



NEW ZEALAND ECOLOGICAL SOCIETY

Newsletter

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FROM THE EDITOR

Kia ora koutou! For this newsletter, we have three very different feature articles that will, I hope, provide something for everyone. Margaret Stanley's contribution on urban ecology highlights the value and significance of ecology outside protected areas, while Mark Davis explains the new guidelines prepared for DOC for identifying and assessing ecological values. I've put together a piece on some of the benefits of Twitter for ecologists. If you're not using Twitter already, you might be surprised by the power of social media for scientists. If you are on Twitter, check out the questions at the end of the piece and email Tim Curran with your responses so we can build a more connected community in NZ.

Read on for a couple of great book reviews and the latest on the NZES2015 conference. I've reintroduced the 'Across the Tasman' section with some news from our friends in Oz and we have another great collection of postgrad profiles (thanks to the team at Massey!). Time is running out for the annual awards so make sure you get those nominations in pronto. Students and ECRs, do check out the travel grant available for the Southern Connection Conference and there is also a travel grant for the NZES2015 conference. Thanks for all the great contributions for this issue. Let me know if you have any ideas or feedback. Catch you in September.

Cate Macinnis-Ng

ILLUSTRATE ECOLOGY



Farewell Spit ephemeral wetland, prominently featuring Eleocharis neozelandica. Photo: Melanya Yukhnevich.

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The deadline for submissions for the next issue of this newsletter is Friday 11 September 2015.

CONSERVATION OUTSIDE PROTECTED AREAS. URBAN ECOLOGY

Margaret Stanley, Senior Lecturer, School of Biological Sciences, University of Auckland (@mc_stanley)

This article first appeared on the Ecology Ngātahi Blog, www.aucklandecology.com

What's the point of urban ecology? This is a question I get asked a lot. Many ecologists believe 'real ecological research' occurs outside of city boundaries, preferably the further the better from a city. While the focus of ecologists and conservationists is often on biodiversity outcomes within protected areas or in rural areas, the perceptions and values of city-dwellers disproportionately (in terms of numbers of votes!) influence decision-making around management of biodiversity outside cities. Therefore, the often limited experiences city-dwellers have with nature, such as seeing a tūi in their backyard, can greatly affect biodiversity outcomes. However, we also know that there is an increasing disconnect between people and nature as we become more urbanised. How many city-dwellers have visited a regional or national park in the last year? Reconnecting people with nature in the city not only benefits their mental and physical wellbeing, but can also have positive effects on how they value biodiversity and take action on conservation issues. The 2008 Erfurt Declaration also recognises the intrinsic value of urban ecosystems. Globally, urban areas can be hotspots for biodiversity—cities are often built in very fertile areas, and can be centres of evolution and adaptation.

There is a range of exciting and interesting research questions to be asked about biodiversity in cities. While some drivers of change are unique to cities, most are just modified versions of what's happening outside cities (e.g. habitat loss) or are agents of change originating from cities (e.g. pollution, invasive species). My lab group are tackling questions, such as whether people feeding birds in their backyards can restructure urban bird communities, how light pollution might influence ecosystem function (eg. pollination) and how robust connectivity is for bird-dispersed plants within fragmented urban landscapes.

Two of the most frustrating things about urban ecology are: firstly, you can't escape people (more social scientists please!); and secondly, there are no large, homogenous landscapes in which to put untold replicates. Experiments are critical for untangling

drivers and interactions, but conducting experiments in urban landscapes can be very challenging: the high levels of variability over short distances, negotiating access to sites from many landowners/householders, and the high risk



Josie Galbraith's project on the effects of backyard bird feeding on bird communities. Washing lines for hanging bird bags and deck furniture for banding and microchipping birds are a blessing for the urban researcher!



Road ecology research often requires the use of an orange flashing light on your car! Esther Dale (L) and Dr Cheryl Krull (R) during Cheryl's postdoc research on rodent behaviour around roads.

of vandalism to equipment. Even the main health and safety fieldwork issues are unusual: domestic dogs and dubious people, rather than getting lost in the bush or being injured far from a hospital. But if it all comes together, the results can be great. Watch this space within the next week or two for PhD student Josie Galbraith's PNAS paper, where we report on our 18-month bird feeding experiment in suburban Auckland.

There's also an unfortunate but realistic reason why urban ecology is attractive to ecologists. Science is getting more expensive, funding is declining, offshore islands and national parks are expensive to get students to. Urban ecology is a much better option in terms of science output/\$ of funding. And then there's the unexpected bonus of doing fieldwork in the city – the ability to order pizza for the cold, hungry field crew...

DEVELOPING A CONSISTENT APPROACH TO ASSESSING ECOLOGICAL SIGNIFICANCE

Mark Davis (consultant ecologist), and Nicholas Head (Department of Conservation).

Guidelines for assessing and identifying significant terrestrial ecological values (including wetlands) have been prepared for the Department of Conservation (Davis et al., in press) and will be published electronically on the DOC website. The impetus for their preparation was the need for a consistent approach to assessing significance within the Department, given its core responsibility for halting the decline of indigenous biodiversity. It also recognised the need for assessments to use the full range of criteria, including representativeness.

Allied to this was the knowledge that indigenous biodiversity is continuing to decline in New Zealand. While pests and weeds are often seen as the main causal factors, this does not adequately recognise the on-going degradation and losses occurring beyond Public Conservation Land. This also raises questions about the consistency and effectiveness of Regional Policy Statements, District Plans and consent processes, given territorial authority responsibilities for maintaining indigenous biodiversity (Section 31(1)(b)(iii) of the Resource Management Act). Closely associated with this is the recurring issue of what is significant under Section 6(c) of the RMA?

The guidelines outline the context for assessing significance, including the state of indigenous biodiversity, the intent of the NZ Biodiversity Strategy and the differences between significance and importance (which are often confused). Government policies, RMA Plans and non-statutory policies are explained, and their relationships to DOC's statutory responsibilities are clarified. They also briefly consider 'new' approaches being promoted, such as those in the Proposed One Plan of Horizons Regional Council.

When assessing significance, the importance of it being undertaken at the appropriate scale(s) is emphasised. Crucially, ecological values should be assessed at the local scale as it best recognises ecological variation across the country. On this basis the ED framework is endorsed as the critical scale for making Section 6 (c) assessments, though regional and national scales are also important and assessments at any of these scales can trigger significance. In addition to Ecological Regions and Districts, other assessment frameworks that are discussed include Land Environments of NZ, Freshwater Ecosystems of NZ and the national priorities for threatened indigenous biodiversity. Ecosystem and habitat classifications are also discussed, given their use in the One Plan and their promotion as a means for identifying significant sites.

A wide range of ecological assessment criteria have evolved nationally and internationally, and these are described with the importance of using multiple criteria being emphasised. The importance of context is highlighted, so that assessments recognise the fundamental value of induced and secondary ecosystems in contemporary NZ, particularly beyond Public Conservation Land. The proper meaning of representativeness is emphasised, i.e. the identification of the commonplace, as distinct from 'best examples' or restricting representative interpretations to what is effectively a rarity assessment. Naturalness is retained as a criterion, with the proviso that it must be assessed within the ED context so that significance is properly recognised in highly modified districts, i.e. the same threshold of naturalness does not apply across all EDs. It is further explained that some ecologists and territorial authority plans have discarded this criterion or subsumed it within other criteria, e.g. sustainability or long-term viability, or representativeness. Unfortunately this usually results in modified secondary ecosystems being rated poorly and then discarded.

It is also made clear that long-term ecological viability, fragility & threat and management input are management criteria and should not be used for assessing significance.

Significance thresholds are discussed and examples of how to apply significance assessments in various situations around NZ are provided. More detailed examples are provided in an Appendix, so that staff can appreciate the full rationale behind the identification of significance using multiple criteria.

The appendices also include some key case law examples such as the Proposed One Plan and the West Coast regional wetlands case, both of which have been promoted as examples of good practise for identifying significant ecological values. In addition to summarising key points from the examples, commentary is provided where their approaches are considered to be flawed.

The guidelines will shortly be published for use by DOC staff, though it is recognised that they may also be of interest to other agencies and people outside of DOC. It is intended that a presentation on the subject of assessing significance will be made at the forthcoming NZES conference.

Some key points to emerge from the guidelines

While there is a substantial amount of information within the guidelines, the following points highlight some important issues related to significance and maintaining indigenous biodiversity.

- A benchmark datum (often 1840) is problematic and should not be used when assessing significance, as the focus is on maintaining indigenous biodiversity which is often secondary or seral in nature.

- An increasing trend is to misinterpret the representativeness criterion such that it becomes a rarity assessment, e.g. a site is given a high representative value not because it represents common values, but because its values are much reduced.
- The use of ecosystem or habitat classifications is a flawed approach for identifying significant sites, especially when strictly tied to representativeness. This is because they are largely based on primary ecosystems or habitats and they do not properly recognise local complexity. As a consequence, their use often results in important secondary or seral communities not being recognised for their contribution to maintaining the full range of indigenous biodiversity.
- In general there appears to be an increasing focus on threatened and uncommon values, inadequate recognition of the inaccuracy and contextual scale of remote sensing and spatial data, the use of a restricted range of criteria, and setting unacceptably high thresholds for significance, e.g. condition and size thresholds.

Reference

Davis, M.; Head N.J.; Myers, S.C.; Moore, S.H. In press: Department of Conservation guidelines for assessing and identifying significant ecological values. Department of Conservation, Christchurch, New Zealand.

TWEET, TWEET! TWITTER FOR ECOLOGISTS

Cate Macinnis-Ng, School of Biological Sciences, University of Auckland (@LoraxCate)

Imagine a system that allowed you to keep up with the latest papers in your field, stay in touch with colleagues and collaborators down the corridor or on the other side of the world, publicise your new paper and discuss a technical issue or coding problem with experts across the globe. Such a system does exist. It's called Twitter. Many are quick to dismiss Twitter and others are enthusiastic evangelists. Truth is, used in the right way, Twitter can be a very powerful tool for scientists, especially those living in an isolated part of the world like New Zealand. These are my top seven reasons why I'm glad I gave Twitter a chance.

1. Eco-friendly conference participation

We can never attend all the conferences we would like to. Next best thing is to play along at home by following the relevant hash tag. Often there will be people live tweeting in the audience so you can get a feel for the work being discussed without leaving your office. Much better for the environment too. Some large conferences (like IntEcol in London 2013) only take audience questions for keynote talks via Twitter. A great way to weed out the 'this is not really a question but here are my extended thoughts' type 'questions'.

2. Keeping up with the cool kids

Twitter is also a great way to stay in touch with all the cool people you meet at conferences. Track their latest work, let them know about yours, find out what conferences they are going to next. It's not stalker-ish at all, I promise! Include photos and videos in your tweets for extra interest.

3. Find your tribe

You can also track down some of the best researcher in your field across the world. New Zealand being such a small research community, it's never a bad thing to have contacts and connections from different places. Some of the best scientists from Europe and the US are now aware of me and the work I do thanks to Twitter. That said, I've also made some great connections with people at the other end of the country and even in the same city.

4. A bit of a giggle

What better way to combat frustration about sexism in science from OWGs (old white guys) than with some humour? Check out #distractinglysexy in response to Sir Tim Hunt's comments about women being a problem in the lab because they fall in love and cry. #girlswithtoys is another fun one and for some home-grown humour, have a look at #perryontwitter.

5. Get a job or find an employee

Plenty of people post job vacancies on twitter and they get retweeted widely. It's a great way to publicise a position or find the perfect job. Check out #postdocjobs and #graduatejobs.

6. Find out the latest research

It's easy to quickly discover the people tweeting about the information and material that interests you. There are a few people whose tweets I check regularly because they seem to read (and tweet about) all the best papers in my field. A simple way to stay up-to-date on the literature. The challenge is finding time to read all the amazing papers!

7. Publicise your work

With altmetrics (alternative metrics including tweets, media attention, blogs and other non-traditional citations) becoming more mainstream and being pushed by many of the journals now, tweeting about your own research is essential. If you're lucky, some collegial types will retweet or write their own tweets about your paper, boosting your altmetric score. Some people only tweet about their own papers. That's obviously not cool. It's far better to add to the community by being supportive, engaging in discussions and answering questions to build a valuable following and then you can start talking about what you do.

How to sign up?

It's as easy as going to twitter.com and following the sign up prompts. The system guides you through step by step, even suggesting people to follow based on your interests. It can be a good idea to lurk and watch what is going on before jumping in but don't be too afraid about that first tweet. Just dive in and have some fun!

But isn't it a time waster?

Sure, you can spend hours on Twitter if you want but it doesn't have to be a time suck to be used effectively. You don't need to read everything that all the people you follow are saying. The big stuff often comes out through lots of retweeting and you can just check what the most interesting people are saying rather than everyone. Check out trending topics and the new 'while you were away' function picks out a few tweets for you from people you interact with regularly.

And is it just for young people?

Postgraduate students should be tweeting about their work to build a profile but there are plenty of more established scientists on Twitter too. Think Nobel Laureate Prof Peter Doherty (@ProfPCDoherty), eminent ecologist Prof Kevin Gaston (@KevinJGaston) and Physics Professor Anthene Donald (@AntheneDonald). Really, it's never been easier to engage with the wider world.

Twitter etiquette and jargon

There are plenty of great resources describing how to behave and what all the acronyms mean. For starters, try <http://mashable.com/2013/10/14/twitter-etiquette/>. This is a nice general guide. Most of the advice is common sense really but it's good to think about what tone you want to convey before you dive in. Get down with the lingo here <https://support.twitter.com/articles/166337-the-twitter-glossary#> and to decipher acronyms, you can simply google that term for an explanation.

Who to follow?

Once you've signed up, don't forget to follow @NZES2015 for the latest info on the conference.

To help you find kindred tweeps, we're collecting a database of NZ Ecologists on Twitter and looking at how people use it and why. The next newsletter will have a list of active tweeps and some of their tips on make the most of the twittersphere. If you are on Twitter, please email Tim Curran with your responses to these questions.

1. What is your name, Twitter handle, and current position?
2. How long have you been on Twitter?
3. Why did you join Twitter?
4. What are the best aspects of being on Twitter?
5. Are there any downsides to being on Twitter?

Reply to timothy.curran@lincoln.ac.nz Newbies and advanced users are welcome to respond.

Any questions? Send me a tweet. Happy tweeting!

BOOK REVIEWS

CAMERA TRAPPING – WILDLIFE MANAGEMENT AND RESEARCH

Eds. – Paul Meek & Peter Fleming

CSIRO Publishing. 2014. ISBN: 9781486300396 - AU \$ 89.95 pp. 392

Reviewed – by Patrick Garvey, University of Auckland

Camera trapping has progressed immensely since pioneers first rigged tripwires to bulky devices more than a century ago. In recent years, advances in digital photography and sensory technology have fuelled a revolution in camera trapping for wildlife research. This proliferation of cameras has had material benefits with, for example, the extension of the known range of endangered species, leading to the designation of new protected areas. Camera trap research, however, is not without its pitfalls, as inappropriate use or misleading interpretation of data can pose serious risks

to management decisions. *Camera trapping - wildlife management and research* helps to address these issues with a collection of 32 papers from the inaugural camera trapping colloquium that took place in Sydney in 2012. The book has a distinctive Australian feel, but the breadth of national studies coupled with the range of international research, ensures that it will be valuable to practitioners worldwide. Credit must go to the editors, Paul Meek and Peter Fleming, both with years of experience testing camera traps for research and monitoring purposes, for rounding up high quality material in a reasonable timeframe.

The popularity of camera traps is understandable easy to understand, as they provide a non-invasive method for detecting an array of cryptic species. The first section of the book highlights the versatility of cameras for researching wildlife with a series of case studies. From jaguars in the Peruvian jungle to snow leopards in Bhutan, camera traps have documented some of the planet's rarest creatures in habitats that have historically defied attempts to collect accurate information. Case studies are not limited to the exotic, as there are also examples of small mammal surveys and research assessing the control of invasive species. The second section examines some of the potential pitfalls that lie in wait for the unwary practitioner. Cameras are imperfect observers, limited by specifications and placement. This may distort the conclusions drawn from a study, so reviewing best practice will help to reduce these risks. The third section focuses on study design, with examples from a variety of taxa and habitats. The idiosyncratic nature of a project means that one design cannot fit all, but readers should find examples that suit their own requirements. The final section provides instructive examples of data management and analyses, the crux of any project, with information that can drastically reduce the time dedicated to these tasks. The concluding chapter highlights the issues of greatest concern for practitioners and the future directions of camera trapping research.

As you might anticipate from a book on this topic, there are some wonderful images of wildlife. These serve to illustrate the best aspect of the technology, where elusive wild animals are photographed unaware or undisturbed. Attributes associated with images, such as the time of the capture, can be analysed with the help of best practice examples to improve our understanding of animal behaviour. Images from camera traps are also excellent communication tools, as they can increase awareness of the study species or projects. There are examples of the growing use of camera traps in education and citizen science, where community engagement is generated through involvement with trapping projects.

This book is a rich source of information, bringing together advancements and applications from contemporary camera trapping studies. Given the speed of developments some of the technical information will be superseded in time, but many of the principles for effective camera trap research will remain unaffected. The authors note in the introduction that this book is intended to cover a broad and valuable range of topics on camera trapping, and this has clearly been achieved. Practitioners will find techniques that can be specifically related to their own requirements, which will facilitate standardisation of survey methods. The book will serve as an important reference for researchers, wildlife managers and students, especially those new arrivals to the world of camera trapping.

FOR THE LOVE OF RIVERS: A SCIENTIST'S JOURNEY

Dr. Kurt Fausch, with illustrations by Kristine A. Mackessy and Shigeru Nakano. 279pp.

Oregon State University Press, ISBN 978-0-87071-770-3 (paperback) ISBN 978-0-87071-771-0 (e-book), Published 2015, \$22.95

Available at <http://osupress.oregonstate.edu/book/for-love-of-rivers>

Reviewed by Brandon Goeller, University of Canterbury

"For the Love of Rivers: A Scientist's Journey" by Kurt D. Fausch traverses the physical and philosophical boundaries of rivers and streams, saliently and elegantly advocating for the conservation of running waters. Globally, freshwater habitats and the fish, amphibians, and invertebrates that inhabit them are experiencing greater declines than the most impacted terrestrial ecosystems. Fausch, a stream ecologist and professor in the Department of Fish, Wildlife, and Conservation Biology at Colorado State University, USA, shares his 33+ years of exploring the vital linkages of streams and their surrounding landscapes, 'riverscapes'. Fausch vividly depicts the tribulations, triumphs, and discoveries by him and others in the mountains and plains of the American West and in the forests of Northern Japan.

Decades of rigorous science through observation, questioning, and experimentation have helped Fausch and his colleagues to understand the inter-connectedness of stream ecosystems and streamside forests. In "For the Love of Rivers", Fausch blends popular science writing and emotionally-stirring prose, beckoning readers to fall in love with nature. Fausch professes how humans are deeply connected to streams and rivers, and how the loss of these invaluable resources means losing part of our humanity. Fausch states: "Like trees and music and good health, streams and rivers are a gift to us as humans... In the end, I believe we will need to understand how and why we love rivers, if we hope to conserve them."

Shining amongst the colourful accounts of the people, places, and projects that Fausch engages with is an inspiring friendship and collaboration with Japanese fish ecologist Shigeru Nakano. Fausch, Nakano, and their colleagues endured countless hours of gruelling field work observing trout in cold, wet, and unpredictable environments to produce holistic and rigorous scientific understandings of food web ecology. For example, the movement and behaviour of stream insects influences their predators like fish, birds, bats, lizards, and spiders in ways that can change the flow of energy and nutrients throughout a riverscape, which is known as 'reciprocal subsidies' in the scientific literature. Following Nakano's tragic death in a storm in the Sea of Cortez in 2000, Fausch continued to travel to Japan to console Nakano's family and to mentor his students. As "For the Love of Rivers" professes, humans' innate fascination and love of rivers transcends culture and time, and it can ignite fellowship across continents and cultures.

Few ecologists and nature enthusiasts are rewarded opportunities to pursue and to share their passions in a global context. I had the pleasure of interacting with Dr. Fausch while he was writing "For the Love of Rivers" during a sabbatical stay at the Leibniz Institute of Freshwater Ecology and Inland Fisheries in Berlin, Germany. As a young stream ecologist, I was inspired by not only the fascinating scientific discoveries that Dr. Fausch and colleagues have unfolded, but also by Dr. Fausch's ability to communicate and connect people from all walks of life to the beauty and fragility of stream ecosystems. As part of Freshwaters Illustrated, Fausch collaborated on the environmental documentary 'RiverWebs', which has been broadcast to over 100 million US households since its release in 2007 (<http://www.riverwebs.org/>). "For the Love of Rivers" moves beyond the RiverWebs story to inspire a deeper human connection to nature. Fausch's message is black and white: We must act now to conserve and restore rivers and streams or risk losing these gifts for future generations.

"For the Love of Rivers" was produced with support from the National Science Foundation, the Sitka Center for Art and Ecology, the H. J. Andrews Experimental Forest, Colorado State University, and Freshwaters Illustrated. It is published by Oregon State University Press. For more information about the book, including news updates, blog entries, and videos, visit <http://www.fortheloveofrivers.com/> or Twitter @4theluvofrivers.

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 TAI AO – 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

ACROSS THE TASMAN

News from the Ecological Society of Australia (ESA)

The ESA Hot Topics in Ecology (<https://www.ecolsoc.org.au/hot-topics>) initiative includes a range of factual overviews of ecological issues that is overseen by an editorial board. Contributions consist of a one-page summary and a supporting list of literature. Ten topics have been covered so far and there is a strong invasive species theme but burning and pollination also feature. The documents are relevant for policy development, land management and enhancing community knowledge on these topics.

To stay up to date on all things ecological from across the Tasman, you can access the ESA Bulletin here <https://www.ecolsoc.org.au/publications/bulletin>. Members of NZES are entitled to a discounted membership for ESA as part of a reciprocal agreement between the societies. ESA membership includes eight issues of the journal, Austral Ecology amongst other benefits (<https://www.ecolsoc.org.au/member-services>).

NZES CONFERENCE 2015

From the conference organisers

We are excited to be hosting the NZES 2015 conference at the University of Canterbury in the rejuvenating garden city in November this year. We have an excellent programme planned, including field trips, workshops and social events as well as the complete line-up of symposia, poster and contributed paper sessions. The website with the draft programme can now be accessed at nzes2015.org. One of the standout events of this year's conference will be the opening half-day symposium on non-government conservation initiatives including presentations from Peter Kareiva (Chief Scientist, The Nature Conservancy, USA) and Lou Sanson (Director-General, DOC). There are two other events that we believe will also be highlights. First is the superb dinner location which we are proud to announce will be held at the Cardboard Cathedral in the heart of our recovering city, including a surprise special dinner speaker. The other is an evening public lecture by Devon McLean of the NEXT Foundation, talking about the emerging role of philanthropy in conservation. The entire programme so far is looking very stimulating. We look forward to seeing you here at the University of Canterbury in November to celebrate the 64 years of our society's ongoing contributions in ecology and conservation. Who needs a round number to celebrate!? See you in Christchurch!

Key dates

Note these have changed slightly from those advertised previously.

1 June—Call for abstracts and registration OPEN

1 September—Call for abstracts closes

14 September—Abstract acceptance status will be advised

29 September—Early-bird registration closes

16 November—conference starts

For further information: nzes2015.org or follow us on Twitter: @NZES2015

NZES CONFERENCE STUDENT TRAVEL GRANT 2015

NZES student conference Travel Grant applications are now open.

These are for post-graduate students from New Zealand tertiary institutions wishing to apply for financial assistance in getting to the NZES annual conference in Christchurch this November.

Please see <http://newzealandecology.org/awards-grants/student-travel-grants> for information on how to apply. Applications close on 10 August 2015.

POSTGRAD PROFILES

Tess Roberts—Is restoration an ecological success?

I'm Tess Roberts, and I'm currently working on my Masters in Ecology under the supervision of Dr Jill Rapson at Massey University, Palmerston North. My thesis looks into mature native restoration plantings and their long term ecological success.

Restoration was developed early in New Zealand, as our indigenous and unique fauna and flora succumbed to the pressures of reduced habitat availability and introduced pest species. However, restoration can be an extremely resource intensive option, and whilst numerous benefits such as community engagement and education no doubt result, the success in restoring ecological function remains unknown.

Earlier native restoration plantings are now established, with closed canopies and unassisted seedlings regenerating underneath. This allows some insight into whether ecological restoration is succeeding in its objective in heading towards a desired, representative and functioning native ecosystem.

My study measured twelve established native restoration plantings throughout New Zealand. Each restoration planting is compared against an area of comparable spontaneous succession and an undisturbed reference site. Compositional, structural and functional measurements were made and then compared between the restoration sites and sites undergoing unaided succession. Discrepancies found between restoration plantings and naturally spontaneous succession may lead to slower, and or, divergent successional trajectories from the desired reference community.

Future ecological restoration projects need to incorporate a more strategic scientific framework. This can be achieved by incorporating the concept of succession and the processes that drive this natural phenomenon into restoration methods, ensuring long-term ecological success in restoration.



Assessing forest on Kapiti Island as a reference to the Mana Island restoration project.

Sylvia Paola Villacís Lozada—Dynamics of sand dune wetlands on the Fox-Tangi coastline

I am doing a masters in Environmental Management. The aim of this research is to see the dynamics of the sand dune wetlands in the Tangimoana-Foxton coastline using remote sensing and image processing techniques. The present project will record the wetlands through time and monitor the changes to investigate their dynamics and their ability to host communities of rare plants. The project includes three study sites: Foxton beach, Himatangi and Tangimoana beach (Tawhirihoe Scientific Reserve).

Remote sensing and image processing techniques is a useful tool for mapping land cover changes over time. The research methodology is based on recording, classifying and mapping sand dune wetlands in a long period of time. Historic sequences of aerial photos since 1492 are being processed. The results derived from aerial photographic interpretation will give a better understanding of the spatial distribution, form process and movement of sand dune wetlands in the three study sites. Additionally, it will provide facts for further monitoring studies and conservation policies in the sand dune ecosystems.



Siobhan Lynch—Baselining the phyto-diversity of the Kahuterawa Restoration project

My name is pronounced "Sha-vorn" and I am completing my first year of postgraduate studies with Jill Rapson in the Ecology Group, Massey University.

Kahuterawa stream runs through the boundary of Linton Military Camp and Massey University land. The military, Massey University and Horizons Regional Council are partnering a 10 year restoration project to restore biodiversity and aquatic habitat whilst mitigating erosion that significantly impacts the Lower Kahuterawa reach. There are only



Siobhan at work in the forest.

6 native bush remnants throughout the Lower Kahuterawa restoration area, all in various states of human impact. Each remnant is a starting point for protection and enhancement, while also providing ecosourced seed for plantings in the wider setting.

I am recording information on plant species diversity, recruitment, forest structure, and age structure in each of the 6 bush remnants. I have used the recce method which is a common method used for long term monitoring of native forests in New Zealand. The survey will provide quantitative information on the current condition of the native bush remnants, each of the plots have been marked with stakes so reassessment in the future is possible.

Melanya Yukhnevich—Ephemeral dune wetland turf species

I am currently working towards the completion of my MSc in Ecology, studying at Massey University in Palmerston North under the supervision of Dr Jill Rapson. I am looking at turf-forming herbs of New Zealand's ephemeral dune wetlands: their ecology, habitat preferences and environmental ranges.

Dunes are naturally dynamic and slowly move inland from the coastline. They provide habitats for plants which can tolerate moving substrate, strong desiccating winds and a greatly changing environment. Only a few native species flourish in these harsh environments. Within the New Zealand dune sequence, wetland hollows can be found of various sizes. These areas are low lying where the sand is close to the water table. New Zealand has a group of native plants which are well adapted to these environments. This study focused on *Gunnera dentata*, *Limosella lineata*, *Llaeopsis orbicularis*, *Selliera radicans*, *Selliera rotundifolia*, *Ranunculus acaulis*, *Isolepis basilaris*, *Isolepis cernua*, and *Myriophyllum votschii*. A nationwide survey was conducted to determine the distribution of these specialist dune slack species and the differences within these slack habitats.

The ability to survive differing levels of burial and waterlogging is of crucial importance to the survival of these turf species. Plants growing in dune slacks are subjected to seasonal burial and waterlogging. These species of turf plants occupy an environment of fluctuating water tables, where submergence and drought are the main environmental influences. These plants were experimentally buried and were supplemented with nutrients producing a significant result for the burial and nutrient interaction. An experiment testing the effects of waterlogging was also conducted as well as the effects of shade or full light and the interaction between them. The waterlogging and shade experiment produced a significant result for the waterlogging treatment only when both *Isolepis* species were excluded from the data set. A small experiment was also conducted to assess the impacts of trampling of these plants. No significant results were found for the tamping experiment.



Melanya and field assistant Matt Dickson assessing focal plant species' presence within a quadrat in a Foxton dune slack.

Unique dune vegetation has been found along a considerable amount of New Zealand's coastal systems; however since European settlers arrived, the native dune vegetation has been slowly destroyed by invasive species and land clearing. Dune slack species are controlled by the water regime of their habitat and these differences are expressed by their distribution patterns. The distribution survey and experimentation on these plants has contributed to furthering the understanding of these species and their habitat choices.

Angelina Smith—Vehicle damage to Rangipo Desert vegetation

I have just completed my MSc in Ecology, I studied at Massey University, Palmerston North, under the guidance of Dr Jill Rapson. I studied the damage to vegetation caused by vehicles at Rangipo desert, Tongariro National Park.

The desert like environment of the Rangipo Desert is a fascinating ecosystem for ecologists, but also makes a great playground for off road vehicles. The vegetation in this area is slow growing, and damage to vegetation is not apparent until some time later, long after the perpetrators have left the area. Vegetation can be directly and indirectly affected by vehicles. Vehicles were more likely to drive over low-lying vegetation where limbs are broken and roots dislodged; this was a direct form of damage. Indirectly vehicles increase the erosion process by damaging intact surfaces,



Measuring the growth of cushion plants.

allowing wind to lift particles at an increased rate when compared to undamaged, intact, substrate. This increase soil erosion results in plant burial of both small and larger plant species; in some areas mature trees were buried. Plant burial increased areas of bare substrate, resulting in pockets of isolated vegetation. This has the potential to result in reduced pollinator visits to the resulting smaller pocket of vegetation. This is a very simple explanation of vehicular damage.

Different plant species reacted differently to different treatments trialed, and species also reacted differently to the seasonal timing of the treatments. Treatments set up in April just before the winter dormancy period had different results to those treatments set up in November, before the heat of summer. Weather patterns made a difference to the rate of erosion. There was less sand movement when vehicles ran over wet sand in windy conditions, than when vehicles drove over dry sand in windy conditions.

Matthew Dickson—Are low producing plant species sequestering more carbon than high producing plant species?

I enjoy all outdoor activities and sports, particularly tramping, hunting, fishing, and surfing. Coming from a family farm I have a passion for the land, and am interested in forest, freshwater, (and more recently!) alpine ecology. I am completing an MSc in Ecology with Dr Jill Rapson.

Increasing atmospheric [CO₂] and global climate change have made carbon cycling and soil carbon storage a critical research field. Carbon sequestration (CS), the annual addition of carbon to soil, results from the balance between plant productivity (CO₂ fixed in photosynthesis) and decomposition (CO₂ released during litter breakdown). Investigating this balance is imperative to understanding the carbon cycle and its management. Although high-producing plants fix more carbon than low-producing plants, low producing plants (such as *Chionochloa*) may be sequestering more carbon, perhaps due to producing plant litter that is more resistant to decomposition. The aim of this project is to test this.

New Zealand's tussock grassland is dominated by the *Chionochloa* genus, which contains 23 endemic species variable in growth form, productivity, and litter quality. Measuring productivity, decomposition, and litter quality traits across this genus provides a good opportunity to test this hypothesis. Plant productivity has been calculated by annual field growth measurements of tillers, and decomposition is being measured in a lab experiment by incubating soil and litter and collecting respired CO₂. Plant litter quality is being assessed by measuring levels of secondary plant metabolites and compounds resistant to decomposition.



Plant productivity measurements, Chionochloa rubra subsp. rubra var. inermis, Mount Taranaki.

Matthew Krna—The responses of *Chionochloa* (tussock) productivity and decomposition across altitudinal gradients

I have just completed my PhD research with Dr. Jill Rapson using New Zealand's montane tussock grasslands as a proxy for climate change to understand impacts climate can have on carbon sequestration.

Carbon sequestration is one of the most important concepts in climate change today, since it's a natural process of removing and storing the ever increasing atmospheric carbon dioxide. It may help to ameliorate the subsequent anthropogenic alterations to climate across the planet, notably increasing temperatures and alterations in precipitation patterns. Montane systems are an ideal location to investigate species responses to alterations in climate across altitudinal gradients, since temperature and precipitation can vary across short horizontal distances. *Chionochloa* species can exhibit ecocline differences in growth across their altitudinal range which can influence their tissue's chemical and constituent composition, and this in turn can influence decomposition rates of litter. By investigating the ratio of productivity to decomposition as an indicator for carbon sequestration, the research indicates productivity will be more greatly influenced by alterations in climate than rates of decomposition. Warmer temperatures are likely to increase *Chionochloa* species' productivity more than decomposition and yield greater sequestration of carbon.

Note: Matt has recently left for the States and a new job with the Oregon climate change experiment.



Matt chopping fresh, standing plant litter prior to filling out decomposition bags to monitor litter loss.

THE NOTICEBOARD

TRAVEL GRANTS: VIII SOUTHERN CONNECTION CONGRESS 2016

Universidad de Magallanes, Punta Arenas, Chile,

18–23 January 2016

Funds to support two travel grants for early-career ecologists (including advanced PhD students) to attend the VIII Southern Connection Congress 2016 have been contributed by the organising committee of the previous congress (held in Dunedin in 2013).

GRANT DESCRIPTION

Travel grants can be used towards conference fees, travel to and from the conference venue, accommodation, and meals during the conference. Up to two grants of \$2225 NZD will be awarded. Grants will be administered by the New Zealand Ecological Society (NZES).

CRITERIA FOR ELIGIBILITY

- Applicants must be early-career ecologists, either up to 5 years post-PhD, or presently enrolled and at least 18 months through a PhD. They must be New Zealand citizens or residents, or PhD students at New Zealand universities.
- Each successful applicant must present an oral paper at the congress. Afterwards, each applicant must write an article about the congress for the NZES Newsletter, summarising some of the key symposia and presentations.
- To receive the award, proof of congress registration and abstract submission is required.

HOW TO APPLY

- Applications must include (1) a covering letter explaining your goals in attending this conference, (2) a current curriculum vitae, (3) your conference abstract (submitted or to be submitted to the congress), and (4) proof of New Zealand citizenship or residency and PhD completion date, or present PhD enrolment in a New Zealand university. Letters from two academic referees must be sent under separate cover. Evidence of activity within the NZES, promotion of the study or application of ecology, or other support and assistance to young ecologists will be an asset. Membership of NZES is not required.
- Applications and referees' letters should be sent by email to Awards@newzealandecology.org by midnight on 6 July 2015 (New Zealand Standard Time).
- We aim to notify successful applicants in time for the congress's early-bird registration deadline on 31 July 2015.

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

International Society of Root Research Symposium

"Roots down under: Belowground solutions to global challenges"

6–9 October 2015

Canberra, Australia

www.isrr9.com.au

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

New Zealand Freshwater Sciences Society and Australian Society of Limnologists Joint Conference 2015

23–26 November 2015

Wellington, New Zealand

<http://nzwaterconference.com/>

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

Southern Connection Congress 2016

18–23 January, 2016

Punta Arenas, southern Chile

Go to the congress website here:

<https://www.umag.cl/southernconnection2016/>

I hope to see lots of you there.

Best regards

Professor Glenn Stewart, Lincoln University
President of Southern Connection

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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

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

Content for the September 2015 issue of the NZES Newsletter is due by Friday 11 September 2015.



MEMBERSHIP APPLICATION

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

A PERSONAL DETAILS

Circle Title: Prof Dr Mr Mrs Ms Miss	Last Name:	First Name(s):
Mailing Address:		Post Code:
E-Mail:		
Phone Bus:	Fax Bus:	Phone Private:

B MEMBERSHIP DETAILS

Occupation/Expertise:
Name of Employer:

C TYPES OF MEMBERSHIP AND SUBSCRIPTION RATES (2013)

(please tick the class for which you qualify)

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

<input type="checkbox"/>	Full	Receive journal and newsletter	\$90.00* p.a.
<input type="checkbox"/>	Unwaged Member	Is available only on application to Council for full-time students, unwaged or retired persons. Unwaged members may receive the journal but must specifically request it.	\$55.00* p.a.
<input type="checkbox"/>	Overseas Full	Receive journal and newsletter	\$115.00* p.a.
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<input type="checkbox"/>	Tasman Linkage	Available only to members of the Ecological Society of Australia. Tasman Linkage members may receive the journal but must specifically request it.	\$55.00* p.a.

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

Make cheques payable to: NZ Ecological Society

Bank account details for direct payment: 060729 0465881 00 (make sure your name is included)

- Tick if you wish to make a donation to the Kauri Fund (see NZ Ecological Society website for details)
- Tick if you wish to make a donation to the Barlow Fund (see NZ Ecological Society website for details)
- Tick if you don't have an email address to receive the newsletter which is sent out electronically

The New Zealand Journal of Ecology is printed digitally and in hard copy. Please indicate which option you prefer. Receiving the journal digitally will allow more funds to go towards Society projects like the Kauri Fund.

Digital Hard copy

Signature of Applicant: _____ **Date:** _____