Ecological Society Newsletter

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FROM THE EDITORS

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Hello, welcome to your new-look newsletter, the first of 2006! Based on feedback from our readers, we have replaced the column format so that the newsletter is easier to read online. The preferred option for receiving the newsletter is now electronic; you can still request this by emailing the NZES secretariat (email) or by checking the appropriate box in you subscription form. We still welcome comments for any other changes to the newsletter you can think of. In future issues we will also be including a new section that will appear in each issue designed to inform our readers of important and interesting things on the society website.

Speaking of the website, an announcement from our talented and overworked Webmaster:

Website helpers needed

The New Zealand Ecological Society website, www.nzes.org.nz, has expanded greatly over the past four years and its popularity has increased four fold. We have lots of great ideas for further expansion but it's getting too big for one volunteer to manage. It's time to share the load. Now is your big chance to join in.

Who? People not afraid of their computers. No prior knowledge of building websites is necessary, although it would be useful. An internet connection will be needed (modem connection is fine).

What? Depending on your skills and devotion to the cause, you could do anything from being in charge of maintaining the contents of one webpage (e.g., our links page or updating HotScience), to helping redesign the look and feel of the site, to being involved in building a whole new area of the website (e.g., our long planned student pages). What you do and how much time you put in would be up to you. An hour every month would be a useful contribution.

Why? Become familiar with, or learn more about, how websites work. Make a contribution to sharing New Zealand ecological knowledge with other ecologists and with the public. People call you webmaster and occasionally give you muffins.

It's got to be good!

For more information, or to volunteer your services, please contact current NZES webmaster, Jon Sullivan, at webmaster@nzes.org.nz, or work phone (03) 325-3838 ext. 8147.

Preparations for the 2006 joint conference with the Australian ecological society are well underway, thanks to the dedicated team in Wellington. Make sure you out the call for papers and the conference website in this issue.

If you have any questions or comments about the newsletter, we encourage you to put it in the form of a letter to the editors.

INSIDE:

The AGM of the NZES will be held during the annual conference – the date, time and room will be advertised in the next newsletter and on the conference website. All members are urged to attend. The minutes of the 53rd AGM can be found in the December 2005 issue of the newsletter www.nzes.org.nz/newsletter/no115.html. Members are reminded that notices of significant motions that are to be put by members need to be submitted to council at least 28 days prior to the AGM, and preferably in time to be included in the newsletter that precedes the AGM (issue no. 117 due out in May, deadline 1 May). After that time, following the society rules, no new motions may be proposed, discussed, or put to vote except by consent of more than two-thirds of the members present.

The deadlines for submissions for the upcoming issues of this newsletter in 2006 will be: 1 May, 7 August, and 13 November.

COUNCIL MEMBER PROFILE

At last year's NZES AGM, Karen Denyer was co-opted onto the NZES Council as Advocacy/Education Officer. Karen has taken the opportunity here to introduce herself. Welcome Karen!

Hi, I'm Karen Denyer, terrestrial and wetland ecologist at Environment Waikato (that's the Waikato Regional Council), and the newly appointed Science Communication officer on the NZES Committee.

Most council ecologists have to be generalists, and I provide technical ecological information on a wide range of issues including restoring wetlands and forest fragments, the value of wildlife corridors, assessing significance of natural areas, monitoring vegetation change, the effect of wind farms on wildlife, and even how to create a geothermal wetland. I provide information to a wide audience, not just other staff like our planning or consent processing staff, but also our politicians (councillors), school groups, individual landowners, other scientists, regional forums, and the general public. Through this role, I have developed a range of educational and informative (how-to) products over the years, including factsheets, web pages, field days and public talks. Some of the more interesting talks I've given include one on marine reserves to a group of 5 year-olds, another on the value of wetlands to a group of over 60s, and, most challenging, a talk on NZ biodiversity to a group of non-English speaking Japanese exchange students (and speaking Japanese is not one of my skills!).

My new role on the Committee is developing, but to keep the job manageable we see it as focussing on the NZES objective to "promote the application of ecology" rather than our other objective to "promote the study of ecology". It's about communicating from the scientists to non-scientists, rather than scientist to scientist (currently catered for by our journal and conferences).

To do this we firstly need to determine what the role of NZES is in promoting the application of ecology. What issues / aspects of ecology should we promote? To whom? Using what means? Probably most importantly is the question "and why?". I've received lots of solutions from members, but really need to work out 'what is the problem?'. What do we hope to achieve by promoting ecology? A more informed general public? Better decision making in public policy? Better / more sustainable management of natural resources? More successful restoration projects? Which of these is the most important or urgent? Should we try to predict important upcoming issues that a better understanding of ecology can contribute to (like global climate change), or should we position ourselves to rapidly respond to hot topics (like the public reaction to the Auckland Regional Council plan to ban several palm species from sale and distribution)?

I'm keen to hear your views to help develop a Science Communication strategy (doesn't that sound like the words of a bureaucrat!!). If you would like to contribute you can email me at karen.denyer@ew.govt.nz

NZJ ECOL REVIEW ARTICLES

By Peter Bellingham and Duane Peltzer
Joint Scientific Editors, New Zealand Journal of Ecology.

The *New Zealand Journal of Ecology* welcomes review papers and we encourage new submissions. Reviews present an opportunity to synthesise what is known about key and controversial topics in ecology. Subjects of recent reviews include the ecology and cultural significance of bracken (McGlone et al. 2005) and the impact of brodifacoum on non-target wildlife (Hoare & Kelly, in press). Gábor Lövei of the journal's editorial board has also undertaken to oversee the journal's Forum section and again we welcome new submissions. Forum contributions may adopt a lighter prose than standard papers to attract a wide readership. They may present new ideas or new ways to interpret existing information, as in an evaluation of the intermediate disturbance hypothesis (Wilson 1994). Forum contributions can also evaluate applications of ecology, as in an assessment of significance for biodiversity conservation on private land (Norton & Roper-Lindsay 2004). The journal also welcomes responses to published Forum contributions.

ECOLOGY ACROSS THE TASMAN 2006

Ecology Across the Tasman 2006, a joint conference of the Ecological Society of Australia and the New Zealand Ecological Society, will be held at Victoria University, Wellington, New Zealand, 27 August – 1 September 2006.

This is the third joint conference of the New Zealand and Australian Ecological Societies. It will enable people from all sectors of ecology to interact and exchange information, and to discuss current and envisioned developments in ecology.

A four-day scientific programme is planned. Responding to popular demand, the conference will feature breaking-edge science, so make sure you help make it happen by getting those paper, poster or symposium-topic proposals in by 5 June 2006. Online submission available now on the web.

To complement the formal conference, there is a varied and vibrant social programme that promises to impress. These social events will provide a great opportunity for you to catch up with old and new colleagues, and experience aspects of Maori culture. The welcome function on Sunday will include a traditional kapa haka (Maori song and dance) performance, on Monday there will be Posters & Pizza, Tuesday a Maori feast and Wednesday the conference dinner—check out the web page for details.

Conference field trips offer a great chance to break up the conference and understand local ecology. Whether you want to view landscapes, native birds, threatened plants, restoration projects, predator fences or even get your hands dirty and help out, Wellington offers a great range of sites within easy reach of the city. There is something for everyone—make your choice on the conference website.

The traditional Student Day, when students have the opportunity to present to their peers, will be on Sunday 27 August at the conference venue. Register for the student day on the conference web site.

www.vuw.ac.nz/ecology06.

Dates: Sunday 27 August – Friday 1 September 2006

Venue: Victoria University of Wellington

To find out more, and to register for the conference, visit the **conference web site**: www.vuw.ac.nz/ecology06.

CALL FOR PAPERS – ECOLOGY ACROSS THE TASMAN 2006

Ecology Across the Tasman 2006, a joint conference of the Ecological Society of Australia (ESA) and the New Zealand Ecological Society (NZES), will be held at Victoria University, Wellington, New Zealand, 27 August – 1 September 2006.

A four-day scientific programme is planned plus exhibitions, social events and field trips to some of Wellington's major ecological attractions.

You are invited to offer a paper or symposium topic to *Ecology Across the Tasman 2006*.

See conference web site: www.vuw.ac.nz/ecology06 for all of the details.

Online submission of abstracts and symposia topics, and registration is now available.

INVITED ARTICLES

By Derek Craig
Derek Craig is a postgraduate student at the School of Geography and Environmental Science, University of Auckland and has an undergraduate background in Archaeology & Geography from the University of Auckland. His Environmental Management thesis is supervised by Dr Neil Mitchell. He has worked with beneficial insects for the horticultural industry and is currently Chairman of the Northern branch of the NZ Tree Crops Association. Derek presented this opinion at the student day of last years NZES/FSS conference in Nelson.

Paradigms in Restoration: Integrating diverse ecological views to create a sustainable natural landscape

I began 2005 preparing an ecological restoration plan for the University of Auckland's 60-hectare property bordering the Leigh Marine Reserve north of Auckland (Figure 1). Through this work it has become apparent that the broader goals of ecosystem enhancement and functionality cannot be achieved by concentrating effort into tree species selection while overlooking many other aspects of ecological systems. In this article I give a critique of current restoration approaches.

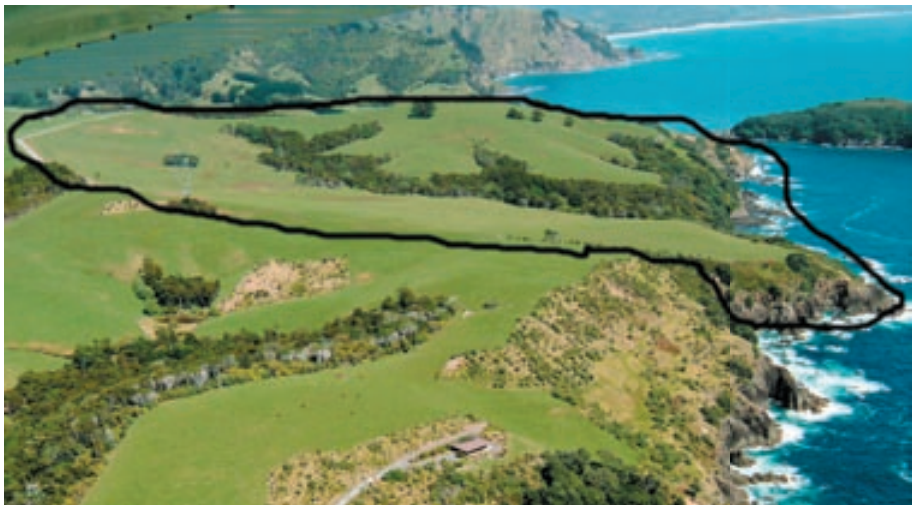

Figure 1. Restoration site: University of Auckland property (outlined) bordering the Leigh Marine Reserve, north of Auckland.

Restoration costs

Most restoration tends to be based on academic arguments of what should or should not be part of a re-created landscape, rather than the monetary realities of what these plans cost to implement. The Forest Research Institute costing of planting shrub and shrub/canopy mixed species at 1.5 to 2m spacing is between $18 – 44,000 per hectare (Bergin & Gea 2005). Two replanting schemes east and west of the Auckland University farm have failed due to weed encroachment. This is a very real threat in many farm sites turned over to be restored. Again, the time and money needed to eradicate the last weed can be exorbitant and ongoing control is often needed. In addition, pest control can be a very expensive and long-term proposition, draining funds and labour. The ongoing time costs of monitoring flora and fauna often deplete the human resources that would rather be focused on the more high profile areas, such as tree planting or faunal reintroduction. These costs limit the chances of long-term success by reducing the likelihood of complete ecological restoration being achieved. Many local initiatives flounder due to the harsh economic realities of time and money needed to achieve a successful long-term restoration. I suspect that the public is unaware of the true cost of civic restoration projects.

(Lack of) Adaptive Management

Many restoration schemes are unwilling to adapt to new situations outside the original plan. For example, on Tiritiri Matangi Island, the dual effect of Pohutakawa being easy to cultivate and very high planting survival rate has led to a monoculture in many areas. Options of selective thinning to allow a more diverse under-planting have been rejected due to the strict management scheme that protects all native plants at any cost. This rigidity also does not allow new research to alter management style – Ensis native timber trials have shown that most canopy species do not need nurse crop shade to grow well (Steward 2005); it is the shelter from harsh winds that is more important.

What are we trying to create?

Restoration plantings may eventually become established forest, but at present they are far more like edge communities—high light, exposed conditions in a diverse shrubland. These restoration communities do not work or react like established rainforest because many important species are not present. For example, ferns and orchids, which comprise one third of the species in old growth rainforest, are rarely even mentioned in replanting plans, thus planted diversity is never achieved ** (Kirk 1868; Kirk 1878; Esler 1978; Ogden 1983; Auckland Botanical Society 1992).

** The majority of floral surveys carried out in both the 19th and 20th century of the Leigh / Hauraki Gulf area showed the same proportions of trees/shrubs versus orchids and ferns.

Where are the mycorrhizal fungi necessary for tree survival? New Zealand *Nothofagus* species have over 170 species of mycorrhizal fungi associated with them and many of the mycorrhizal fungi are uniquely associated with individual plant species. Dickie and Reich (2005) showed that forest mycorrhizal fungi did not extend out any further into abandoned land than the tree roots they were associated with.

Where are the saprophytic fungi necessary for nutrient cycling and carbon sequestering? A single teaspoon of leaf litter can contain over 100 fungal species; move 20m away and the next sample could contain a whole new suite of species (Coleman *et al.* 2004). A paddock that has been grazed for 100 years is unlikely to maintain forest fungal diversity (Johnson, Zak *et al.* 1991). Natural nutrient and energy cycling does not restart simply by planting a tree in a paddock. Leaf litter and deadwood build up could take decades to reach critical levels that could support the diverse community needed to establish true ecosystem wide processes. Half of all plant production is sent below ground to rebuild subterranean root browse and support mycorrhizal associates. Where are the invertebrate species to feed on the plants, fungi, deadwood and each other to in turn feed reptiles and birds? What is required is more research into integrating taxa such as fungi into our current restoration plans.

Perhaps by considering the commercial analogy of creating a sustainable orchard, we can come up with restoration plans for native systems that better maximise production, lessen ecosystem stress and the need for artificial inputs. When approaching a damaged landscape with a mind to establish an orchard there is a broad tool kit of techniques to use. Actions such as land ripping and mounding are carried out before planting to repair damage caused by pugging and soil compaction due to poor land management. Seedlings are inoculated with *Trichoderma*, a mycoparasite to combat plant fungal diseases such as *Phytophthora*. Mulches are applied in orchards to recreate forest conditions, encouraging natural nutrient cycling by invertebrates and detritus fungi, enhancing moisture retention and soil thermal regulation.

What is our baseline?

Ten kilometres south of my restoration site, is the Mt Tamahunga Scenic Reserve. It is the largest patch of local native forest and most logical local site to indicate what was once in the area. However, this reserve has been affected by logging, burning, windthrow of mature trees, and biomass removal by introduced mammals such as, goats, possums, rodents, rabbits, and stock. How could I possibly use this forest as a guide to what a natural forest should contain! We have little knowledge of what is missing from modern plant assemblages. Exotic pressure has been brought to bear on the New Zealand ecosystem for almost 2,000 years since first Maori exploration left rats behind until modern forest clearance and grazing. Modern plant surveys in the Hauraki Gulf region contain fewer plants in total than those of 150 years ago; 303 species of vascular plant were recorded pre 1900 compared with 252 species after 1900.

A good example is Parapara, a coastal plant now mostly confined to off shore islands and considered rare on the mainland; it was once so common that the type specimen in the Auckland Museum was collected from inner city Auckland.

Thomas Kirk admired the straight growth of the ridgeline Pohutukawa, which contrasts with his description of the twisted poor quality coastal types in his Omaha surveys (Kirk 1868, 1872). This is the only academic reference I have seen describing large-scale inland Pohutukawa forests. This type of plant community is certainly something that does not appear on modern revegetation plans.

The botanic view of pre-human coastal vegetation is one of a continuation of temperate broadleaf/podocarp forest with a few coastal specialists, i.e., nothing really different from inland areas. However, previously billions of sea birds must have lived on the big islands of New Zealand, whereas now, there are no large burrowing seabird colonies left to show us how our coastal areas once looked. Many modern studies of island botany have ignored smaller islands because they are too modified by birds. Surely this is an indication that on these islands it is the seabirds that drive the plant community dynamics and invertebrate and reptile diversity. Is it that for most botanists, it is too horrendous a thought that their forests should be dug up and generally trashed by millions of seabirds. Many people have the idealised view of pre-human forests containing majestic trees with multitudes of singing terrestrial birds in the branches and moa (gently) browsing the under storey. An ornithological colleague would dearly love to drag all restoration botanists off shore into the middle of a large petrel colony and say, "This is what all New Zealand used to look like". (It would be smelly, noisy, under story devoid and hard to stand up on as the nesting tunnels collapsed under foot, it would also be crawling with invertebrates and reptiles). I see this as one of the most interesting blind spots of modern botanically driven restoration. The heavy reliance on modern botanical surveys in developing restoration plans ignores the historic changes wrought on the New Zealand ecosystem. It is hard to comprehend that a terrestrial ecosystem such as ours could have derived the vast majority of its energy from open ocean. With seabirds colonising from the coast to mountain heights it puts a whole new perspective on ecosystem energy flows.

Even the seed dispersal of some native plants, for example, Parapara with its sticky seeds, or coastal herbs with their high tolerances for nutrient rich soils, is dependent on seabirds. I think that it is very important that any attempt to replant coastal areas acknowledges that the ocean was one of the key determinants of energy flows and ecosystem features. With this knowledge of past ecosystem energy flows we must accept that densities of invertebrates and lizards must have been at orders of magnitude greater than current forest can maintain. It may be that it will take the reintroduction of seabirds in nearly all restorations before proper species diversity can once again be achieved.

Pest control

Most pest control operations only target pests at bird nesting time within the local nesting area. This leaves the majority of the fauna and flora unprotected. This is because the number of fledged birds measures pest control success, not if the ecosystem is fit to support them. Wenderholm robins fledge successfully but then leave the area. Is it because their food sources have been eaten out? Insects and lizards have been estimated to comprise 97% of forest faunal biomass (Ussher, pers comm. 2005), but targeted pest control has left these fauna exposed and led to a biomass shift to mammalian pest species.

Is bureaucracy constraining restoration?

There seems to be a pervasive requirement for plants to be sourced from within strictly defined ecological districts, while this has some ecological logic (local adaptation etc) it ignores the reality of natural dispersal mechanisms and historic range contractions.

The nearest source of material for many of the species now locally extinct at Leigh is the offshore islands of the Hauraki Gulf (Figure 2). These islands contain extensive coastal forest and diverse fauna. Birds such as kaka and bellbird regularly arrive from Little Barrier Island and take up temporary residence on

the mainland. Leigh is the nearest mainland site to the island and only provides temporary habitat for these visitors because plant diversity is lacking and the many mammals that are present are keen to make their acquaintance. However, because we manage mainland sites differently to restored islands, it is difficult to provide safe habitat for the entire ranges of these species. It is often ignored that native birds regularly disperse across politically defined boundaries with their stomachs full of seeds and/or attached hitchhikers. Some species, dispersing by wind and water can get even further.

A restoration success story best illustrating the importance of considering dispersal of species is in the restoration of Tiritiri Matangi Island. The original planting plan contained plants recorded in a botanical survey put together in the 1970's. After centuries of Maori occupation and one hundred years of European forest clearance and grazing, the tree flora which originally contained species such as pururi, rewarewa and mangeao was reduced to a few individual trees. Kauri and kahikatea are ubiquitous in northern forest assemblages and it is likely that they would have been present on the island. However, these species, and several other shrub species, were not reintroduced as part of the restoration because they were not present in the 1970s survey, although, at the time, they were three kilometres away on the mainland.

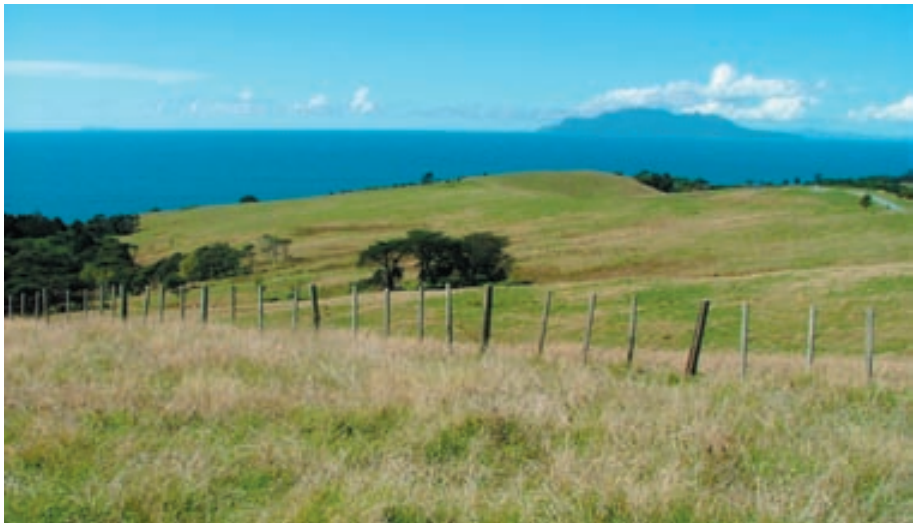

Figure 2. Restoration site; looking east to Little Barrier Island.

I find it interesting that special dispensation had to be sort to increase puriri (*Vitex lucens*) and to bring in *Rhabdothamus solandri*, *Alseueosmia macrophylla*, *Pittosporum umbellatum*, nikau *Rhopalostylis sapida* and kowhai *Sophora microphylla* – due in part to their importance as a food source for introduced rare bird species. But, in contrast whether these rare birds were ever native to the island was never considered. But of course birds such as tui and kereru happily ignored the official line that Tiritiri Matangi is not associated with the mainland by regular movements to and fro and now kahikatea seedlings appear despite original refusal to allow the introduction of kauri and podocarps.

The most obvious example of the bureaucratic boundary is the ecological district boundary drawn between Rangitoto & Motutapu Islands. While it is true, one is a very recent basaltic eruption cone and the other indurated Greywacke with a sand stone cover; this geological dichotomy does not control floral and faunal distribution. Almost certainly the vegetation surviving on Motutapu after the Rangitoto eruption was critical for the colonisation of the latter. Yet if a strict ecosourcing line were pursued, plants for Motutapu restoration would not be sourced from Rangitoto. To argue that absolutely no interaction should, has, or ever will, take place between two adjacent islands is seemingly flawed.

There is much to be gained from looking outside the modern botanical survey driven core of contemporary restoration. I think we need to look outside of current practices in restoration of New Zealand ecosystems and we could take

a leaf from commercial models that maximise production; this may illuminate other sets of environmental drivers and influences that are not easily foreseen using overly botanical views.

In short, there is more than one paradigm at play in this world and it is time restoration ecology took notice.

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NEW ZEALAND'S FAVORITE NATIVE PLANT SURVEY

The result of the New Zealand Plant Conservation Network annual survey puts Cook's scurvy grass as New Zealand's No.1 plant for 2005. The survey, run in conjunction with The Isaac Centre for Nature Conservation at Lincoln University, is based on a similar project carried out in Britain by the conservation organisation Plantlife; the aim is to help raise a greater awareness of native plants. Surprisingly, pohutukawa, which has topped New Zealand's national list in previous years, did not feature in the top ten in 2005.

Results for 2005

1. Nau, Cook's scurvy grass
2. Kowhai, coastal kowhai
3. Poor Knights lily, raupo-taranga
4. Bartlett's rata
5. Nikau palm
6. Cabbage tree, ti, ti kouka
7. Kaka beak, kowhai-ngutu-kaka
8. Chatham Island forget-me-not, kopakopa
9. Williams's broom, giant-flowered broom
10. Parapara.

For more detailed results, including voter comments and fact sheets for the top 100 plants, visit www.nzpcn.org.nz/voting/vote_results.asp

Cook's scurvy grass, *Lepidium oleraceum*. Photo: Peter de Lange.

NEWS FROM THE ECOLOGICAL SOCIETY OF AUSTRALIA

Ecological Society of Australia's report to the New Zealand Ecological Society

By Robyn Sinclair
Robyn is a New Zealander currently living across the Tasman. She is completing her Masters with Lesley Hughes at Macquarie University in Sydney, working on the evolutionary ecology of leaf mining insects www.ecolsoc.org.au/What%20we%20do/Prizes/documents/RobynSinclairPoster.pdf

February 2006
Hi everyone,

ESA 2006 this year in Brisbane was a roaring success. As always it was hard to know which session to go to! Susan Timmins (DoC) did a fantastic job of promoting our upcoming ESA/NZES conference, and we'll all looking forward to a lovely Wellington spring. Back to Brisbane, we had a large opening plenary which included talks by seven top research in climate change ecology each tackling a different ecosystem. One of the highlight (particularly for student) was the pub ecology debate at University of Queensland's Red Room bar. The topic discussed was biodiversity trading. The panel were Hugh Possingham (Professor of Ecology and Mathematics), John Quiggan (Professor of Economics) and a representative of the NSW Department of Environment and Conservation, or as described on the night, the "man on the ground". The discussion was recorded and played on ABC radio "Big Ideas" program, and if you'd like to know the outcome of the discussion, it can be downloaded from www.abc.net.au/rn/bigidea/. Follow the link "More Summaries" (bottom of the page) and then scroll down to Café Scientific: Biodiversity Trading.

There is another upcoming conference which we thought you might be interested in. The Association for Tropical Biology (ATB) will be holding its annual conference in Kunming, China, on July 18–21 2006. There are a number of interesting symposia planned (http://atbc.xtbg.ac.cn/symposia.shtml). One is 'Large scale restoration of tropical ecosystems', convened by Carla Catterall and John Kanowski, (both ESA members) who are encouraging contributions from a range of countries and ecosystems. For more details, you can contact John on j.kanowski@griffith.edu.au.

Once more that's the end of this edition. More details of the ESA, our 2005 conference and our members can be found on our website, www.ecolsoc.org.au or by emailing me on rsinclai@bio.mq.edu.au.

ECOLOGY STUCK ON THE WEB

5: Open source software can be your friend

By Jon Sullivan
Lincoln University
webmaster@nzes.org.nz

The other day I mentioned the excellent internet browser, Firefox, to some esteemed members of our society. I was a little surprised to learn that most people didn't know what Firefox was. That got me thinking. Many of you fine newsletter readers may be unaware of all the useful "open source" computer programs like Firefox that are now available as free downloads on the web.

In summary, open source software is free. In detail, open source software is software that makes its source code freely available for improvement. That means that clever computer programming people who use the software are free to look under its hood and make improvements. Popular open source software that is backed by a large community of users can improve very quickly, and several open source projects have been running for many years and are now very good (see below for examples). A study by Damien Challet and Yann Le Du of the University of Oxford (reported in Nature News (2003, doi:10.1038/news030623-6) has even suggested that open source software is more efficient at fixing bugs than commercial software.

I am certainly not the kind of person who downloads software source code and improves on it. I would guess you are not either. That does not stop us from downloading and using a lot of excellent, free open-source software.

Here are a just few of them, all available on the web for Windows, Mac, and Linux users.

Firefox (www.mozilla.com/firefox/)
Firefox is a popular internet web browser, analogous to Microsoft's Internet Explorer or Apple's Safari. Firefox has won all sorts of awards and is quickly gaining in popularity. Last month 12% of visitors to the NZ Ecological Society website viewed the website with Firefox, compared with <1 % two years ago. It's fast, secure, and does snazzy thinks like tabbed browsing, where you can open several websites in a stack of tabbed pages within one window (difficult to explain but very useful). If you spend a lot of time on the web, it's well worth a try.

OpenOffice (www.openoffice.org)
OpenOffice is the leading open source equivalent of Microsoft Office and is a close relative of Sun's StarOffice. OpenOffice contains a word processor, a spreadsheet, a presentation program, a drawing program, and a database program. It is many years old now and is a feature-rich and capable (and free) alternative to Microsoft Office (if you need or want one). OpenOffice opens Microsoft Office files fine. I've even found that OpenOffice opens Word documents from PC-users substantially better than does my version of Microsoft Word for Mac. If you're looking for office software, you might also want to check out AbiWord and the excellent Gnumeric from the GNOME office project (www.gnome.org/projects/).

R (www.r-project.org)
R is an open source statistics program related to the commercial S-Plus. You work with R by typing in commands so getting started in R is a bit like learning a new language. That effort is well worth it as R is excellent. There is a large and growing on-line community of R users and several books and online tutorials are available for help. R is growing in popularity among ecologists and there are useful ecology-specific "packages" that have been written to add ecological functions to R. If you are not already entrenched in a favourite commercial statistics program, give R a try.

GRASS (grass.itc.it)
GRASS is to ArcGIS what OpenOffice is to Microsoft Office. It is a mature, feature-rich open source Geographic Information System (GIS) program. If you need to do more than just look at maps with Google Earth (earth.google.com) or MapToaster (www.maptoaster.com) and you or your institution cannot afford a license for ESRI's ArcGIS range of products, check out GRASS. GRASS has the added advantage of connecting with R.
That list just scratches the surface of what is available. I haven't mentioned Apache (httpd.apache.org) and MySQL (www.mysql.com), the server and database programs that drive many of the world's websites. There's also LaTeX (www.latex-project.org), a typesetting language that separates content from typesetting and generates glorious quality documents. Then there's GIMP (www.gimp.org), the leading open source image manipulation software, analogous to Adobe Photoshop, which recently celebrated its tenth anniversary. You can even run all this on Linux, a completely open source operating system, for which there are now a number of quite elegant and friendly user interfaces.
My intention is not to say that open source software is the best. Some of it can be more technical to install and more difficult to use. There is also great commercial software out there to choose from. But it can pay to think outside of the beige box. In this age of the internet and open source software, there is no excuse to be restricted to the software that came with your computer when you bought it.

UPCOMING MEETINGS

Plants as Infrastructure

Royal New Zealand Institute of Horticulture Conference
24–25 March 2006
Venue: Unitec New Zealand, Auckland

Unitec, Auckland local government, the Royal New Zealand Institute of Horticulture and the New Zealand Institute of Landscape Architecture are coming together to consider the vital topic of plants as infrastructure in our cities.

The conference will showcase several green infrastructure projects, with a focus on matching theory with innovative best practice.

Topics will include: water, weeds, trees, teams, planning, design and management.

The keynote speaker is Joan Nassauer, Professor in Landscape Architecture at Michigan University. Joan's expertise in water management is at a wide variety of scales, including peri-urban, suburban and fully urban areas.

There will be a range of fieldtrips available to visit initiatives around greater Auckland, with a possible post-conference tour to Tiri Tiri Matangi Island.

Contact: Penny Cliffin: pcliffin@unitec.ac.nz for more information

To receive further information about the conference, see www.rnzih.org.nz/pages/conference2006.htm

HOTSCIENCE

Biosecurity: The ecology of forest insect invasions and advances in their management

The February 2006 issue of the *Canadian Journal of Forest Research* (Volume 36, Number 2) has just appeared with several papers on invasive forest insects from New Zealand authors and a guest editorial by Ecki Brockerhoff (Ensis – Forest Research, NZ), Sandy Liebhold (USDA-Forest Service), and Herve Jactel (INRA, France). The papers represent a selection of work presented at an international IUFRO conference held in August 2004 in Hanmer Springs. PDFs of all the articles in this issue (Canadian Journal of Forest Research, Volume 36, Number 2, February 2006) are now available on the internet at http://pubs.nrc-cnrc.gc.ca/cgi-bin/rp/rp2_tocs_e?cjfr_cjfr2-06_36

The ecology of forest insect invasions and advances in their management (by E.G. Brockerhoff, A.M. Liebhold, and H. Jactel, pp. 263–268) reviews some recent global trends in insect invasions that affect trees and forests, and new developments in pre- and post-border biosecurity.

Interception frequency of exotic bark and ambrosia beetles (Coleoptera: Scolytinae) and relationship with establishment in New Zealand and worldwide (by E.G. Brockerhoff, J. Bain, M. Kimberley, and M. Knížek, pp. 289–298) examines a 50-year data set on interceptions of a group of insects that include some of the most serious forest biosecurity threats. An analysis of the relationship between arrival rate (depicted by interception frequency) and worldwide establishment success showed that species from the group of the most frequent arrivals have become established in other countries about five times more often than the least frequent arrivals. Interception records of such insects are valuable for the prediction of invaders and for our general understanding of invasions.

DNA barcodes for insect pest identification: a test case with tussock moths (Lepidoptera: Lymantriidae) (by S.L. Ball and K.F. Armstrong, pp. 337–350) presents the development of molecular techniques for the identification of insect incursions. One of the key advantages of this method is that it can be used with any life stage of insects, even those that are usually not easily identifiable.

Other papers in this issue cover the effects of biodiversity on impacts of forest insects and on the invasibility of ecosystem, the use of pheromones for monitoring and mating disruption, and biological control of an invasive insect. For more information please contact Eckehard.Brockerhoff@ensisjv.com

Russell, J. C.; Towns, D. T.; Anderson, S. H.; Clout, M. N. 2005. Intercepting the first rat ashore. Nature, 437: 1107.
A brief communication to Nature which details the behaviour of one solitary radio-tracked Norway rat (Rattus norvegicus) which was released onto a small island (9.5 ha) in the Hauraki Gulf and evaded capture for 2 months before swimming over 400 m of open ocean to a second island (21.8 ha) and evading capture for a further two weeks. The paper demonstrates that unknown behaviours in invading animals (e.g. evading capture and swimming) can occur at low densities, and that island protection systems must consider these changes in behaviour in order to successfully prevent island (re)invasion.

POSITIONS AVAILABLE

Native Frog Ecologist (Temporary 24 Months), Waikato Conservancy Office, Hamilton, TS1 (CA1/IA)

Department of Conservation, Waikato Conservancy

Vacancy 63/190T

For an application pack, contact Margaret Stephens, mstephens@doc.govt.nz, or the Waikato Conservancy Office, telephone (07) 838 3363 quoting Vacancy 63/190T.

Applications close in the Waikato Conservancy Office at Noon on Monday 20 March 2006.

The Waikato Conservancy seeks a highly motivated and qualified herpetologist/ecologist for a two year contract position. The focus of the position is to undertake and co-ordinate research that contributes to the understanding of native frog ecology and in particular, the management and monitoring of the two species of native frogs which occur in the northern North Island.

The position will be based at the Waikato Conservancy Office located in Hamilton, but work may extend into the Northland, Auckland, Waikato, Bay of Plenty and East Coast/Hawke's Bay Conservancies.

The position involves co-ordinating research projects, providing support and advice to staff in North Island Conservancies and external agencies, the collection and analysis of data, working in remote locations and contract supervision.

The DME number for the Position Description is waico-38351

PH.D. POSITIONS

Position 1:

Contact:
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School of Biological Sciences,

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Wellington 6005,
NEW ZEALAND.

Tel. (office):
(+64-4) 463-5233 ext. 8575,

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Ph.D. opportunity to study Kereru (native pigeon) behavioural ecology in the urban environment, Wellington, New Zealand, at the School of Biological Sciences, Victoria University of Wellington (SBS-VUW).

There is a growing interest in how native species might utilise and adapt to highly modified environments (e.g., urban areas). Such studies have implications for our understanding of evolution and animal learning with application in the conservation and sustainable management of native wildlife. We have funding to support a Ph.D. candidate to investigate the behavioural ecology of New Zealand's native pigeon; the Kereru, in Wellington; New Zealand's capital city.

The PhD will be part of a wider community education and research initiative called "*The Kereru Discovery Project*". We are looking for a highly motivated candidate to participate in research that will involve biological studies of Kereru but also contribute to, and benefit from, a parallel elementary school environmental education program (Wellington Zoo) and web-based community portal (Te Papa, Museum of New Zealand) allowing schools and the wider public to contribute observations to the biological research database. The candidate will have considerable opportunity to follow and develop their interests within these contexts. Wellington City has a diverse community of native, endemic and exotic (introduced) bird and mammal species. Thus, Kereru might just be the beginning focus of a wider urban wildlife ecology study.

The Ph.D. student will be supported in the first instance by funds from a collaborative relationship between the School of Biological Sciences, Victoria

University of Wellington, The Wellington Zoo and Te Papa, The Museum of New Zealand.

The candidate must be able to start in early 2006. International PhD students at Victoria University of Wellington, New Zealand, pay only domestic student fees.

Position 2:

Ph.D. opportunity to study birth sex ratio modification through stress and diet in black rhinoceros at the School of Biological Sciences, Victoria University of Wellington.

Sex determination is a topic that generates considerable research interest and male-biased birth sex ratios are an emerging problem in some conservation breeding programs. New insights that birth sex may be determined by the glucose environment of the implanting and developing blastocyst lead us to hypothesise that stress-inducing events, like capture and translocation, and glucose-rich diets, are the cause of male-biased birth sex ratios in captivity and after translocation. We have funding to support a Ph.D. candidate to investigate the relationships between stress, diet, blood-glucose and birth sex-ratio in black rhinoceros as part of our current research program in the U.S.A., South Africa, and New Zealand.

We are looking for a highly motivated candidate to participate in research that may involve studies of rhinoceros in captivity, particularly in the USA, and in Hluhluwe-iMfolozi Park, South Africa, with laboratory work in Wellington, New Zealand, and/or San Diego, USA, with considerable opportunity for the candidate to follow and develop their interests within these contexts.

The Ph.D. student will be supported in the first instance by funds from the International Rhino Foundation and by collaborative relationships between the School of Biological Sciences, Victoria University of Wellington, Conservation and Research for Endangered Species, Zoological Society of San Diego, USA, and Terrestrial Ecology Research Unit, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa.

The candidate must be able to start in early 2006. International PhD students at Victoria University of Wellington, New Zealand, pay only domestic student fees.

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NEWS FROM COUNCIL

Minutes of the NZES Council Meeting 9.30am 18 November 2005, Turnbull House, Wellington

Editors note: Edited and abridged minutes

Present: John Sawyer (chair), Susan Timmins, Shona Myers (minutes), Rachel Keedwell, Mel Galbraith, Karen Denyer, Alison Evans, Ruth Guthrie, Hannah Buckley, Ingrid Gruner.
Apologies: Peter Bellingham, Kate McNutt, Jon Sullivan.

Treasurer's report

Rachel reported on the accounts for year to date. A copy of the audited accounts for 2005 has been sent to the Incorporated Societies Office. A separate account has been set up for the Kauri Fund. Rachel has investigated an interest earning cheque account but current bank (Westpac) does not offer anything. Rachel to check with other banks and investigate a better deal.

Awards

Discussion followed on the criteria for a student travel grant and when it should be paid. It was agreed that paying the students during the conference rather than afterwards would be better. A budget should be set aside each year for it rather than relying on the profits from the conference. Applications for student travel grants should include the following information: a positive recommendation from a supervisor, the distance traveled, presentation of paper or poster at conference, expected costs and a description from the applicant of why they would benefit

from an award. Karen suggested we should promote it by posters at the Universities and via the webpage. Susan suggested that conference organizers seek sponsorship. It was agreed that the 2006 awards would be advertised in the May newsletter, with applications closing when conference registration closed. Successful applicants would be advised in advance and presented with the award money at the conference.

Moved (Rachel) that $1000 be set aside from 2006 for student travel grants, up to a maximum of $250 per person, seconded Alison, carried.

Journal editor's report

Peter Bellingham's report was presented by Shona at the meeting. In summary the report included the following points:

1. Issue 29 (1) for 2005 was published in July 2005 and issue 29 (2) is full with 16 papers, including a major review. All but one of the papers is available as PDF preprints on the journal website. It should be at the printers by December. Issue 30 (1) for 2006 already has 6 papers accepted.
2. 38 papers have been submitted to the journal in 2005, 8 papers more than received in 2004. This is in part due to poor quality manuscripts from overseas authors through the website. Not including this the current rejection rate is c. 33%.
3. David Coombes has resigned from the Editorial Board after 7 years service, which has been much appreciated. He will complete reviews of all his current papers. Grant Edwards from Lincoln University has been appointed in his place.
4. John Parkes reports that the Nigel Barlow commemorative edition will be sent to the printers in February 2006.
5. No progress on alternative print companies and journal production yet.
6. There is concern regarding the decline in the journals impact factor from IF =1.11 to IF=0.568. Gabor Lovei, Peter Bellingham, Duane Peltzer, Richard Duncan, David Wardle, Dave Kelly and Roger Dungan have met to discuss this concern. Contributing reasons could be:
    a. late appearance of issues. A priority is to move production schedule forward so that issues appear earlier in the calendar year.
    b. lack of recent high-impact papers. Editorial board members will seek submissions of high profile reviews but also recommend conference organisers obtain commitment or urge keynote speakers and student award recipients to publish in the journal.
    c. decline in submissions of provocative Forum pieces. Gabor has undertaken to be a Forum editor.

Despite these issues the journal editors commented that the journal exists principally to serve the needs of NZ ecological community and that many of the papers are articles of record, some only important in a local context, but which form the backbone of ecology in NZ.

The NZES council discussed the issues raised in the report at the meeting. Support was given to the journal editors to do what they think is needed to boost the journals impact factor but to also be aware that it is primarily a journal for NZ ecology. It was suggested that it could be an issue to raise in the newsletter.

Webmasters report

Susan presented Jon Sullivan's website report. In summary:

1. website popularity continues to climb slowly but steadily.
2. password lock on NZESJE issues less than 3 years old is ready. It will be turned on when passwords and usernames are sent out with next newsletter. It was noted that people need to be warned of this through the newsletter.
3. occasional publications are now on line.
4. Jon has arranged for the following website names to link to NZES website
    a. www.newzealandecology.org
    b. www.newzealandecology.org.nz
    c. www.newzealandecology.com

5. A student website as part of NZES webpages is being planned with Melissa Hutchinson and Debra Wotton at Canterbury University (PhD students). The website still needs a student webmaster. John Sawyer has also spoken to Laura Young. It was recommended that the students approach council for funding for design and development, and that the NZES awards page be linked to the student website.
6. Newsletter and *NZJE* in press are up to date on website. Meetings page is not being updated regularly. A discussion followed about the merits of having a meetings and events page on the web vs. the newsletter.

Ruth presented the ideas and drawings being developed for the poster to publicise the journal. Ruth and Jon are doing the drawings. There are three themes:

1. Native plants and animals;
2. Introduced animals
3. NZ ecosystems (freshwater, rata forest, tussock grassland)

They will be developed into A3 sized poster series. The pictures relate to citations in the Journal, e.g. moa browsing (Atkinson)

Education/Communication Role

Karen presented some of her ideas and questions regarding the education role on Council. John explained that the role came out of last years Council discussions about the need to promote ecology and the transfer of scientific information to a wider audience. Karen stressed that it is important to identify the objectives (what do we want to change? what do we do?), the target audience, gaps and issues. Susan suggested that we need to consider: 1. What can NZES do for ecology that other organizations cant and why? 2. Need to reconsider NZES submissions on key national issues 3. Karen is ideally placed to investigate – what do regional councils need?

We need to decide what the primary audience should be, e.g. children vs. managers, and where the decisions are being made. Mel suggested that information about real examples of applied ecology is needed, e.g. by teachers. It was decided that:

- Shona would send out minutes of meeting where the issue was discussed
- There will be a workshop on education role at next meeting
- Investigate putting in application for ecology factsheets etc. to biodiversity advice fund and/or TFBIS for funding. It was decided that the April TFBIS funding round would be the most appropriate.

Conferences

1. Intecol

Shona presented Kate's report and questions regarding the organisation of the Intecol Conference. Kate will be attending the Australian Ecological Society conference in Nov 2005 and will be meeting with the Intecol Committee. She needs answers on the following issues before then:

- Legal advice has been provided to NZES that recommends NZES set up a separate company to run the conference. This would remove any liability from the running of the conference on the Society. Moved (John) that if it is within the NZES rules Council allow Kate to set up a separate company to assist NZES organise conference, seconded (Mel), carried.
- Ideas for NZ members of conference scientific committee. NZES Council to send ideas of names through to Kate.
- Contribution of seed money for the conference. Australian Ecological Society has put in $15,000. Moved (John) that NZES set aside $5,000 with the option of another $5,000 if needed, with the assumption that NZES receive some of the profit, carried.

  It was noted that there will also be the need for travel money for NZ reps to attend conference organisation meetings in Australia.

2. 2006 Joint NZES and Australian Ecological Society Conference

Susan (chair of conference organising committee) reported on progress with organisation. The theme is "Ecology across the Tasman". Venue is Kelvin campus, Victoria University. A scientific programme is being developed with 4 parallel sessions and 20 min papers. Asking for anyone to put forward ideas for symposiums. There will need to be video conferencing for plenary sessions—there isn't a venue large enough. Workshop topics include "ecology of suburbia". Susan is attending Australian Ecological Society Conference in November 2005 to advertise the conference.

Susan asked for ideas for sponsorship to be sent to her or Ben Reddiex. Alison suggested Weta Workshop for decorations.

Media liaison

The successful media coverage of last conference was discussed, through contracting a media liaison person. The need for ongoing media coverage, e.g. of Journal articles and conferences was discussed. John has received quote from one media provider. John and Ingrid talk to different media providers and seek quotes.

Matiu/Somes Island and Wellington City Jersey Rafe

Ecology Across the Tasman 2006

28 August – 1 September 2006

(Student Day: 27 August)

Victoria University of Wellington,
Wellington, New Zealand

A joint conference of the New Zealand Ecological Society and the Ecological Society of Australia

Call for Papers

Online abstract submission and registration available on the conference website:

www.vuw.ac.nz/ecology06

Abstract and symposium submission closes **5 June 2006**
Early-bird registration closes **14 July 2006**

For further information visit the website or contact:

ce-conferences@vuw.ac.nz

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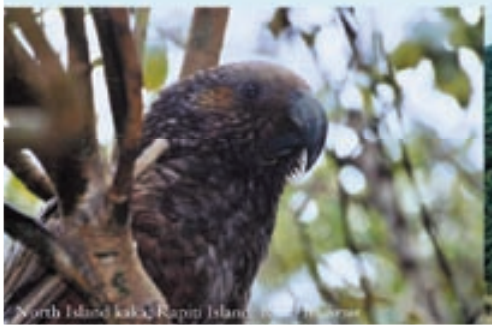

North Island kaka, Rapiti Island

Rapiti Island

ECOLOGICAL SOCIETY E-MAIL LIST SERVER: DID YOU KNOW YOU AREN'T ON IT ANY MORE?

Well that got you reading. You may have been subscribed to the NZES listserver, but I have to do a lot of housekeeping on the list and have to remove about 2–3 addresses a month because they are generating error messages. These errors could be because people have moved and not changed their address; sometimes because they are over quota and the inbox is full (especially on hotmail-type accounts), and so forth.

So if you haven't had the odd email now and again (there is not a lot of traffic, about 1–2 messages a month perhaps) it might be worth checking if you are still on. You can do this by sending a new "subscribe" command, and if you are already on the list it will tell you so and do nothing else.

Also please note that if you send a message to the list itself for circulation, as sender you will get back in response the current list of error messages for all dead addresses I have not yet tidied up. Sorry these will come to you, but you can just delete them.

About the List Server

Now some background on the listserver (this summary below is also on the web pages)

What is a listserv?

A listserv (short for List Server) is a centralised list of e-mail addresses of subscribers. Anyone who is subscribed to the listserv will automatically receive all emails sent to the listserv, and can send e-mails to all subscribers via the listserv. You can subscribe and unsubscribe from a listserv at any time.

The NZ Ecological Society listserv

By subscribing to the NZ ecosoc listserv, you will receive emails about meetings, seminars, jobs, and issues in New Zealand ecology. You will also be able to post emails that will be received by most practising ecologists in New Zealand.

Subscribing to the NZ EcoSoc listserv

To subscribe to this server, e-mail a message to the automatic
Mailserv processor at: nzecosoc-request@it.canterbury.ac.nz
Include nothing in the e-mail except the following text in the body of the e-mail:

SUBSCRIBE NZECOSOC
END

To unsubscribe from the listserv, send another email to the above address, but this time use the following text:

UNSUBSCRIBE NZECOSOC

Once subscribed, you will receive instructions on how to send messages, unsubscribe etc. PLEASE READ THESE INSTRUCTIONS AND FOLLOW THEM.

Sending list messages

To send a message to everybody on the list, use the address, nzecosoc@it.canterbury.ac.nz. Only people subscribed to the list are able to post messages on the list. If you are not on the list and don't want to subscribe, but want to send a message, send it to Dave Kelly (Dave.Kelly@canterbury.ac.nz) to forward on.

Messages on the list should follow these simple rules:

- NO ATTACHMENTS!!!
- Put the info in plain text in the message
- If there is bulky or graphic material some people may want, put a web address in the message that people can click on if they want, or give a contact email address where people can ask for it
- Only send stuff that is likely to be of general interest to NZ ecologists

Replying to list messages

To reply to a list email, you have two options. You can either hit reply and this will reply to everybody, or you can reply to the author only (e.g., a new e-mail with the author's personal e-mail address). If you want to reply to the person who sent it, please be careful that your reply goes to the person, and not to the list (to be bounced out to everyone!). In other words, double-check what "To:" field your reply has picked up before you press "send".

If you change your email address

If you change your email address, you have to unsubscribe from the old one, and subscribe from the new one. If you changed address but forgot to tell the server, we start getting error messages from your old address and have to unsubscribe you manually, so make my life easier and do this yourself. If your email address has problems (e.g., messages rejected because your inbox is full) for more than a few weeks we will also unsubscribe you. If you are not getting any messages and wonder if you are still on the list, just send another subscribe command. The easiest way to unsubscribe your old email address is to send a message while you are logged on as that user; if the old email address is dead you may not be able to unsubscribe it because the system sees you as someone else, if you see what I mean. In this case send the details to me and I can delete the old address.

For information on the listserver contact me, Dave Kelly (Dave.Kelly@canterbury.ac.nz).

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(Effective from September 2005)

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This Newsletter was produced by Hannah Buckley, Ruth Guthrie and Jeremy Rolfe.

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

Ruth Guthrie or Hannah Buckley
Bio-Protection and Ecology Division
P.O. Box 84, Lincoln University, Canterbury

Next deadline for the newsletter is 1 May 2006.

This issue is printed on 100% recycled paper

New Zealand Ecological Society (Inc.)
P.O.Box 25-178
CHRISTCHURCH

MEMBERSHIP

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

Types of Membership and Subscription Rates (2005)

Full (receive journal and newsletter) .$75* per annum

Unwaged (with journal).....$45* per annum
Unwaged membership is available only on application to Council for full-time students, retired persons etc. Unwaged members may receive the journal but must specifically request it.

Joint.....$75* per annum
Joint members get one copy of the journal and newsletter to one address.

Overseas Full .....$95* per annum

Overseas Unwaged.....$65* per annum

School.....$12 per annum

Educational institutions may receive the newsletter at the cost of production to stay in touch with Society activities. By application to Council.

There are also Institutional Rates for libraries, government departments etc.

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

For more details on membership please write to:

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NEW ZEALAND

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

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