe's people had to live on incomes averaging US$2 a day or less while the richest one-fifth of the world's population has 85% of the global GNP. The gap between rich and poor is widening (see Meadows, D., Randers, J., Meadows, D. 2004. Limits to Growth: the 30 Year Update, Chelsea Green, USA.). The perpetual growth myth is enthusiastically embraced by politicians and economists as an excuse to avoid tough decisions facing humanity (see The Asahi Glass Foundation. February 2012. Environment and Development Challenges: the Imperative to Act, and Lloyd, B. 2009. The Growth Delusion, Sustainablity1: 516-536)

On behalf of *Wise Response.org.nz*
Alan F. Mark ΦBK, FRSNZ, KNZM,
Life member N.Z. Ecological Society.
Emeritus Professor,
Department of Botany,
University of Otago,
P O Box 56, Dunedin 9054.
Ph: 03 479-7573; Fax: 03 479-7583;
email: alan.mark@otago.ac.nz

SOUNDSCAPES AND STINGRAYS—EXPERIENCES AT THE 2013 NZES WRITING WORKSHOP & RETREAT

Ellen Cieraad

Continuing a tradition that started last year, the New Zealand Ecological Society sponsored a writing workshop and retreat for early-career ecologists following the recent annual (EcoTas13) conference in Auckland. Sometimes all you need to make some crucial progress on that manuscript is to be in a different environment, and a bit of peer pressure to be productive certainly helps!

An informal discussion at the University of Auckland kick-started the retreat. Well-known ecologists Bruce Burns and Jacqueline Beggs, and editors Jo Monks (New Zealand Journal of Ecology) and Birgita Hansen (Stilt) gave their view points on a wide range of topics, including 'snack-writing', manuscript structure, publishing strategies and authorship dilemmas. Thanks to all involved for their time and enthusiasm: this meeting set a great tone for the weekend.

Hard at work at the Leigh Marine Laboratory.

Armed with laptops and plenty of material to work on, we then made our way up to the retreat location: University of Auckland's Leigh Marine Laboratory. In a quiet lab with views over Goat Island, we set up our laptops, and the only noise would be the tapping on keyboards, the tuī singing away in the flowering pōhutukawa, and waves crashing onto rocks in the far distance. What a stunning place to spend the next two-and-a-half days working on new or revised manuscripts. The pull of the ocean was strong, and after several productive hours of writing it was great to be able to reward yourself with a well-deserved swim/snorkel, including encounters with stingrays and amazing underwater life. Even with the temptation of the beautiful ocean and forest around, we all got lots of writing done!

Was this writing retreat a success? Judge for yourself by excerpts of participants' comments:

Monica Peters (University of Waikato, Landcare Trust)

"*Soundscapes:* My working environments couldn't be more dissimilar. At university it's a shared office with various ringtones punctuating the general silence and the ding of the microwave typically signalling another olfactory assault (the reheated remains of someone's dinner…). At home it's police sirens, the muffled bass of someone's stereo and chickens raising a ruckus when neighbourhood cats get too curious… so, the marine lab couldn't have presented a greater contrast! The coastal soundscape included the susurration of waves breaking, birds (a territorial kingfisher, a grey warbler, various small twittering and squeaking things and a tui who confusingly mimicked my text message alerts), and a few sheep nearby that sounded like old men confabulating over beer and cards. It was an environment very, very conducive to concentrated work—a morning swim, generous food, great conversation and then the time and ample mental space for sorting out ideas and committing them to paper."

Manpreet Dhami (University of Auckland)

"It was a really productive experience and also extremely useful in getting to know the other researchers who came along. The evening "title discussion" session on Saturday was especially engaging and I learnt a lot about the different ways of executing a title. The writing periods were punctuated with a glance to the ocean or a quick snorkel out to the reserve. Such breaks struck the right balance between work and play and certainly made sure that everyone had a great time at Leigh."

Patrick Garvey (University of Auckland)

"I found that the writing retreat was a very beneficial experience. The relaxed and quiet environment of Leigh provided a perfect setting. Working alongside the other participants helped to ensure that we collectively maintained our focus. The brainstorming session, where we helped with each other's paper titles, was a nice engaging way to end a productive day. Also there is nothing quite like a swim in a marine reserve to remove any clutter from the mind!!"

Jo Peace (University of Auckland)
"This writing retreat is a valuable opportunity for me to continue my long term labour of turning PhD chapters into papers in addition to proofreading papers closer to submission standard. Working in the beautiful and peaceful environment of The University of Auckland Leigh Marine Laboratory (many thanks to the welcoming Leigh Team: in particular Arthur Cozens and John Atkins) within a writing retreat team that was focussed on being productive meant that it was easy to sit down and concentrate on actually writing. Given that writing these papers is a task that can sometimes make housework look tempting!"

Andrew Jones (University of Queensland)
"Stuck between green grassy slopes of sheep and a beautiful coast with scattered islands would not only be a fair summary of New Zealand, but also of the Ecological Society sponsored writing retreat this year. Rather than head straight back home to Brisbane after the EcoTas conference, I opted to take up the full opportunities that the conference had to offer. The retreat made a great weekend of relaxation and productivity. Having the unique opportunity to surround myself with like-minded early career scientists while working on my manuscript has been a privilege and a luxury."

Hugo Borges (University of Waikato & Cawthron Institute)
"Going to the writing retreat after the joint conference was very productive. The conference provides you lots of new knowledge, inspiration and new insights for your research and having the opportunity to go to a writing retreat right after it is amazing, once the environment and your mind is completely focused for your writing productivity. Also, when you are doing your work in a group environment where everyone wants to achieve the same objectives, it moves you forward and keeps yourself motivated. That was my first experience in a writing retreat and certainly was not the last one."

The New Zealand Ecological Society aims to foster the publication of ecological research and to support emerging ecologists (NZES Strategy Document, 2012)—and supporting a writing retreat like this contributes to both aims. Many thanks NZES and University of Auckland for their financial support (accommodation and food, and logistics and transport, respectively), and particularly Cate Macinnis-ng (University of Auckland) for making it all happen! I look forward to seeing the tradition of having a writing retreat in association with the annual conference continue.

The great setting allowed for a healthy balance between work and play.

IMMINENT MAST EVENT MAY TRIGGER PEST PLAGUE

Geoff Walls

Sue Scheele and I have just walked the Heaphy Track (a mere 50 years since I first set foot on the track as part of an escort for AH Reed, who was a sprightly 92). We had gorgeous weather and splendid company. The vegetation of course was a treat. Much was in flower: cabbage trees (3 spp.), harakeke, whararikí, manuka, beeches, neinei (3 spp.), mountain toatoa, upland heaths, cushion plants, broadleaf, quintinia, kamahi, hinau, kaikomako, northern rata, Parkinson's rata, nikau, kiekie, hebes, daisies, hooded orchids, coprosmas, divaricating pittosporums, astelias, sedges, tussocks....the list goes on. That was to be expected, given the locality and the time of year.

But what wasn't expected was the degree of flowering; everything hard at it, smothered in a rare profusion of blooms. Whilst delightful and fascinating, this is an ecological warning. The beeches and tussocks are gearing up for a massive mast seeding. So apparently is everything else. Red beech and hard beech have more or less finished flowering and have already set seed. The mountain beech forests are now red with flowers, and silver beech is also awash with flowers. This is happening on a huge scale: the mountain beech forests of Lewis Pass and Arthurs Pass are also distinctly red, and cabbage trees and flaxes are ablaze everywhere.

This superabundance of nectar and pollen is good for the native fauna (birds, lizards, bats and invertebrates) that is tuned into it. So will the resulting edible fruits boost the ecological economy. But the flowers and fruits will also be feeding the exotic intruders including wasps, possums, rats and mice. If we get the mast seeding that looks imminent this autumn, look out. Rodent and wasp numbers will build to enormous levels, mustelids and feral cats will proliferate and when the abundance of plant food subsides our precious native fauna will get hammered. Without increased pest control, we could see the extinction of mohua nationally, and local extinctions of riflemen, rock wrens, braided river nesters and whio. Lizards, bats, cicadas, stick insects, giant land snails, grasshoppers, weta and endemic moths could be seriously at risk in a lot of places. It may jeopardise the hard work of many restoration programmes, including mainland islands.

Mountain beech (left) and silver beech (right) flowering profusely, a precursor to mast seeding this coming autumn.

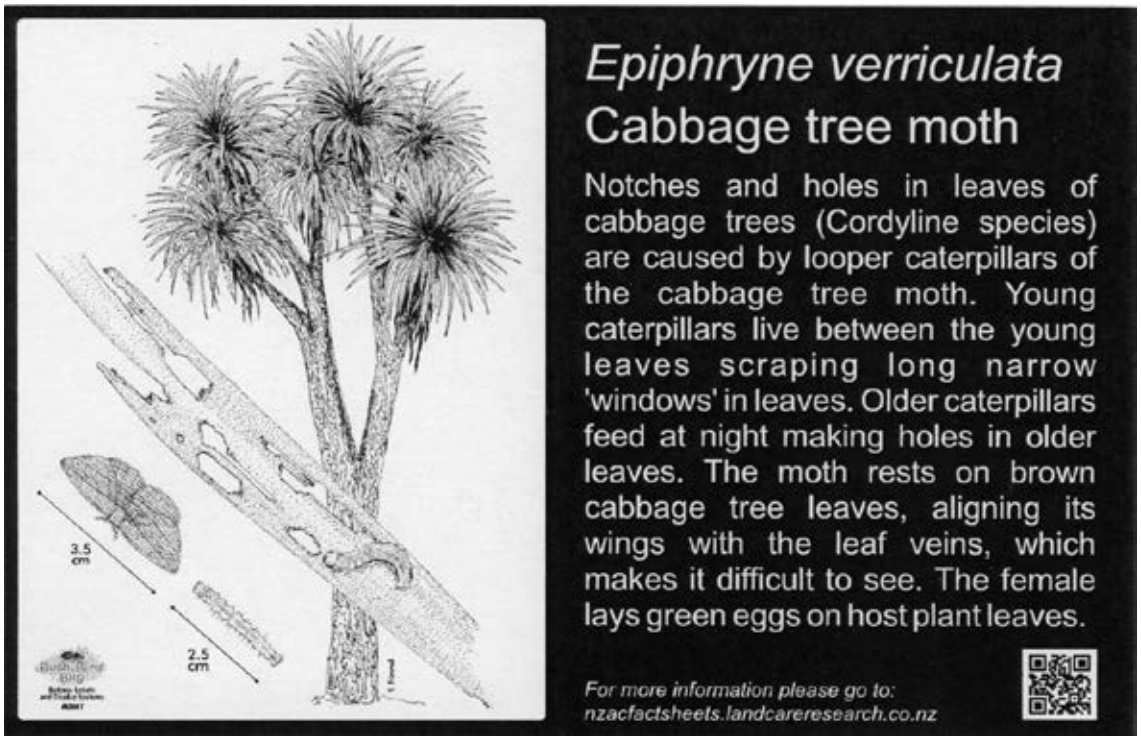
NEW BUG SIGNS

Nicholas Martin

New outdoor signs about insects and other invertebrates are being developed by the Auckland Branch of the Entomological Society of New Zealand with Metal Image Ltd.

The first four signs are Cabbage tree moth, Puriri moth, Pohutukawa leaf miner and Coprosma white erineum mite. The signs show the plant damage symptoms and lifelike drawings of the insect of mite. There is also a QR-code where smartphone users can link to an internet factsheet with more information on each organism. The signs are available in two sizes, 100 × 200, 194 × 294 mm.

The signs are available from Metal Image Ltd. http://www.metalimage.co.nz/bushbirdandbug.html



CONFERENCE REPORTS

AUSTRALASIAN WILDLIFE MANAGEMENT SOCIETY CONFERENCE 2013

Doug Armstrong

The 26th annual Australasian Wildlife Management Society (AWMS) Conference was held on the Palmerston North Campus of Massey University from 20-22 November. The conference attracted 120 delegates with a fairly even split from Australia and New Zealand, as well as a smattering of international delegates from Canada, USA, UK, Guam and South Africa.

The theme of this year's conference was "Advances in Australasian Reintroduction Biology 1993–2013", and about two-thirds of the conference was devoted to the symposium on this theme. The motivation was to follow up the highly successful conference on "Reintroduction Biology of Australasian Fauna" at Healesville in 1993, and in doing so assess progress that had been made and set future directions. There were also sessions on "Co-management of long-lived wildlife", "Managing impacts of exotic mammals", "Monitoring challenges", "Exotic species and landscape dynamics", and "New directions on population management". There were two plenary speakers. Suzanne Stone from Defenders of Wildlife, USA, spoke on "Reintroducing wolves in the American West: biological success, socio-political challenges, and conflict resolution". Mike Hamill from the Department of Fisheries and Oceans, Canada, spoke on "Harvesting beluga whales in northern Quebec, Canada: a case of complex co-management".

The conference also included an evening poster session, a lunch-time "Careers in wildlife Q&A", and lunch-time discussions on a proposed walrus reintroduction in Canada and future directions in Australasian Reintroduction Biology. The social programme included a BBQ icebreaker, a student dinner at the Grand Hotel, and the conference dinner which was held outdoors by the historic Wharerata homestead on campus.

Plenary speaker Suzanne Stone with Brad Purcell & Doug Armstrong.

Robin Church explaining the history of Bushy Park to Peter Fleming & Stewart Huxtable (Photo: P. Frost).

Grant Norbury, Adrian Manning and Peter Fleming scanning from the summit of Kapiti (Photo: T. Korn).

There was also a pre-conference field trip to Kapiti Island, and post-conference trips to the National Wildlife Centre (Pukaha Mount Bruce) and Bushy Park Sanctuary near Whanganui.

A good time seemed to be had by all, with the perfect weather making it possible to make maximum use of the beautiful outdoor environment at Massey. The reintroduction symposium in particular generated a great deal of energy, and a book based on the symposium is now underway.

SOCIETY FOR ECOLOGICAL RESTORATION 2013

Ellen Hume

I was lucky enough to have the opportunity to attend and present at the 5th World Conference on Ecological Restoration from 6 to 11 October. As a bright-eyed international conference novice, it was quite an event to start me off!

In the 25th year of the organisation, the Society for Ecological Restoration (SER) took the conference back to the birthplace of the organisation and essentially of ecological restoration—southern Wisconsin, USA. Held in the beautiful city of Madison, the conference attracted over 1350 delegates from 54 nations, making it the highest attendance to date. Although the majority of attendees were American, there were strong delegations from Canada, Brazil, Asia, Europe and Australia. Our country's restoration efforts were also well represented with 14 New Zealanders attending and a very successful symposium run by Bruce Clarkson and John Simmons on regional scale restoration in the Waikato.

"Seed Pod"—ecological art installed outside the conference venue with the Wisconsin State Capitol in the background (Photo: Ellen Hume).

With 690 oral presentations spread over 4 full days (8am-6pm) running 13 concurrent sessions, choosing which talks to attend was quite an overwhelming and time consuming exercise! Added to that was the very high standard of presentations, covering such a diverse range of topics and ecosystems. This catered for attendees involved in all the aspects of restoration ecology imaginable (researchers, practitioners, community group/NGO leaders, volunteers, consultants, indigenous people, teachers, policy makers, philosophers, government representatives, architects, park rangers, ecological artists, etc.), so you were guaranteed to meet some very interesting people in the tea breaks! The ill-timed federal government shutdown meant that some of the presentations (and even whole sessions) were cancelled, but the organisers handled the volatile situation remarkably well.

There were 8 keynote speakers, each from a different walk of life. I was particularly inspired by Paul Hawken, who is an environmentalist, entrepreneur and best-selling author (watch out for his new book 'Carbon – The Business of Life'); Alvaro Ugalde, who is the founder of the national park system in Costa Rica; and Luc Gnacadja, the 2007-13 Executive Secretary of the United Nations Convention to Combat Desertification (UNCCD), who talked about the factors driving desertification, land degradation and drought, and urgent actions needed to reverse these.

Learning about the impacts of invasive reed canary grass (Phalaris arundinacea) at Curtis Prairie, UW-Madison Arboretum (Photo: Ellen Hume).

The most debated topic of the conference was, of course, the concept of novel ecosystems. In fact, there were 4 sessions dedicated to this popular discussion, with themes including the influence of climate change, whether novel ecosystems are actually 'new', use (or not) of historical ecosystems as a guide for the future, and concern over the use of the ambiguous buzzword 'resilience'.

Evenings were filled till late with a comprehensive social program and networking opportunities. Highlights included a very inspirational multimedia presentation by John D. Liu (look him up!), a high quality poster session with nearly 200 posters, and a sociable gala awards dinner where the 'big wigs' of restoration ecology were witnessed showing off their skills in contra dancing!

As ecologists that had been stuck inside for a week of beautiful Wisconsin weather, we relished the chance to get fresh air and experience some of the best ecological sites in the area. One afternoon I joined a trip to the University of Wisconsin-Madison Arboretum and spent several hours learning about the challenges of maintaining the world's oldest restored grassland, Curtis Prairie. The post-conference fieldtrips included visits to prairie, oak savanna and wetland restoration sites, along with well-known destinations such as the International Crane Foundation, the farm of the legendary conservationist Aldo Leopold, and the environmental architect Frank Lloyd Wright's Taliesin. I choose to spend the day exploring restoration sites in the Baraboo Hills area. The highlight was our lunchtime hike at Devils Lake State Park, featuring 1.6 billion-year old exposed quartzite and great views over the lake with stunning autumn colours. What a way to finish off a fantastic week!

View over lake from East Bluff at Devils Lake State Park, Baraboo Hills (Photo: Ellen Hume).

SER2013 was an action-packed conference that brought together such a diverse range of people involved in ecological restoration globally. What really struck me was the passion, optimism, cooperation, drive and shared vision that all the attending delegates (and the groups they represent) have. It was truly inspirational and a good reminder of the positive impact ecologists, such as ourselves, can have on the health of the planet. If you get the chance, I would highly recommend attending the next conference in 2015 in Manchester…hopefully see you there!

BOOK REVIEW

LANDSLIDE ECOLOGY

Reviewed by Rob Allen

Authors: Walker, L.R.; Shiels, A.B.
Publisher: Cambridge University Press
Published: 2013
ISBN: 9780643107045
300 pp.
ISBN 978-0-521-17840-2
Paperback, UK£35.00

Natural phenomena, at a range of scales, send us constant reminders that the landscape is dynamic and recovery from historical events is widespread. With global climate predictions suggesting an increasing incidence of extreme events it is increasingly important to understand processes that drive landscape dynamics and how society should respond. Landslides are an important phenomenon in many parts of the world, often centred on mountain ranges, and influenced by tectonic activity and storm events. This book sets out to summarise what is known about the ecological consequences of landslides and how this knowledge might be used in the prediction and management of landslides.

Landslides are broadly defined as a sudden mass movement of substrate downhill that occurs on sloping terrain and vary considerably in the type of movement and the type of substrate involved. Movement is a consequence of a range of biophysical processes (e.g., earthquakes, freeze-thaw weathering, overgrazing). This book examines how soil organisms, plants and animals respond to landslides and how this knowledge of landslide ecology aids slope stabilisation and restoration. As pointed out in the book, less than 1% of papers published on landslides over recent decades address such ecological aspects and as a consequence makes this book a very worthwhile contribution.

The book considers the processes causing, and physical consequences of, landslides including the extreme breadth of spatial and temporal scales involved. This helps to rationalise, for example, earlier debates in New Zealand over when long-term landslide processes (e.g., tectonics) over-ride the importance of short-term processes (e.g., slope stability from forest cover) relevant to contemporary society. Consideration of submarine landslides, increasingly understood through new remote sensing technologies, adds to the likely interest in this book. What causes landslides is an important question, both ecologically and for human safety, which is dealt with early on in the book. It remains difficult, as the book acknowledges, predicting the location, timing and severity of landslides. The authors then consider how landslides lead to heterogeneity in the landscape and also heterogeneity in the landslide surface itself. They point out post-landslide erosion is often neglected in studies because it is usually less dramatic than the landslide itself. Landslide surfaces can dramatically alter soil nutrients and the physical properties that regulate soil development and re-colonisation by organisms. There is much to be learned about the restoration of biotic communities through understanding the early colonisation of landslide surfaces. The book has strong sections on the adaptations of terrestrial landslide colonists to low nutrients and unstable substrates reflecting the strong background of the authors in successional processes. Latter sections in the book deal with human interactions with landslides: how humans use and cause landslides; and, how humans manage landslides and restore landslide surfaces.

The need to understand landslide ecology is becoming more pressing as human populations increasingly use mountain landscapes. Not only does this book comprehensively present our current knowledge of biophysical processes but points to directions for further research. This book compliments literature focussed on engineering solutions and technologies for landslide hazards and their mitigation. A logical extension of the thinking in this book is to consider how landslide ecology links to how humans use and live in multifunctional landscapes.

The book by Walker and Shiels draws upon experience in many parts of the world (e.g., North America, Asia, New Zealand) and recognises the important contributions researchers in New Zealand have made. The book has a logical structure and draws upon a wide range of situations and examples to make key points. The key points from each chapter are usefully summarised at the beginning of each chapter. The book is suitable reference material for researchers, university students, land managers and related policy needs. It is readable and well-illustrated with the back cover photo showing, with a New Zealand example,how the generation of landslides can relate to vegetation cover. The book contains an appropriate mix of knowledge on landslide ecology and its application and provides a solid background for those interested in landscape dynamics.

NEWS FROM COUNCIL

NZES AGM & ELECTION OF OFFICERS

The New Zealand Ecological Society Annual General Meeting (AGM) was held during the EcoTas13 Conference on Tuesday 26 November 2013, at the Aotea Centre, Auckland. The following officers were elected to Council:

- President: Chris Bycroft
- Vice-president: Deb Wilson
- Treasurer: Clayson Howell
- Secretary: Laura Young
- Councillors: George Perry, Ellen Cieraad, Olivia Burge and Debra Wotton

Following Clayson Howell's presentation of the Annual Treasurer's Report (see below) and discussion of his recommendations, members voted to increase annual membership fees by $10 across all membership categories. Although the society continues to be financially sound, we currently rely on the annual conference to raise revenue to meet our costs. This puts a lot of pressure on conference organisers and we are forecasting a loss for the 2013 conference (mainly due to more student delegates than expected). Membership fees have not increased for several years. Members agreed to leave institutional journal subscription rates unchanged, as it is not worth risking subscription cancellations for a small increase in revenue.

PRESIDENT'S REPORT

Mel Galbraith, President 2012–2013

I am pleased to present the annual report for the New Zealand Ecological Society for this year's AGM. The New Zealand Ecological Society continues to plays a critical role in meeting the professional needs for New Zealand ecologists. Our annual conference is a crucial event in the ecological calendar, and serves to maintain the scientific foundations of our society. The conference is an opportunity to share and critique knowledge, novel ideas, methodologies and best practice. Then there is the meeting of colleagues, established and new, and the ensuing networking. Last year, our conference at Lincoln University, with the theme of Is ecology on shaky ground, was a successful return to Canterbury, and I acknowledge the efforts of James Ross and his team to accommodate us.

Our publications, the New Zealand Journal of Ecology and the newsletter, maintain links with our members, and provide a mechanism for the formal sharing of ecological knowledge. I extend my thanks to the editors, Jo Monks and Debra Wotton respectively, for their management of these publications, and also acknowledge the time and expertise that the editorial and technical teams contribute to provide the Society with such excellent publications. Both publications are delivered at an extremely high standard, and serve the Society well in maintaining high national and international profiles.

At the international level, Shona Myers and Ellen Cieraad represented the Society at the 11th Intecol Congress held in London in August. There can be no stronger indicator of the international profile and high regard held for New Zealand ecology than the election of Shona Myers as President of Intecol, the International Association for Ecology, at this congress. This represents exceptional recognition of Shona's standing as an ecologist, and I am delighted to formally congratulate her on behalf of the New Zealand Ecological Society for this honour.

We have continued to implement the strategies for the Society introduced last year. Our priority is to action communication goals, working on an upgrade of the Society's website to facilitate better management of our membership needs. This is not a rapid process as the logistics are complicated, and we need to ensure that sound decisions are made. With respect to other goals of the strategy, I remind members that many of our current activities, such as student scholarships, writing workshops, and indeed our annual conference itself, already meet key strategic goals. And to meet the ever-changing world of technology, we have a Facebook page that I hope you will all "like" and follow.

The year sees the completion of two lengthy processes. Firstly, the changes made to our rules at last year's AGM have been accepted by the Charities Commission, and we are now registered as a charitable organisation. We are now eligible for tax exemption, and tax credits can be claimed for donations of $5 or more made to the Society. The Society has also been registered with the "Give-a-little" website, a free service that provides both exposure and a mechanism for others to support our aims and philosophies through donations.

The second process to be completed is the publication of a special edition of the New Zealand Journal of Ecology on the Tiritiri Matangi ecological restoration project. This issue arose out of a symposium at our 2008 conference, held to mark 25 years of ecological restoration on the island. The production of this issue has been a lengthy, and at times problematic, journey, and I am sure that many will join me in expressing relief at its completion. I do want to express my sincere thanks, in particular, to the contributing authors for their enduring support and patience throughout the process. The technical editing for this issue was carried out by Jenny Steven, and I thank her for her meticulous

processing of the manuscripts. Funding for the issue has been provided by the Supporters of Tiritiri Matangi, and I acknowledge this support. The Supporters have just entered their 25th year, and I understand this publication will be incorporated into their upcoming celebrations in some way.

Finally, I would like to recognise and thank my fellow Council members—Shona, Clayson, Fleur, George, Ellen, Deb and Laura—for their support and contribution to the management of the Society over the year.

MEMBERSHIP REPORT 2013

Shona Myers, Secretary

As at 21st November 2013 the total membership of the New Zealand Ecological Society is 596. This represents a slight increase in membership since 2012. There has been a significant increase in "unwaged" members, which now a make up 25% of the total membership*.

The total count of members includes those in arrears for this year with just over 86% of subscriptions paid at the time these statistics were generated. Journal subscriptions currently total 82 for 2013 (cf. 87 in 2012), which includes 17 complimentary subscriptions.

Membership of the New Zealand Ecological Society as at 21st November 2013 (data from November 2012 in brackets provided as a comparison)

Category	Paid	Arrears this year	Total
Full	361 (328)	54 (11)	415 (447)
Unwaged	138 (75)	13 (39)	151 (114)
Overseas**	11 (11)	2 (4)	13 (15)
Honorary	13 (11)		13 (11)
Newsletter Only	4 (3)	(2)	4 (5)
Total	**511 (414)**	**69 (164)**	**596 (592)**

** 19% in 2012*

***Includes waged and unwaged overseas subscriptions*

(NB: as a further comparison the membership total for past years is as follows: 2009 (615); 2010 (685), 2011 (592)

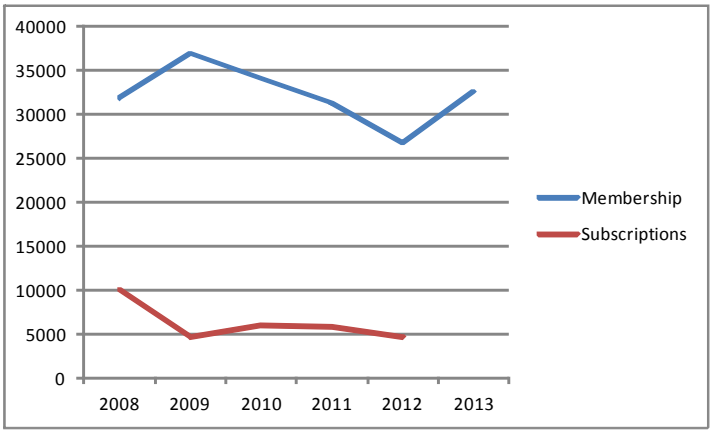
Note: The decline in membership numbers over the last several years is probably due to members being removed if they are in arrears for more than one year. In previous years, members in arrears for up to two years were still counted.

TREASURER'S REPORT

Clayson Howell, Treasurer

Financial performance

The Society made a profit of $4,185 for the 12 months ended 31 December 2012. The society is very grateful to the organisers of the Rotorua conference (2011) for the profit received in 2012. In 2012 the society made $5000 in grants from the Kauri Fund. Our secretariat raised her fee for the first time in many years. Revenue from memberships (2012) was down 15% on previous year. However, a significant recent increase in members gives a more healthy projection for 2013. Revenue from subscriptions was down 20% on the previous year. The New Zealand Ecological Society continues to be in a very strong position. The total equity at 31 December 2012 is $209,746.



NZ JOURNAL OF ECOLOGY EDITOR'S REPORT

Jo Monks (née Hoare), Scientific Editor

2013 papers

Volume 37 of the journal contained three issues (two regular issues, containing 18 and 14 papers respectively, and a special issue). The special issue (volume 37, issue 3) on research on Tiritiri Matangi Island was guest edited by Mel Galbraith, John Craig, Neil Mitchell and Hester Cooper and contains 12 articles and an overview.

2014 papers

The first issue of volume 38 is a regular issue that contains 17 papers; 14 papers are already available online. Six papers have already been accepted for the second regular issue in 2014.

Submissions

Submissions are holding steady at ca. 55 manuscripts per year. In 2012, 49 manuscripts were submitted, and 60 have been received to date in 2013.

Journal impact factor

Journal impact factors for 2012 revealed another good year for *New Zealand Journal of Ecology*, with the impact factor rising slightly to 1.82.

Mentor scheme

In conjunction with an initiative by the International Network of Next-Generation Ecologists, the journal introduced a mentor scheme for new reviewers in 2013. We are encouraging early career ecologists and people willing to act as mentors to sign up for the scheme, either as teams or individually (we're happy to match you up!). Rationale and details are provided in our editorial (www.newzealandecology.org.nz/nzje/mentor).

Editorial board changes

K.C. Burns, Phil Lester and Mike Winterbourn resigned from the editorial board and Des Smith and David Pattemore joined the board.

I wish to thank the editorial board, technical editors, reviewers and authors for their energy and commitment to producing a high quality journal for New Zealand ecologists. I'd also like to acknowledge Tim Curran and Ellen Cieraad for making the new mentor scheme happen.

POSTGRAD PROFILES

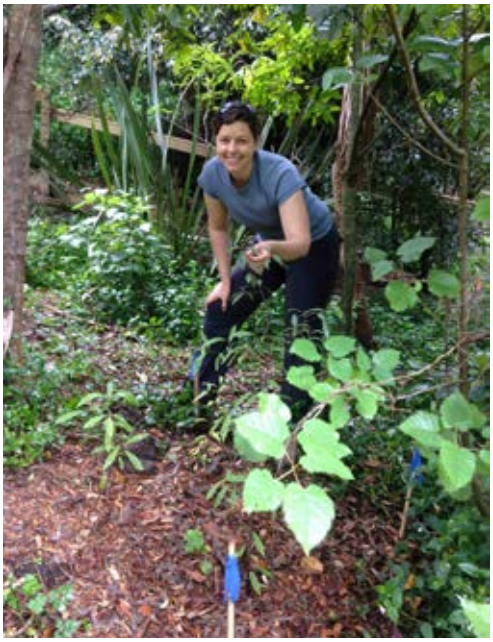
Kiri Cutting, University of Waikato

Kiri is a confirmed Ph.D. student just starting her fieldwork this summer, supervised by Professor Bruce Clarkson and Dr. Daniel Laughlin. Her research seeks to broaden our understanding and management of urban ecological restoration.

Restoration ecology is a growing field both in New Zealand and worldwide. While initially unconsidered, cities have recently been emphasized as candidates for ecological restoration. This is because urban green areas are typically strongly modified, simplified ecosystems lacking ecological function. As pressure on natural ecosystems grows, urban areas represent untapped potential for restoration of ecosystem services and biological diversity.

Empirical evidence increasingly underlines how important functioning ecosystems are to human well-being, but there are many unknowns surrounding ecological restoration and function in an urban context. My thesis research seeks to address this gap by asking three main questions.

First, I am collecting data from restoration plantings in Hamilton and New Plymouth to create a predictive mathematical model that will help us understand how these restored areas change environmentally as they age. I want to know how abiotic environmental factors such as soil chemistry and moisture, air humidity, canopy closure, and leaf litter differ across an age gradient of restoration plantings and compared to mature native forest.



Kiri Cutting at one of her field sites standing by an enrichment planting plot with a tawa tree in it.

Secondly, at these same restored sites I plan to explore the relationship between restoration of vegetation structure and ecosystem function, such as nutrient cycling. It is largely unknown if the structure of native plantings will provide ecological function, and indeed when this might happen during plant community establishment. I will look specifically at leaf litter decomposition rates and nitrogen cycling to measure function.

A final more applied component of my restoration research is developing best techniques for native canopy tree enrichment plantings, using *Beilschmiedia tawa* (Tawa) as the model species. In particular, I will test ways to plant tawa into large monocultures of *Tradescantia fluminensis* (Wandering Jew). This invasive non-native species dominates urban forest remnants and inhibits regeneration of native plant species. I am excited to see how my research unfolds over the next few years!

THE NOTICEBOARD

NEWSLETTER EDITOR WANTED: NZ ECOLOGICAL SOCIETY

After more than three years editing the NZ Ecological Society Newsletter, the current editor Debra Wotton is looking for a replacement. As newsletter editor you will have contact with a wide range of ecologists throughout New Zealand and be involved in NZES Council activities. This is a voluntary position.

The newsletter serves as a key means of communicating with society members and the wider ecological community, both within New Zealand and overseas. The Newsletter Editor has a large say in the content and format of the newsletter, so you will have the opportunity to make it your own. As part of the current redevelopment of the NZES website, we are hoping to move the newsletter to an online format. You will work with the webmaster to manage any changes for the newsletter in this area.

What's involved?

- Produce four newsletters a year (March, June, September, and December)
- Publish Council news and Society notices in the Newsletter
- Attend NZES Council meetings in person and on Skype

Attributes needed

- Excellent writing and editing ability
- Highly organised
- Ability to work to deadlines
- Willing to work for free

If you're interested in this position or would like further information please contact the current newsletter editor Debra Wotton at newsletter@nzes.org.nz

AUCKLAND COUNCIL DRAFT BIODIVERSITY RESEARCH PROSPECTUS

The Auckland Council are developing a biodiversity research prospectus to facilitate collaboration with tertiary institutes and research providers. Council are keen to both flag research topics of interest, but also highlight the research opportunities borne out of its monitoring programme and conservation management initiatives. The development of this prospectus has been driven by the council's Indigenous Biodiversity Strategy http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/plansstrategies/Councilstrategies/Documents/indigenousbiodiversitystrategy.pdf.

The draft research prospectus can be found here: (http://www.aucklandcouncil.govt.nz/EN/environmentwaste/naturalenvironment/Documents/draftbiodiversityresearchprospectus201314.pdf)

or contact biodiversity@aucklandcouncil.govt.nz for more information.

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".

DFG/ICSU/ISSC YOUNG SCIENTISTS NETWORKING CONFERENCE ON INTEGRATED SCIENCE

Call for Applications

Ecosystems and human wellbeing in the green economy

A key theme of the Rio+20 United Nations Conference on Sustainable Development, held in June 2012, was the promotion of a "green economy". Future Earth, launched during Rio+20, is an ambitious new 10-year research programme which will provide the knowledge we need to tackle the most urgent challenges of the 21st century related to global sustainability, and that includes issues relating to transformations towards green economies.

The International Social Science Council (ISSC) and the International Council for Science (ICSU), in collaboration with the International Network of Next Generation Ecologists (INNGE) and Institute for New Economic Thinking's Young Scholars Initiative (INET YSI), are planning to assemble a group of early career researchers with diverse backgrounds and research perspectives to reflect on **ecosystems and human wellbeing in the transition towards green economies** and debate relevant issues as part of a series of conferences on Integrated Science that are funded by the German Research Foundation (DFG).

The aim is to bring together creative multidimensional, interdisciplinary and trans-disciplinary perspectives to address the complex topic of how future societies deal with ecosystems and human wellbeing. Young scientists will debate issues relating to the topic, questioning key assumptions, theories and models underlying the current research on ecosystems, human wellbeing, and the transformation towards green economies; dynamics of governance, justice, authority at global and local levels; and the development of research methodologies to assess change in the transformations towards sustainability.

The Networking Conference is open to post-doctoral researchers interested in the collaboration between the social and the natural sciences. The conference will bring together senior and leading scientists and researchers with a diversity of perspectives to identify top priority questions for future research on the topic.

Closing date for applications: 7 January 2014

NZ JOURNAL OF ECOLOGY MENTOR SCHEME FOR NEW REVIEWERS

Would you like to:

- review papers, but are you unsure where to start?
- improve your own science and writing by critically evaluating other people's work?
- be better known in the NZ ecological community?

You can sign up:

- Individually
  - Early-career, inexperienced reviewers will be paired with a mentor;
  - Experienced reviewers who would like to review for NZJE will be added to the reviewers' database without the need for a mentor;
  - Experienced reviewers can also sign up as a mentor and help early-career ecologists become effective reviewers; OR
- As a Team (inexperienced reviewers can seek out their own mentor, for example their supervisor)

www.newzealandecology.org/nzje/mentor

NATIONAL WETLAND RESTORATION SYMPOSIUM

February 12–14, Auckland

A forum for wetland scientists, managers, iwi, community groups and landowners, to share theory and practice around wetland restoration, organised by the National Wetland Trust. The symposium includes field trips to natural, restored, and constructed wetlands, conference dinner at the Zoo, with a tour of the Te Wao Nui (NZ biodiversity exhibit), presentations and practical sessions.

The theme, *Water and Wetlands: from Drought to Storms*, reflects some extreme weather New Zealand has been experiencing, and is an opportunity to share ideas on how to cope as wetland managers, or learn how our wetlands can help manage water quality and quantity and biodiversity in the face of climate and weather extremes.

Keynote speakers will include New Zealander of the Year, Dame Anne Salmond, and local expert on wetlands and carbon, Dr Dave Campbell. A focus on stormwater management systems is an opportunity to learn more about how managing water can also be an opportunity to create and enhance wetlands. There will also be practical training sessions on weed identification and management.

Registrations are now open via www.wetlandtrust.org.nz/symposia.html

Many thanks to our key sponsors: Auckland Council, Department of Conservation, Fonterra, Unitec Auckland, Landcare Research, NIWA, and Northland Regional Council. Contact us if you would like to be a sponsor or exhibitor. Karen.denyer@wetlandtrust.org.nz

UPCOMING MEETINGS

National Wetland Symposium
Water and Wetlands: from Drought to Storms
12–14 Feb 2014
Auckland
www.wetlandtrust.org.nz

Dune Restoration Trust Conference
11–13 March 2014
New Plymouth
www.dunestrust.org.nz

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

Island Biology 2014
7–11 July 2014
Hawaii, USA
Abstract deadline: 31 January 2014
https://sites.google.com/a/hawaii.edu/islandbiology2014/
To receive announcements email island.biology@gmail.com

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

Office Holders of the New Zealand Ecological Society 2013/2014

(Effective from 26 November 2013)

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
Chris Bycroft
Wildland Consultants
PO Box 7137
Te Ngae
ROTORUA 3042

Immediate Past President
Mel Galbraith
School of Natural Sciences
Unitec New Zealand
Private Bag 92025
Carrington Road, Mt Albert
AUCKLAND
P: 64 9 815 4321 ext. 7296
M: 64 25 694 8139
E: mgalbraith@unitec.ac.nz

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

Secretary
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@canterbury.ac.nz

Treasurer
Clayson Howell
Department of Conservation
PO Box 10-420,
WELLINGTON
P: 64 4 471 3113
M: 021 973 181
E: chowell@doc.govt.nz

Councillors (4)
Olivia Burge
School of Biological Sciences
University of Canterbury
Private Bag 4800
CHRISTCHURCH
E: orb16@uclive.ac.nz

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

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

Debra Wotton
Moa's Ark Research
14 Tui Road
Raumati Beach
PARAPARAUMU 5032
E: debra.wotton@moasark.co.nz

Journal scientific editor
Jo Monks
Department of Conservation
PO Box 5244
DUNEDIN 9058
jmonks@doc.govt.nz
P: 03 371 3746

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
Moa's Ark Research
14 Tui Road
Raumati Beach
PARAPARAUMU 5032
E: newsletter@nzes.org.nz

Webmaster
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@nzes.org.nz

SUBMISSIONS TO THE NEW ZEALAND ECOLOGICAL SOCIETY NEWSLETTER

Contributions from NZES members are sought in the form of:

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

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

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

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

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

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

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

Content for the March 2014 issue of the NZES Newsletter is due by Friday 7 March 2014.

MEMBERSHIP

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

Types of Membership and Subscription Rates (2013)

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

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

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

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