NEW ZEALAND ECOLOGICAL SOCIETY

# Newsletter

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No. 151, March 2015

## FROM THE EDITOR

Kia ora koutou and welcome to the first New Zealand Ecological Society Newsletter for 2015 and my first as editor. Thanks to Jane who has been holding my hand through the transition process. Jane has done a wonderful job over the last year as newsletter editor and I thank her for her efforts. Jane has found mixing her fieldwork-intensive job with newsletter compilation somewhat challenging so has decided to hand over the reins. I'm excited to take up the role even if I was 'nominated' (thank you Margaret Stanley, I won't forget).

As ecologists, fieldwork is a major part of the scientific process. Fieldwork can be the most rewarding and exciting part of the job but can also be extremely taxing. Preparing for fieldwork takes often five times longer than the actual trip itself and I know I've spent countless hours watching weather reports and praying to the fair weather gods. Yet fieldwork gets us out in the real world and there is nothing more satisfying than a successful trip. And of course, who doesn't like to brag about their envy-inducing field site or their amazing troubleshooting skills with a pair of pliers and a pipe cleaner? *cont. overleaf*

## ILLUSTRATE ECOLOGY

*Georgianne Griffiths has submitted this fascinating photo of* Acari *(mite) morphospecies collected from leaf litter as part of a decomposition experiment on Hauturu (Little Barrier Island) and the Waitakere ranges. Georgianne is collaborating with Alexei Drummond. Photo: Birgit Rhode.*

## INSIDE:



**Newsletter Editor:** Cate Macinnis-Ng. E-mail: newsletter@newzealandecology.org
**Layout and design:** Jeremy Rolfe

*The deadline for submissions for the next issue of this newsletter is **Friday 5 June 2015**.*

*cont. from page 1*

Passing on our enthusiasm for fieldwork to the next generation must be one of the most important things that ecology academics do. A recent opinion piece in The Times Higher Education (http://www.timeshighereducation.co.uk/comment/opinion/save-field-biology-skills-from-extinction-risk/2018721.article) suggested that graduates are getting less field experience as universities try to cut costs and save time. In this issue, Tim Curran shares some of his insights on teaching ecology in the field, demonstrating that here in NZ, field ecology is still alive and well.

The news is not quite so rosy for wrybills on Great Barrier. John Ogden reports that nationally vulnerable wrybills have been declining over the last 15 years due to destruction of far-away breeding habitat.

In this issue we announce the details for NZES award nominations for 2015. I encourage you all to consider nominating a deserving student, supervisor, colleague or friend. Also, make sure you check out the important dates for the NZES conference in Christchurch in November.

Now that Cyclone Pam has proven to be a bit of a fizzer for Auckland, I can continue with planned fieldwork tomorrow. I hope you enjoy this issue and I do look forward to lots more great contributions in time for the June edition.

## OBITUARY

The New Zealand ecology community was deeply saddened by the recent death of Emeritus Professor Ian Jamieson. Ian was an internationally recognised behavioural ecologist and conservation biologist who had a huge impact on bird conservation in New Zealand. He worked at the University of Otago for almost 25 years, publishing close to 150 journal articles and book chapters. The Society acknowledged Ian's contributions to conservation by awarding him the Te Tohu Taiao award for Ecological Excellence in 2012. An obituary will be published in an upcoming edition of the NZ Journal of Ecology.

## FEATURE ARTICLES

### FOR THE LOVE OF FIELD ECOLOGY

*Tim Curran, Senior Lecturer in Ecology, Lincoln University (@TimCurran8)*

*This is an amended version of an article that first appeared on the Lincoln University Ecology department blog: www.ecolincnz.lincolnecology.org.au.*

**The first rule for teaching ecology: "Get them outside; early and often". David Schindler, University of Alberta**

Recent commentary on the ECOLOG-L email list (a US-based ecology discussion group) has been lamenting the decline in field ecology training at several (but not all) universities in the US, and noting similar trends in other countries, such as the UK and India. Among the clamour of concerns, a number of staff at government agencies have highlighted the lack of practical skills that many recent graduates are bringing to their jobs. One commentator decried that at one major US university 'fisheries students—yes, fisheries students, that graduate with both B.S. and M.S degrees that have never once set a net, measured a fish, or run a boat.'

I had a similar lament during my own undergraduate degree years ago at the University of New South Wales, Australia. I vividly remember looking forward to the field trip in my second year Vertebrate Zoology class. Older students had regaled us with tales of trapping, catching and observing everything with a backbone at the wonderful field station set on Smith's Lake in the midst of coastal forests and heathland at Myall Lakes National Park. I couldn't wait! Sadly, due to budget constraints, our year was the first Vertebrate Zoology class where this half-week field trip to ecology nirvana was replaced by a one-day, largely self-guided trip to the city zoo. It was a great zoo, but no match for Smith's Lake. Desperate to get my field ecology fix, I volunteered for summer field work, which took me to ecology nirvana not just as a helper, but also during my honours research. Happily, my alma mater now has a designated field biology course and other trips for undergrads to Smith's Lake.

Most ecologists well know the benefits of a field ecology course, but it doesn't hurt to reiterate some of these here.

- It is great fun! Students love it and so do staff. Students often consider field courses to be the best parts of their degrees and staff love to be reminded of why we often chose to be ecologists in the first place. This shared love of the outdoor experience also breaks down barriers between staff and students (enabled by the fact that trips are often overnight and so students and staff will do chores and socialise together, and while away long vehicle journeys chatting about all manner of topics).
- A key tenet of education is learning by doing: nothing beats actually getting hands on (often hands dirty in ecology!) to learn a new technique, acquire a new skill or to understand theory that much more clearly.

- It helps students determine their career path. Many students will fall in love with ecology fieldwork and strive to find a job that allows them to continue to do this. Equally importantly though, it allows some students to realise that field work isn't for them. Field work can seem very glamorous when we read about it in magazines or see it in documentaries, but like all science it is repetitive. Add to that occasional harsh weather conditions and biting or dangerous animals and it is understandable that not everyone will love field research. It is better to discover this early in your career, so you can pursue other jobs, keeping in mind that your experience of field work will nonetheless be relevant to a wide range of vocations in ecology and beyond.
- Field work enhances time management and problem-solving skills. Time in the field is costly and so we need to be efficient when doing field work. Also, when doing field work you can virtually guarantee that something will go wrong, be it equipment failure, extreme weather, health scares or problems accessing field sites, so a successful field trip often requires excellent problem-solving skills and resilience.

Here at Lincoln University, we are actually increasing our field ecology classes. A big reason for this is a recent university-wide qualifications reform aimed at adding extra practical classes to the curriculum. Where we previously had one field ecology course (ECOL310 Field Ecology) we now have two: ECOL293 Field Ecology Methods, where students learn a range of techniques to survey plants and animals, and ECOL393 Field Ecology Research, where students apply these techniques to address their own field-based research.

*Mandy and Ian search for insects preying on daisy seeds above the treeline on Mt Faust. Photo: Jon Sullivan*

I'm writing this blog during our annual field research trip to the Southern Alps and as usual our students are tackling a wide range of interesting projects with dedication and gusto. Tristan Girdwood is assessing the vulnerability of beech trees to drought. Carina Pohnke and Jessica Hughes Hutton are measuring several hundred beech trees and saplings to explore spatial patterns related to competition and disturbance. Michael Hargraves is also working on beech forests and is looking at how woody plant diversity changes with distance from ephemeral creeks.

*Erica (left) and Lauren do a five minute bird count at a pest mammal tracking station (note the tracking tunnel and wax tag). Photo: Jon Sullivan*

There are several students studying vertebrates. Bryn Williams is adding to and collating several years of pest mammal monitoring to look at how things have changed with the recent beech mast, Sotir Goxhaj is looking at mammal diets, while Stacey Burnet, Lauren Rodgers and Erica Stokvis are exploring how pest mammal plagues might have impacted bird populations. Zac Taylor and Kendall Sparrow have been doing transects to explore patterns in bird distributions away from human settlement and Mitch Hutson has been walking up hill and down dale recording patterns in deer browse.

Keeping with the beech mast/rodent plague theme, Paula Greer is comparing invertebrate richness and composition in grassland in mast and non-mast years, while Kate Curtis and Sherry Hannah are showing their love for spiders with comparisons across years, habitats and survey methods. Mandy Black and Cecilie Svenningsen are climbing mountains and peering down microscopes to see what insects are eating native and exotic daisy flowers to test the enemy release hypothesis and to see how altitude influences this. Hayley Dalton has been out at night with light traps catching moths in beech forest and grasslands. My colleagues (Jon Sullivan, Nathan Curtis, Mike Bowie, James Ross, Ian Geary, and Kevin Maurin) and I have the best job of all, flitting between groups like NZ fantails, helping whenever needed.

*Like moths to a flame: Sherry (left) and Kate (centre) help Hayley (right) with her light-trapping. Photo: Mike Bowie*

Our students are already excitedly explaining their preliminary findings to all and sundry. I can't wait until we start to crunch the numbers more thoroughly, uncover the patterns in their data and see them present their findings. Based on ongoing field trips to wonderful places on Lord Howe Island, New Zealand's North Island (including Pureora Forest Park, Great Barrier Island, and elsewhere, see here, here, and here), the Lewis Pass, Mt Cass and elsewhere on the South Island, and Australia's coastal heathlands, arid zone and forests and heathlands, it seems that the future of field ecology training is not all bad news.

## WRYBILLS DISAPPEARING FROM GREAT BARRIER

*John Ogden*

Wrybills are tiny waders, and one of very few bird species with a sideways-curved bill. They are found only in New Zealand, where they breed on the braided rivers of the eastern South Island, and migrate to North Island estuaries to feed in the winter. The species is a highly specialized and unusual member of the plover family; its sideways bill allowing it to poke under river pebbles for hidden insects, worms and crustaceans.

Wrybills are truly an iconic New Zealand bird, but sadly, like much of our biodiversity, they are heading towards extinction.

Every year a few wrybills visit Great Barrier, stopping for a few months to feed on invertebrates in the mud at Whangapoua estuary. At high tide they generally hang out with New Zealand and banded dotterels on the Okiwi spit, where I have been counting them since 1999.

Figure 1 says it all: in the decade from 2000 to 2010 wrybill numbers on Okiwi Spit have declined to zero or single birds only. The exceptional count of twenty wrybills in 2000 doesn't effect the validity of these results (the correlation remains highly significant even if it is removed). Moreover, if the slope of the line is extrapolated backwards, a figure of 17 wrybills is 'predicted' for 1980, and 15 were actually counted in March that year (Ogle 1981).

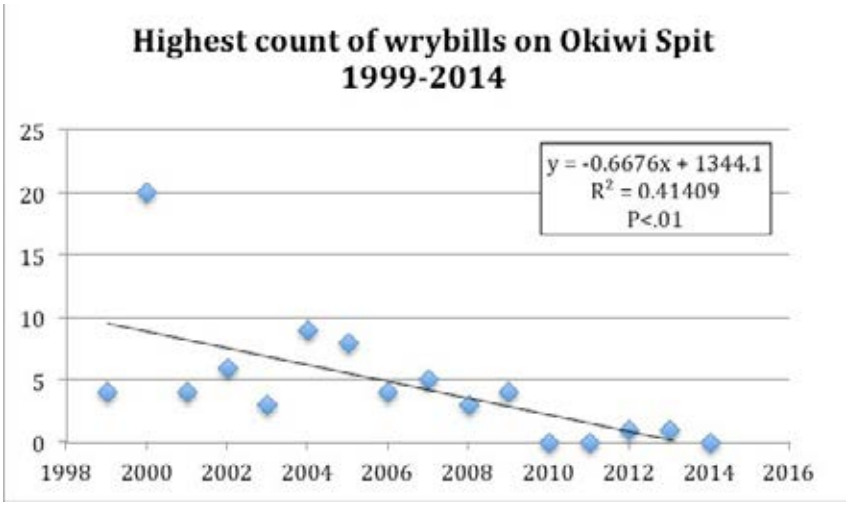


*Fig 1. Highest counts of wrybills on Okiwi Spit, 1999-2014.*

Wrybills are classified as 'Nationally Vulnerable' by the Department of Conservation (Robertson et al. 2012; Dowding, 2013) and showed a population decline from 1985–1999 (Atlas of New Zealand Birds 2007). The predicted future decline is between 10 and 50%. Counts by the Ornithological Society of New Zealand from 2006–2009 demonstrate continued losses (Riegen 2010).

The Okiwi birds might represent 'overspill' from the declining winter flock in the Gulf of Thames, but it appears that this more northerly site will soon be lost.

The main cause of the decline in wrybills is clear: destruction of their breeding habitat on the braided river beds of the South Island (Rebergen 2011). As more water is taken from the rivers for irrigation and dairy farming, the river-beds are invaded by weed plants such as broom, gorse and lupins. The nesting areas of grey pebble banks and flats is reduced, and as river levels fall, predators such as feral cats, stoats, weasels and rats gain easier access. The key to wrybill's survival lies in maintaining enough natural predator-managed and weed-free river habitat in Canterbury and Otago. This illustrates, in a Great Barrier context, the threats facing so many migratory birds, which nest in one place but spend their winters in far distant locations.

### References

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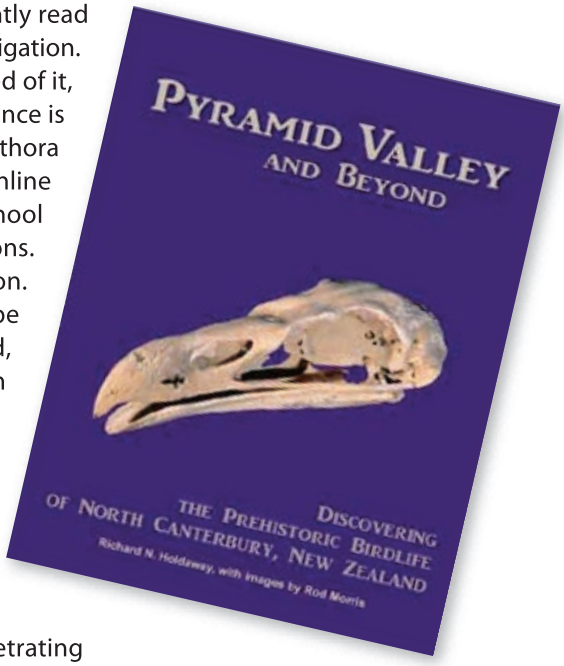
## BOOK REVIEW

### PYRAMID VALLEY AND BEYOND: DISCOVERING THE PREHISTORIC BIRDLIFE OF NORTH CANTERBURY, NEW ZEALAND

**Richard N Holdaway, with images by Rod Morris. 42pp.**
**Turnagra Press, ISBN 978-0-473-30997-8, Published 2015, $25.99**
Available from the author at Turnagra@clear.net.nz, www.palaecolresearch.co.nz or www.scorpiobooks.co.nz

*Reviewed by Murray Williams*




Conveying the fruits of our research endeavours beyond the infrequently read archives that are our science journals I view as being every scientist's obligation. The society that actually funds our research has the right to be informed of it, and to be so on its terms. And a thirst for well presented "popular" science is widely in evidence e.g., in any book shop worthy of the name, in the plethora of well-research and visually stunning documentary films available online and on specialist TV channels, and in the many superb secondary school science projects on display at regional and national science competitions.

Full marks, then, to Richard Holdaway for meeting his obligation. However there are probably few ecologists among us who would be brave enough, or confident enough, to do what Richard has attempted, namely to write, format, publish, distribute and sell this publication entirely by himself. The book trade takes few prisoners and has a well-founded reputation for impoverishing authors and over-optimistic publishers. I can but wish him well!

*Pyramid Valley and beyond* is primarily an explanation of two excavations of moa-rich deposits near Waikiri in North Canterbury—at Bell Hill Vineyard in 2001 and at the previously excavated Pyramid Valley lake bed in 2008. With the help of technologies not available to any of the previous excavators at Pyramid Valley e.g. ground penetrating radar, ancient DNA extractions, these excavations yielded sufficient articulated remains of 4 moa species to help remove the taxonomic fog that had long surrounded this fascinating group of large herbivores, and also to provide a chronology of their entrapment and of local environmental change following Maori settlement. From these excavated remains a true ecology of moa has emerged as well as first insights to their population dynamics and social systems. Richard Holdaway presents an interesting story, particularly well supported by Rod Morris's fine studio images of moa skulls which do rather contrast with the more candid images of excavation activities. After a brief but informative discussion of moa within the wider North Canterbury region the narrative moves to a listing and discussion of 23 other bird groups known to have shared the region before human arrival. Not all of these birds were recovered from the two excavation sites so this half of the book is less the story of the excavations and more about the birds themselves, again superbly supported by Rod Morris's field and studio images. The four-page spread devoted to Haast's eagle is photography of the highest order.

This 42 page, A4 format, twin-stapled book strikes me as a product best suited for readers with little prior understanding of New Zealand's avian pre-history, just as Roger Duff's *Pyramid Valley: the story of New Zealand's greatest moa swamp* has been for almost 3 generations. It is a worthy successor to Duff's, and helps bring a much needed modern interpretation of moa to the fore. I reckon that as a resource for both primary and secondary school students this book will prove particularly informative and stimulating but that is not to suggest its appeal will be confined to that audience. It deserves a much wider readership, including members of NZES.

Twelve years ago I wrote (in *Notornis* 50:244-6) a review of Trevor Worthy's and Richard Holdaway's landmark *The lost world of the moa*. I opined then, as I do again now, that a popular companion volume to *Lost world* was badly needed, and suggested that Graeme Steven's 1988 *Prehistoric New Zealand* was a model worth following. It still is, and that popular account of Holocene New Zealand before human presence is still needed. In *Pyramid Valley and beyond* Richard Holdaway has struck a laudable first spark. I hope he (and others) can get the fire going and place a popular account of our land's ecological story alongside those which Graeme Stevens and fellow geologists have been telling so well.

## NZES AWARDS 2015

### Nominations for Awards for NZ Ecological Society, 2015

### HONORARY LIFE MEMBERSHIP

Honorary life memberships are conferred from time to time to recognise excellence and long-standing service in the study or application of ecological science in New Zealand. The selection committee will consider candidates' eminence in their scientific field, their contribution to original research or the application of such research in New Zealand, and the extent of their association with the Society.

Please email nominations for this award to George Perry at awards@newzealandecology.org by Wednesday 1 July 2015. Nominations must include a detailed statement of support outlining the candidate's contribution to their field and the society. Nominations must also be seconded.

### TE TOHU TAIAO – AWARD FOR ECOLOGICAL EXCELLENCE

Nominations are invited for the Te Tohu Taiao award (formerly NZES award). This award is presented annually to recognise individuals who have made an outstanding contribution to the study and application of ecological science. The award is made to the person(s) who have published the best original research regarding the ecology of New Zealand or its dependencies (including the Ross Dependency), or to the person(s) who have made a sustained and outstanding contribution to applied ecology, particularly conservation and management.

*NB*. This award used to be presented to members only but a council decision in 2006 supported the recommendation to make non-members eligible.

The Society awards recipients:

- $500 contribution towards attending the next NZ Ecological Society Conference
- $500 prize

Recipients of the award are invited to present a paper at the next annual NZ Ecological Society Conference and at the next annual conference of the Ecological Society of Australia.

Please email nominations for this award to George Perry at awards@newzealandecology.org by Wednesday 1 July 2015. Nominations must include a detailed statement of support summarising the nominee's contribution to ecological science.

### ECOLOGY IN ACTION

The Ecology in Action award reflects one of the primary aims of the society: the promotion of the study of ecology and the application of ecological knowledge in all its aspects. This award was established to recognise individuals who have made outstanding contributions to the promotion of ecology, including communication, education and transfer of ecological science at the grass roots in NZ or the Pacific. The Society would like to recognise such individuals' achievements in promoting ecology and education, with landowners, community groups, politicians, councils and others. The society recognises the important role of the transfer of ecological knowledge in changing behaviours and achieving practical protection and restoration of biodiversity.

The Society awards recipients:

- $500 contribution towards attending the next NZ Ecological Society Conference
- $500 prize

Recipients of the award are invited to present a paper at the next annual NZ Ecological Society Conference. The work can also be given profile via a media item, or highlighted in the NZ Ecological Society newsletter.

Please email nominations for this award to George Perry at awards@newzealandecology.org by Wednesday 1 July 2015. Nominations must include a detailed statement of support that outlines the nominee's contributions to the practice and application of ecology.

### OUTSTANDING PUBLICATION ON NEW ZEALAND ECOLOGY

The purpose of this award is to recognise a publication made in the last three years that has made an outstanding contribution to our understanding and/or management of ecosystems (terrestrial, aquatic or marine) in New Zealand or its dependencies (including the Ross Dependency). Publications may take the form of peer-reviewed journal articles, book chapters or books. They are not restricted to articles in the *New Zealand Journal of Ecology*, although these are eligible for nomination.

The Society awards recipients:

- $500 prize

Nominations for 2015—including a statement outlining the publication's significance and the role of the nominee (typically the senior author or sole author of the paper) in producing it—should be emailed directly to George Perry at awards@newzealandecology.org by Wednesday 1 July 2015.

## ROYAL SOCIETY OF NEW ZEALAND CANTERBURY BRANCH AWARD FOR COMMUNICATION IN ECOLOGY

The RSNZ Canterbury Branch offers an award to celebrate individuals that have shown excellence in communicating the science of ecology. The awardee will have demonstrated an outstanding ability to communicate their research, either through mainstream media, by producing popular articles and/or presenting their work to non-scientific audiences and will preferably be a member of the Ecological Society (but in the absence of a worthy recipient, the award can be presented to non-members)

The RSNZ (Canterbury) request that the recipient, on accepting the award, be willing to present their research either at the next Ecological Society Conference (after presentation of the award) or be willing to present their research as part of the RSNZ - Canterbury Branch lecture series at some time in the future.

The RSNZ awards recipients:

- $500 prize

Please email nominations for this award to George Perry at awards@newzealandecology.org by Wednesday July 1st 2015. Nominations must include a detailed statement of support summarising the nominee's contribution to excellence in the communication of ecological science.

*The RSNZ Canterbury branch has been in existence since 1862 when it was originally called the Philosophical Society of Canterbury. The RSNZ Canterbury Branch aims to lift the profile of research in Canterbury and actively promotes participation in science related events. The Canterbury Branch is technically a subcommittee of the main RSNZ but we manage our own membership and lecture program. We have representation on several regional science bodies and give opportunities for students to attend international conferences by providing travel grants. In addition, we run a monthly lecture series which gives local scientists an opportunity to showcase their work and learn from invited international speakers. The mandate of the organisation has been continually evolving and this year the council seek to broaden their scope by aligning with other science organisations. For more information please see: www.canterbury.rsnzbranch.org.nz*

## THE NIGEL BARLOW FUND

As a quantitative ecologist Nigel Barlow made significant contributions to our understanding of the dynamics of New Zealand's ecosystems, especially in the context of understanding animal population dynamics. He won the NZ Ecological Society Award (now the Te Tohu Taiao award) in 1986 for his sustained contributions to applied ecology in NZ. The Nigel Barlow fund is derived from a generous bequest made by Nigel, and is designed to provide support to international (including Australian) students studying ecology in New Zealand. The fund provides support for direct costs associated with research such as, but not limited to, field costs and analytical expenses, but excluding fees, living expenses and conference costs. Applicants must be enrolled in a NZ university for postgraduate study (MSc, PhD or equivalent) in ecology and can apply for up to $2500.

Your application needs to include a statement outlining how the funding will assist your research and a supporting statement from your academic supervisor. A template for this application is available on the NZ Ecological Society website.

Once the funds have been used the successful applicant will need to provide a short report outlining how the funds were used to be published in the newsletter of the NZ Ecological Society.

Applications close: 30 May 2015

Decision to be made: early July 2015

# CONFERENCE REPORT

## CITIZEN SCIENCE 2015

*Monica Peters, PhD Candidate, University of Waikato*
*www.monicalogues.com*
*@monica_a_peters*

Citizen Science 2015 marked the inaugural meeting of the Citizen Science Association from Feb 11–12 in San Jose, California. Over 600 participants from 25 different countries converged to discuss the increasing contribution of citizen science to both scientific research and education.

Participants included scientists-turned-communicators, educators, researchers, technology specialists, community citizen science practitioners, program managers and many others. Notably absent were policy makers and environmental managers—those who benefit from data produced by volunteers within citizen science projects.

The conference opened with a key note by Dr. Chris Filardi who currently directs the Pacific Programs at the New York-based Centre for Biodiversity and Conservation. Dr. Filardi illuminated his personal journey from being a bird-focussed scientist working in remote Papua New Guinea to one who gradually began to understand, appreciate and

reframe his research questions within a far broader socio-ecological context. Situating science squarely within society formed a meta-theme of the conference and was presented through many different formats and narratives.

Participants were spoiled for choice: six concurrent sessions comprised speed talks, panels, workshops, 'standard' presentations and storytelling. A lengthy poster session wrapped up Day One and a Bioblitz in downtown San Jose featured in Day Two. Topics included: research and evaluation; broadening engagement; lifelong learning; digital opportunities and best practices. Within these topics we learned about participatory action research with nomadic herders in central Asia and tourists in the Caribbean; citizen science as a vehicle for social justice; sophisticated volunteer networks providing equally sophisticated biological data for management decision-making… in all a bewildering array of projects with community volunteers in the starring role. Creative means for engaging volunteers and evolving projects to enable both changing social and scientific needs to be met, also provided much food for thought.

The use of technology was inevitably a well-explored theme with each session generating a continuous commentary via twitter and other social media channels. The spectrum of technology ranged from crowds and clouds, to literally sellotape and string. At the DIY end were community mapping projects in utilizing a tethered balloon with a basic digital camera dangling below – the shoot button depressed with a strategically placed stone held in place with a rubber band. At the opposite end of the spectrum was online gaming involving tens of thousands of participants around the globe mapping the brain.

So where does New Zealand fit into all of this? I provided an overview of "grassroots" citizen science, in other words the monitoring carried out by community groups within their environmental restoration projects. I used kiwi call counts in Northland as a case study to demonstrate the integration of volunteer data with wider iconic species recovery efforts, and contrasted this with habitat data collection. The latter mostly remains within groups and is not shared with resource managers let alone science providers.

The 3 New Zealanders present were all from universities: Waikato, Victoria and Lincoln. Given the current interest (and investment) in citizen science from the government, sending staff – even just one person, would have opened a world of opportunity. Citizen science is global and New Zealand has the potential to play a strong role though leadership and strategic direction for citizen science in New Zealand need to be addressed first.

Postscript

*Muki Haklay from Extreme Citizen Science has included links to other conference posts on his own blog, www.povesham.wordpress.com Twitter followers may be interested in viewing the #citsci2015 conversation thread.*

## NZES CONFERENCE 2015


The 2015 NZES annual conference is being held in Christchurch this year from Monday 16 November to Thursday 19 November at the University of Canterbury. Field trips and workshops will be run on Monday, followed by the welcome reception that evening. The formal conference programme will commence on Tuesday with a morning opening symposium on non-government conservation initiatives in New Zealand. An exciting mix of symposia and contributed sessions will run through the rest of the conference. The poster session will follow the Tuesday afternoon sessions, followed by an evening public lecture on the role of philanthropy in New Zealand conservation (by the NEXT Foundation). The conference dinner will be held on Wednesday evening. A writer's retreat at the University of Canterbury Cass field station is on offer from Friday to Sunday for those interested in improving their writing skills for publication. The student day will be held on the Sunday prior to the conference (November 15th).

The opening symposium will explore the role that non-government groups (e.g. individuals, community groups, companies, iwi, Trusts) can play in achieving positive conservation outcomes in New Zealand, given the magnitude of the biodiversity crisis we are facing and the lack of sufficient government funding. Presentations will include examples of different non-government conservation programmes (Friends of Flora, Banks Peninsula Conservation Trust, Reconnecting Northland, Cape Kidnappers Sanctuary, iwi conservation management) as well as perspectives from an ecological scientist and the Department of Conservation. Peter Kareiva (Chief Scientist, The Nature Conservancy) will also provide an international perspective to this symposium.

**Key dates**

| | |
|---|---|
| 20 March | Call for symposia closes |
| 30 April | Call for workshop proposals closes |
| June | Call for oral presentation and poster abstracts |
| June | Registration opens |
| 14 September | Call for oral presentation and poster abstracts closes |
| 30 September | Abstract acceptance status advised |
| 11 October | Early-bird registration closes |
| 16 November | NZES2015 conference starts |

*Further information can be found at: http://newzealandecology.org/events/upcoming-meetings.*

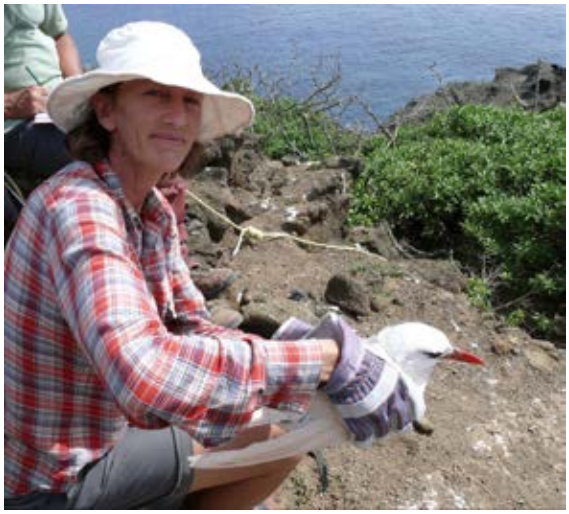
## NEWS FROM COUNCIL

### Change in newsletter editor for the NZES

Holding a full time field job with long stints away from home, Jane has found it difficult to give the newsletter position the full attention it deserves. Therefore, after less than a year in the role, Jane is stepping down from the newsletter editor position and will be replaced by Cate Macinnis-Ng. Jane has enjoyed receiving a vast array of ecological stories and news items during her time as newsletter editor and would like to thank members for their contributions.

### New council members for 2015

*Secretary: Sandra Anderson*



Sandra is the Field Ecologist at Auckland University, where she is involved with undergraduate teaching and postgrad research in ecology. Her research interests include the role of animal-plant mutualisms in maintaining ecosystem function, pollination, seed dispersal, and the dynamics of pest invasions. She is currently enrolled in a PhD looking at the filtering effect of native animal losses on current plant assemblages. Sandra has been a long-standing member of NZES and is now serving as Secretary.

*Newsletter Editor: Cate Macinnis-Ng*

Cate is a plant ecophysiologist specialising in climate change impacts on forest water and carbon cycling. Using measurement and modelling approaches, Cate is currently focussing on the effects of drought on native vegetation. Cate was recently appointed as a Lecturer in Ecology in the School of Biological Sciences at the University of Auckland. Prior to that, Cate was a senior research fellow in the School of Environment at the UoA.

## POSTGRAD PROFILES

### James Brock

*James is a PhD candidate at the University of Auckland, supervised by Bruce Burns, George Perry and Bill Lee.*

*James on a break from surveying tree fern communities.*

Tree ferns are a prominent feature of the New Zealand landscape and are significant within New Zealand culture, yet almost nothing is known about either their autecology or synecology. To date the Pteridophyta have largely been excluded from studies into the dynamics and function of forest communities, yet tree ferns represent a substantial proportion of the native forest biomass. The premise of my research is that tree ferns exert a significant influence on community assemblages.

My initial focus was on the black tree fern *Cyathea medullaris* and studied the North Island phenomenon of large stands of this species occurring in areas of disturbed ground or fallow pasture. By comparing vegetation plots from over 166 sites of both tree fern and kānuka dominated early successional habitat I was able to show that early successional communities beneath tree ferns support different vegetation to that recorded under kānuka; and that the successional pathway leads to different mature forest communities: tree fern initiated systems precipitate broadleaved tree canopies, whereas kānuka systems precipitated conifer dominated mature forest. Analysis of extensive soil sampling revealed that kānuka systems had significantly greater evidence of a 20th century fire history and that tree fern systems had significantly greater amounts of available nutrients in the organic layer.

My current research involves i) establishing the influence of photosynthetically active radiation and soil available phosphorus on the germination of silver fern *Cyathea dealbata* and katote *C. smithii* spores and establishment of gametophytes to ascertain whether these variables contribute to the spatial separation between these species; and, ii) whether understorey *C. dealbata* influences the forest regeneration niche and acts as an ecological filter selecting for the establishment of certain canopy species.

I anticipate submission of my thesis and publication of my research findings from early 2016.

### Hendrik Schultz

*Foraging behaviour and wintering strategy in Brown Skuas (Catharacta lonnbergi) of the Chatham Islands*

I am a PhD student at the University of Auckland. After finishing my degree in Biological Oceanography in Kiel, Germany I worked as an on-board Naturalist in Iceland. It was Iceland's stunning wildlife that inspired me to study seabirds in New Zealand.

The Brown Skua (*Catharacta lonnbergi*) is the predominant avian predator on South East Island (Chatham Island Archipelago). Its territoriality and unique breeding system make it a particularly interesting study species. The Chatham Island population harbours not only breeding pairs, but also communal breeding groups as well as non-territorial 'floaters', which play an important buffering role for birds that are lost from breeding territories. Within the scope of my PhD-thesis, I use high-resolution GPS-technology to investigate fine-scale foraging patterns and behaviours of skuas during the breeding season. I am particularly interested in how such patterns vary among sexes, breeding status and social rank (i.e., breeding vs. non-breeding birds). Furthermore, I study broad-scale movement patterns to see whether migration takes place in the Chatham Island population. Until recently, it was thought that skuas of the Chatham Islands occupy the island all year long. However, during recent winter visits by the Department of Conservation, only few birds were found within their territories. During a first pilot season in 2014, I have attached 30 light-based geolocators to individual birds. Data from these devices will shed light on potential migration routes and wintering areas. Stable isotope ratios of blood and feather samples will complement tracking data and add to our knowledge about foraging grounds and prey composition during breeding and wintering.

This project is funded by Forest & Bird, the Centre for Biodiversity and Biosecurity (CBB) and the School of Biological Sciences, the University of Auckland. I hold a three-year New Zealand International Doctoral Research Scholarship (NZIDRS) from Education New Zealand (ENZ). The study is supported by Moriori and DOC Chatham Islands. I would like to thank Ian Southey and Rebecca Hohnhold for their outstanding support during the 2014 field-season.

**Leilani Walker**

*Leilani Walker is a PhD student at the University of Auckland supervised by Gregory Holwell and Cor Vink. She is funded by the University of Auckland.*

*Examining a Cambridgea web in the Waitakere Ranges. Photograph courtesy of Edin Whitehead (www.edinz.com)*

One of the challenges and privileges of studying terrestrial invertebrates in New Zealand is how little we know about so many species. This is particularly the case for New Zealand sheet-web spiders (*Cambridgea*) which is perhaps unsurprising given that they are nocturnal. Many are surprised when informed that there are 29 species in total distributed throughout mainland New Zealand and on several offshore islands. However, many will be familiar with their large sheet webs which occur in native bush. These webs consist of a horizontal sheet guyed from below with a mess of knock-down threads above the web. The sheet can reach up to a metre squared in the North Island species, *Cambridgea foliata*.

Despite being first discovered in the 1800s and having a detailed taxonomy, there remains little known about *Cambridgea* behaviour and evolution and it is this gap which I hope to address in my doctoral project. More specifically, I would like to characterise the behaviours around reproduction including male-male competition and male-female interactions. I also have a particular interest in sexual selection and evolution of male weaponry (in the case of spiders, their jaws). Therefore I would like to compare weapon morphology across several focal *Cambridgea* species and to create a molecular phylogeny in order to make meaningful comparisons of these morphologies across species.

This will involve an integrative approach, combining behavioural observations, morphological analyses as well as molecular techniques in order to create a more holistic understanding about what selective pressures are acting on individual spiders and how these pressures have generated the characteristics which are evident today.

**Bridgette Moffat – BSc (Hons)/Ph.D Candidate; University of Waikato**

*If mice and their detrimental activities could be deterred by a cheap, humane and accessible resource, New Zealand would make unquestionable advances in species and ecosystem conservation. What if this resource was light?*

*Bridgette Moffat setting up field equipment at Maungatautari Ecological Island to investigate foraging behaviour of mice under small areas of illumination.*

As a behavioural ecologist I have spent the last year investigating this question and observing the activity of mice under illumination. In collaboration with Professor Joe Waas (University of Waikato) and John Innes (Landcare Research), my honours dissertation assessed if artificial manipulations of light could provide conservation managers opportunities to limit the activity of feral mice through inducing risk avoidance behaviour.

We combined Giving-Up Densities (GUDs) with video observations of foraging frequency and duration to determine if captive mice had a preference for foraging under illuminated or dark conditions. We then used GUDs at a pest fenced sanctuary (Maungatautari, New Zealand) to determine the effect which illumination had on the foraging behaviour of feral mice. Both captive and wild mice exhibited avoidance behaviour in response to artificial illumination. Based on the results of this preliminary study, illumination could be useful for protecting nesting sites, deterring mice from damaged exclusion fences until repair, preventing reinvasion at fence terminus zones of peninsula sanctuaries and minimising unwanted immigration to ecologically intact offshore islands. Possible limitations of illumination include mice habituating to the stimulus, attraction of other unwanted pests such as stoats *(Mustela erminea)*, and unwelcome impacts on valued non-target native species.

Illumination therefore provides a novel tool for point source deterrence of mice that could be useful for pest-fenced sites in New Zealand where mice are problematic and I look forward to publishing this study later this year.

## THE NOTICEBOARD

### DELVE INTO THE WORLD OF BUGS AT THE OTAGO MUSEUM

*Bugs: the Mega World of Minibeasts*

**Free exhibition, Otago Museum**

*20 December 2014–10 May 2015*

Make way for the small but mighty, the misunderstood but essential, the weird and the wonderful—this summer at the Otago Museum. Bugs: the Mega World of Minibeasts promises to introduce visitors to the lives of these tiny, strange and special animals that make up over 80% of the world's species. The exhibition opens on Saturday 20 December and runs through 10 May 2015.

Bugs—or, as the exhibition defines them, arthropods including insects, arachnids, terrestrial crustaceans and myriapods—have developed extraordinary adaptive skills and some peculiar behaviours over the millennia, like navigating by the stars, super-strength and near-perfect camouflage. These incredible abilities underpin the exhibition. Otago Museum Curator, Natural Science Emma Burns hopes that by presenting a more complete picture of bugs as the talented and valuable animals they are, the exhibition will encourage bug appreciation.

"Bugs get a bad rap in most people's minds," says Burns. "But they are fascinating on so many levels, and are vital to our environment and economy: without bugs, there are no humans. We hope that people will leave the exhibition with a new respect for their abilities, their place in our world or their beauty."

An interactive bug gym, created in collaboration with the team at Otago Polytechnic's innovation workSpace, will give visitors a chance to see how they match up against some of the bug world's heavyweights. They can compare their strength to a dung beetle's, their silk-spinning ability to a silkworm's, and can try to jump as a high as a froghopper.

Over 800 specimens from the Museum's collection feature in the exhibition, in the form of pinned specimens and vials of bugs preserved in alcohol. A cockroach house, a dung beetle display and a huhu terrarium give visitors a chance to observe bug society. A large selection of minutely detailed macro images, as well as close-up photographs by renowned wildlife photographer Rod Morris, capture a level of detail usually hidden from the human eye, and reveal the unexpected elegance to be found in bugs.

### 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 donation to the Kauri Fund, whether $10, $20 or $50, now or when you renew your subscription. You can contribute in two ways:

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

Internet banking: credit to New Zealand Ecological Society, account 06 0729 0465881 00, identify the payment as "Kauri Fund".

## UPCOMING MEETINGS

**The 75th NZ Bird Conference**
*"The People and the Birds"*
*Blenheim (Marlborough Convention Centre)*
***30 May to 1 June 2015***
Join us for this milestone and celebrate not only our country's unique birds, but also the people who have shaped our organisation over the last 75 years!

Details and online registration are available on www.osnz.org.nz.

**The Statistical Ecology and Environmental Monitoring (SEEM) 2015**
*Queenstown, New Zealand*
***22–26 June, 2015***
(www.maths.otago.ac.nz/SEEM2015).
The conference will bring together experts in statistics, ecology and environmental sciences.

It is a privilege to have Bryan Manly as our honorary speaker, along with a world-class list of invited speakers:

Murray Efford (NZ)
Kerrie Mengersen (AUS)
Shirley Pledger (NZ)
Ken Pollock (USA)
Andy Royle (USA)
David Warton (AUS)

We are still accepting abstracts (that can be uploaded after a registration form is completed) at http://www.maths.otago.ac.nz/SEEM2015/registration.php. A link outlining payment options is also available after registering, with an early bird deadline of April 30 NZT.

For further details about the conference including information about Queenstown, please visit the conference website or contact seem@maths.otago.ac.nz with any queries.

We hope that you will come and join us.

The SEEM2015 Local Organizing Committee

**Southern Connection 2016**
***18–23 January, 2016***
*Punta Arenas, southern Chile*
https://www.umag.cl/southernconnection2016/
I hope to see lots of you there.
Best regards
Professor Glenn Stewart, Lincoln University
President of Southern Connection

**6th International Symposium on Frugivory & Seed Dispersal**
*"Ecological Science at the Frontier: Celebrating ESA's Centennial"*
***21–26 June 2015***
*Drakensberg, Kwazulu-Natal, South Africa*
http://www.fsd2015.ukzn.ac.za/

**New Zealand Plant Conservation Network conference**
*"Nurturing our conservation roots for generations to come"*
***28–30 October 2015***
*Dunedin, New Zealand*
www.nzpcn.org.nz

**Ecological Society of Australia annual conference**
***29 Nov – 3 Dec 2015***
*Adelaide, Australia*
http://www.ecolsoc.org.au/conferences/esa-2015-annual-conference

**British Ecological Society annual conference**
***13–16 December 2015***
*Edinburgh, Scotland*
http://www.britishecologicalsociety.org/events/current_future_meetings/2015-annual-meeting/

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(Effective from November 2014)

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## SUBMISSIONS TO THE NEW ZEALAND ECOLOGICAL SOCIETY NEWSLETTER

Contributions from NZES members are sought in the form of:

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

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

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

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

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

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

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



**Content for the June 2015 issue of the NZES Newsletter is due by Friday 5 June 2015.**

NEW ZEALAND ECOLOGICAL SOCIETY

# MEMBERSHIP APPLICATION

**PLEASE COMPLETE ALL SECTIONS AND EMAIL OR POST TO THE ADDRESS BELOW**

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## B MEMBERSHIP DETAILS

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

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☐ Tick if you wish to make a donation to the Barlow Fund (see NZ Ecological Society website for details)

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