NEW ZEALAND ECOLOGICAL SOCIETY

Newsletter

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Inside

From the Editor

Kia ora koutou

Welcome to the April 2019 newsletter. In this newsletter there is an introduction to our first "Hot Topic" and the minutes from the AGM during the 2018 conference. Thank you to everyone who has contributed to this newsletter and I hope you enjoy reading it.

Ngā mihi
Angela Simpson

Newsletter Editor: Angela Simpson. Email: newsletter@nzes.org.nz
Deadline for submissions for the next issue of this newsletter is **Friday 21st June 2019**

Illustrate Ecology

Also available in pink.

Photo and caption by: John Flux.

New Zealand has many insect species showing a wide range of colour forms – possibly because the main predators were formerly birds. Now, as in other countries, colour-blind rodents and wasps may spoil the benefit of individualism. Here 23 "brown" grasshoppers (*Phaulacridium marginale*) are quite distinct from each other in pattern and colour, and would be hard to see if they weren't having a meeting on this warm piece of bark. The inset photo shows other common colours they adopt.

Ecotones – New ecological research

Bruce Burns, University of Auckland

A selection of recently published research on or relevant to New Zealand ecology (except that published in the New Zealand Journal of Ecology). The list of other publications on New Zealand ecology can be found towards the end of the newsletter.

1. Spatiotemporal variation in rodent populations in New Zealand forests

Ship rats and house mice are ubiquitous within New Zealand forests and have major impacts on native biota. Their abundances, however, vary considerably through space and time Recently Walker et al. (2019) modelled ship rat and house mouse abundances using 18 years of data from forests across New Zealand. These data allowed grouping of forests into six classes based on rodent population dynamics in unmanaged forests, and these generally fell along a continuum from cooler to warmer forests. In cooler, often beech-dominated forests, all rodents are generally at low densities but irrupt after mast events, and ship rats and mice populations change synchronously. In contrast, abundances of ship rats and mice are more stable in warmer, more northern forests, with continuously high ship rat and low mice densities. As well, the data showed a strong suppression of mice by ship rats particularly in the warmer forests. Temperature was the strongest predictor of differences in rodent dynamics within New Zealand forests, with ship rat populations limited by low temperatures. The strength of this relationship suggests that climate warming will increase the spatial and temporal range available for ship rat populations, and potentially increase their impacts. Such extreme differences in rodent population characteristics in different forests suggests tailoring conservation management strategies to sites is possible and warranted, and this research provides an excellent framework on which this could be achieved.

Walker S, Kemp JR, Elliott GP, Mosen CC, Innes JG in press. Spatial patterns and drivers of invasive rodent dynamics in New Zealand forests. Biological Invasions.

2. Is New Zealand part of the global pollination crisis?

Globally there is much concern that pollinator numbers are declining though habitat destruction, land-use intensification, chemical exposure, exotic species and climate change. The data supporting this trend, however, are scarce and unevenly distributed, with most data restricted to the USA and Europe. Bartomeus et al. (2019) argue that analysing data on specimens held in formal collections (e.g., New Zealand Arthropod Collection) would be an effective tool for assessing the status of pollinator populations, despite often-inherent biases in these data (e.g., over-representation of rare over common taxa). They illustrate this potential by comparing bee species richness over time in Spain and New Zealand. In Spain, resurveying historic collection data from well-surveyed locations did show that bee species richness had declined before versus after 1980, and that this decline was most marked on areas subject to urban or agricultural intensification. In contrast, in New Zealand, species richness of bees and flies were stable over time, and this result held when considering native or exotic species separately. These overall results mask changes in individual species abundances, however, with 11 bee species and one fly species apparently increasing, and three bee and four fly species apparently decreasing. Considering the results from both countries, this study suggests that the global pollination crisis is not even in its impact globally, and provides evidence that the reported pollination crisis is not occurring in New Zealand yet. This paper also illustrates the strong potential of collection data for understanding biodiversity change.

Bartomeus I, Stavert JR, Ward D, Aguado O 2019. Historical collections as a tool for assessing the global pollination crisis. Philosophical Transactions of the Royal Society B: Biological Sciences 374: art. no. 20170389.

3. Increased sea temperatures causes local loss of foundation species

Climate change is affecting both terrestrial and marine ecosystems. Focussing on seas, mean surface temperatures increased by around 0.5°C from 1950 to 2009. As well, the frequency

and intensity of atmospheric and marine heatwaves is increasing, and the effects of these events may cause more dramatic range shifts than species more gradual responses to changes in mean temperature. As an example of this, Thomsen et al. (2019) monitored the fate of three bull kelp species on the Canterbury coastline through the intense marine and atmospheric heatwave of 2017/18. This event was particularly strong compared to those inferred from historic data, with water temperatures >23°C and atmospheric temperatures on reef platforms >45°C on days with low tides in which kelp would have been exposed. After this heatwave, bull kelp was eliminated entirely from 12 out of 19 reefs surveyed with most mortality in *Durvillaea poha* rather than the other two species. As well, following the die-off, weedy macroalgae quickly colonized the empty spaces, and is likely to suppress any *Durvillaea* regeneration. The loss of large foundation species from these ecosystems will undoubtedly have other cascading effects, which are still uncertain. This study provides a concrete and sobering example of the types of range shifts predicted from climate change, with more seemingly inevitable as extreme events such as heatwaves and droughts occur more frequently in New Zealand. Discussions on appropriate responses are challenging but now critical.

Thomsen MS, Mondardini L, Alestra T, Gerrity S, Tait L, South PM, Lilley SA, Schiel DR 2019. Local extinction of bull kelp (Durvillaea spp.) due to a marine heatwave. Frontiers in Marine Science 6: art. 84.

4. The rise of acoustics in ecological research: sampling the soundscape

Most animals emit sounds that if captured could provide information on their presence and activities. Up until recently, however, large-scale sampling of an area's soundscape for information on animal populations and communities, has required prohibitively expensive technology, the volume of data collected so large that it could not be stored effectively, and statistical techniques unavailable to analyse any data anyway. Happily, all these issues are rapidly being overcome such that acoustic sampling for ecological applications is emerging as a productive new area for research and monitoring (Gibb et al. 2019). In New Zealand, two recent studies highlight this potential. In the first, Bombachi & Pechar (2019) compared bird count data collected with autonomous recording units (ARUs), essentially long-deployed microphones in protective housings, against human point count surveys. They carried this out at six forest locations in the North Island. They found that ARU counts and human observer counts were generally equivalent for most bird species, and recommend use of ARUs in bird population monitoring as a cost-effective technique in the future. In the second, Metcalf et al. (in press) used an array of ARUs to carry out monitoring of post release dispersal for a translocation of hihi to Rotokare Scenic Reserve. In particular, they were not only able to confirm population persistence, but also the change in hihi behaviour from an initial exploratory phase to establishment of territories. These examples suggest we should look forward to development of an array of acoustic monitoring and research tools that will provide critical information on our noisy biodiversity less invasively and more efficiently.

Bombaci SP, Pejchar L 2019. Using paired acoustic sampling to enhance population monitoring of New Zealand's forest birds. New Zealand Journal of Ecology 43(1): art. 3356.
Gibb R, Browning E, Glover-Kapfer P, Jones KE 2019. Emerging opportunities and challenges for passive acoustics in ecological assessment and monitoring. Methods in Ecology and Evolution 10: 169-185.
Metcalf OC, Ewen JG, McCready M, Williams EM, Rowcliffe JM in press. A novel method for using ecoacoustics to monitor post-translocation behaviour in an endangered passerine. Methods in Ecology and Evolution.

5. Persistent marram seed banks could frustrate coastal dune restoration

Removal of invasive plant species is an essential element of many restoration projects. Some of these invasive plants, however, can form large and persistent seed banks that will continue to recruit new weeds into restoration areas long after the original aboveground weed control, e.g. gorse. In coastal dune restoration projects in New Zealand, removal of invasive marram grass (*Ammophila arenaria*) is often a goal as it outcompetes and dominates alternative native species. Hilton et al. (in press) recently examined the size, viability and longevity of marram seed banks at two South Island sites for which they could date dune accretion. They took sand cores down to a maximum depth of 4m, sieved out seed present at different depths (= times) and attempted germination. Results showed that a high proportion of seed buried at 3-4 m depth and at least 21 years old was still viable. This seed longevity is high compared to other estimates from dune ecosystems globally, but might be expected considering the natural instability of these ecosystems. Presumably, such seed longevity would allow buried marram seed to germinate if dune erosion processes brought such buried seed to the surface once again. This study shows that programmes to eliminate marram from coastal dune restoration projects will need to stay vigilant for many years to allow such persistent seed banks to deplete, and reinforces the need to consider seed banks in the management of invasive plants.

Hilton M, Konlechner T, McLachlan K, Lim D, Lord J in press. Long-lived seed banks of *Ammophila arenaria* prolong dune restoration programs. Journal of Coastal Conservation.

News from NZES council

Kia ora tātou,

We had our first NZES council meeting for the year on 7th February in Auckland. Martin Bader has stepped off council due to other commitments, so Sarah Wyse has joined council as a councillor and our webmaster. Sarah is postdoctoral fellow at the Bio-Protection Research Centre, Lincoln University. Welcome Sarah and thanks Martin for your contributions in 2018!

This year, we will be concentrating on enacting our latest strategic plan https://newzealandecology.org/sites/default/files/NZES%20Strategy%202019-2023_Final%20Draft.pdf and working to achieve our diversity goals https://newzealandecology.org/diversity-statement.

We have a fabulous team in Lincoln planning our annual conference for 2019, on 1-5 December.

Please feel free to get in touch if you have any questions or feedback.

Cate Macinnis-Ng, President

NZES Hot Topics

Following hot on the heels of the success of the Hot Topics programme run by the Ecological Society of Australia, the NZES aims to improve communication of science from the conservation and ecological community within Aotearoa New Zealand to the people of NZ. The NZES Hot Topic reports will likewise provide a robust source of ecological and conservation science to counter misinformation and evidence complacency. The programme was established in 2018 as an initiative of the Kauri Fund.

NZES Hot Topic reports are evidence-based communiqués on conservation, environmental and predominantly ecological issues that are currently either in the media, or of interest to a broad cross-section of people from policy makers, land managers, conservation volunteers. NZES Hot Topics aim to provide clear, concise, evidence-based statements that aspire to enhance the nature of scientific debate in New Zealand and objectively inform public discourse on topics of national and regional importance.

NZES Hot Topics is governed by an editorial team consisting of New Zealand-based ecologists George Perry and James Brock. More information about Hot Topics can be found here https://newzealandecology.org/nzes-hot-topics

The first Hot Topic is "Cats and biodiversity" and can be read here, on the NZ Ecological Society website https://newzealandecology.org/cats-and-biodiversity-nz

NZ Ecological Society 2018 AGM minutes

65th Annual General Meeting
Victoria University of Wellington
27 November 2018, 12pm

Present: Shona Myers, Elizabeth Elliot, Susan Timmins, Susan Walker, Riki Taylor, George Perry, Olivia Burge, Elise Arnst, Tom Harding (non-member), Jamie Wood, Tynan Burhardt, Ellen Hume, Cate Ryan, Kate McAlpine, Paul Dutton, Yanbin Deng, Helen Ough Dealy, Olivier (Olly) Ball, Stephen Hartley, James Griffiths, Rod Hitchmough, Carol West, Bruce Burns, Angela Simpson, Deb Wilson, Sarah Wyse, James Brock, Lisa Denmead, James McCarthy, Sandra Anderson, Tim Curran, Clayson Howell, Simon Moore, Tim Park, Jon Sullivan, Dave Kelly, Tom Sanders, Leah Barnfather, Amy Martin, Rachel Nepia, Jill Rapson, Chris Bycroft, Debra Wotton, Kiri Joy Wallace, Cate Macinnis-Ng (45 attendees).

Apologies: Rotokare Scenic Reserve Trust, Cynthia Roberts, Angela Brandt, Josie Galbraith, Fred Overmars, Janet Wilmshurst, John Ogden, Matt McGlone, Mel Galbraith

Minutes
The meeting was held as part of the NZES 2018 annual conference. Minutes taken and collated by NZES Secretary, Kiri Joy Wallace

1. Welcome and apologies

Cate Macinnis-Ng (new president) opened, gave apologies.

2. Acceptance of 2017 AGM minutes

Moved by Cate Macinnis-Ng, seconded by Carol West

3. President's report

Cate Macinnis-Ng gave the President's report (appended below). She gave special thanks to the 2018 conference organisers and a general summary of 2018 work by the NZES council.
Cate Macinnis-Ng moved report be accepted and Tim Curran seconded.

Presidents report 2018

Tēnā koutou katoa. It's lovely to be back in Aotearoa after our trip across the ditch last year. It's definitely a change of scenery with no bearded dragons or wallabies joining us in 2018 but it's great to be in Wellington where predator-free seems like a realistic ambition and the new facilities here at Vic are fabulous. I would like to thank the organising committee for this conference, Stephen Hartley, Clayson Howell, Rod Hitchmough, K.C. Burns, Rachael Shaw, Michael Jackson and Olivia Vergara for putting on a great meeting so far. We're really glad to be working with Kerry South from Conferences and Events again.

It's an initmate group this year at the conference so I'd like to acknowledge members who have chosen to join us in the capital. Still, it's been nice to spend more time with the group and not have to race between sessions.

2018 has been a busy year for council. I've already provided some insights in my President's address. But without the pomp and pagentry, a quick summary of my presentation.

This year, we have renewed our strategic plan. Huge thanks to Simon, Clayson, Bruce, Gretchen and Rachel for revising the plan to best meet NZES goals and member suggestions from the 2017 member survey. The previous strategic plan produced in 2013 was a rich and ambitious document. Some of the goals were a bit beyond the budget and volunteer capacity of NZES so the new strategic plan may be a little more achievable. The draft document will be tabled later in this meeting. We welcome ongoing feedback on this living document.

Our equity and diversity statement was shared with other constituent organisations of the Royal Society Te Apārangi. NZES is proud to be a leader amongst societies in this area. That said, it's an ongoing challenge to ensure we cater for under-represented minorities and we are seeking continuing support from RSTA on this.

The journal continues to operate well under George Perry's excellent leadership as editor. We have a great team of associate editors and continue to publish relevant research for NZ ecologists.

Our social media presence has grown this year with over 3700 followers on Facebook and 1500 followers on Twitter. Both of these platforms allow us to reach a much larger audience than our membership base.

Two past winners of the Te Tohu Taiao Award were elected as fellows of the Royal Society Te Apārangi this year. Congratulations to Jason Tylianakis (2014) and Kim King (1999) – richly deserved recognition of the contributions both of these ecologists are making.

We have two members of council leaving us this year. Our memberships officer, Gretchen Brownstein has kept our members database in shape and running well for 2 years. She also managed the members survey in 2017 – writing the questions, publicising the survey, collating the results and making some meaning out of it all for us. Thanks, Gretchen, for these very valuable contributions. Jacqueline Beggs has finished her term as Kauri Fund Trustee. She has provided oversight and leadership in the period of change as we work to enhance investments and maximise the impact of the things we do with the fund.

I would like to conclude by thanking all council members for their time and energy this year. It's been a real pleasure to work with each and every one of you and I am looking forward to more productive activities next year. I am particularly grateful to Chris Bycroft for his tireless efforts as Treasurer. Good thing Chris is a distance runner because otherwise I'd be worried he might run out of steam!

Enjoy the rest of the conference and we hope to see you in Lincoln next year for NZES2019!

Tēnā koutou, tēnā koutou, tēnā tātou katoa.
Cate Macinnis-Ng

4. Election of Officers

Nominations for all officers were called for, and all positions elected unopposed. Cate Macinnis-Ng ran the elections process with the exception of presidential election, which Kiri Joy Wallace ran.

- *President:* Cate Macinnis-Ng was the sole nominee. *Susan Timmins moved, Shona Myers seconded. Moved unopposed, accepted and carried.*
- *Treasurer:* Chris Bycroft was the sole nominee. *Tim Curran moved, Clayson Howell seconded. Moved unopposed, accepted and carried.*
- *Secretary:* Kiri Joy Wallace was the sole nominee. *Simon Moore moved, Tim Curran seconded. Moved unopposed, accepted and carried.*
- *Kauri Fund Trustee:* Carol West was the sole nominee. *Bruce Burns moved, Dave Kelly seconded. Moved unopposed, accepted and carried.*
- There were no general councillor vacancies.

Elections were closed by Cate Macinnis-Ng. All new officers were accepted, and they will take their places on the council accordingly.

5. Treasurer's report

Chris Bycroft gave an overview of the society's finances by showing tabled documents on the projector screen (appended below). Overall assets have increased since 2014. Investment accounts are very slowly increasing.

Treasurers report 2018

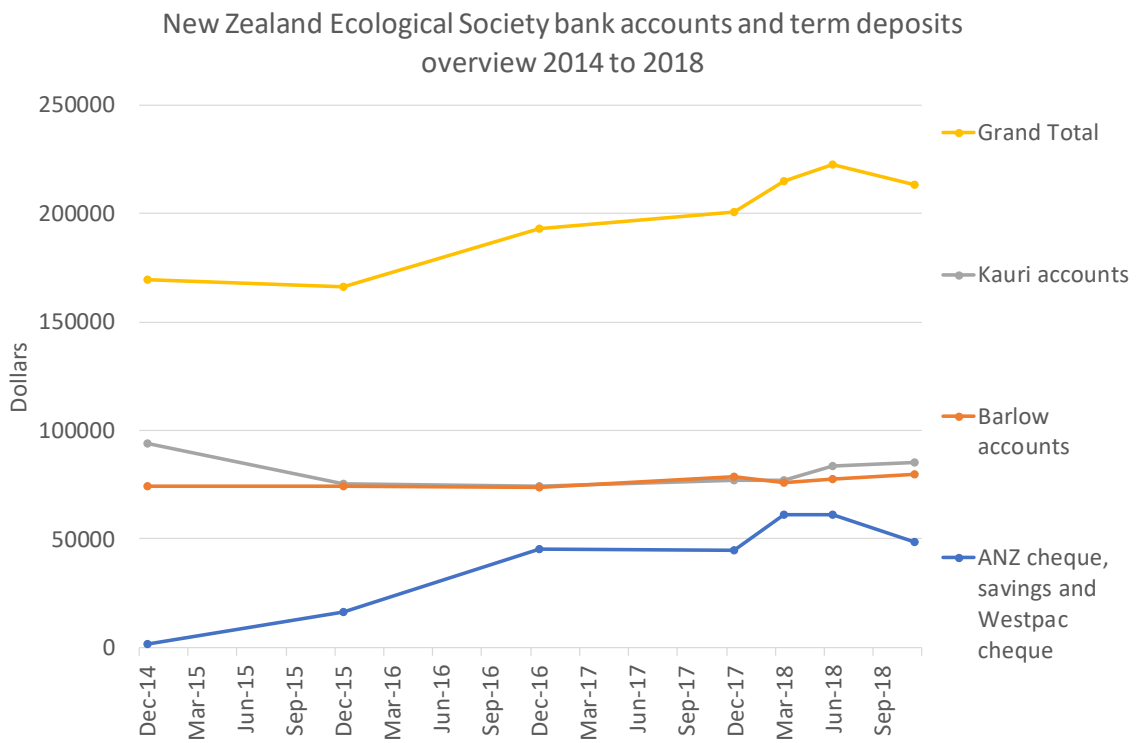
Comparison of accounts November 2017 and November 2018:

24 November 2018	**($)**
NZES Cheque (ANZ):	22,384.94
NZES Savings (ANZ):	33,856.26
Barlow Fund (ANZ):	36,713.92
Kauri Fund (ANZ):	27,506.39
Westpac Savings:	4053.63
Barlow Term Deposits	28,000 (12 months 3.45%)
Kauri Term Deposits	18,000 (12 months 3.45%)
Barlow (Growth Fund -Simplicity):	14,538
Kauri (Growth Fund -Simplicity):	38,868
Grand Total	**223,921.14**

13 November 2017	**($)**
NZES Cheque (ANZ)	4,445.11
NZES Savings (ANZ)	32,866.13
Barlow Fund	18,971.67
Kauri Fund	20,488.99
Westpac	4,278.88
Barlow Term Deposits(s)	59,567.48
Kauri Term Deposit (s)	56,570.48
Grand Total	**197,188.74**

Barlow Fund overall:	November 2016 ($75,389.77) November 2017 ($78,539.15), November 2018 ($79,251.92)
Kauri Fund overall:	November 2016 ($76,841.46) November 2017 ($77,059.47) November 2018 ($84,374.39)

It should be noted that the process of investing the Kauri Fund and Barlow fund in term deposits has continued. In 2018 we have also set up growth funds in the fund provider Simplicity, in an attempt to grow the investments for the Barlow and Kauri funds at a greater rate than term deposits. These are considered by Council as long-term investments.



The above chart shows an overview of the society position between December 2014 and November 2018. It also shows changes to the Kauri Fund, Barlow Fund and overall amounts in other accounts (e.g. savings, cheque accounts).

Summary of performance report for year ended 31 December 2017:

The main report can be viewed on the Charities website. Key summaries are provided below. Note: due to the changes in reporting standards for year ending 2016, some items have not been worked through as they are not directly comparable.

How it was funded – what did it cost?

	2017	2016	2015	2014
Revenue				
Fees subscriptions and other revenue from members	23,972	31,537	43,819	31,291
Revenue from providing goods and services	13,690	62,658	18,924*	15,508
Interest, dividends and other investment revenue	5,982	5726	5,072	6,275
Other revenue	3,430	3498	Not worked	Not worked
Total Revenue	***47,074***	***103,419***	**77,706**	**53,010**
Expenses				
Volunteer and employee related costs	12,609	8,136	11,598	12,726
Costs related to providing goods or service	36,195	42,930	Not worked	Not worked
Other expenses	8,069	7,397	Not worked	Not worked

	2017	2016	2015	2014
Total expenses including depreciation	***56,874***	***58,463***	Not worked	Not worked
Surplus/(deficit for year)	(9,799)	44,956	(12,250)	(30,362)

'What the Entity owns?' and 'What the Entity owes'

Assets

	2017	2016	2015	2014
Current assets				
Bank accounts and cash	81,962	58686	Not worked	Not worked
Debtors and prepayments	5545	15,440	Not worked	Not worked
Other current assets	66,138	136,394	Not worked	Not worked
Total current assets	***153,645***	***210,520***	Not worked	Not worked
Non-current assets				
Property, Plant and Equipment	4,865	7,934	Not worked	Not worked
Investments	50,000	0	Not worked	Not worked
Total non-current assets	54,865	7,934	Not worked	Not worked
Total Assets	**208,510**	**218,455**	Not worked	Not worked

'What the Entity owns?' and What the Entity owes'

Liabilities

	2017	2016	2015	2014
Current Liabilities				
Creditors and accrued expenses	6,896	6,800	Not worked	Not worked
Employee costs payable	-	242	Not worked	Not worked
Total current liabilities	***6896***	***7042***	Not worked	Not worked

Total Assets less Total Liabilities (Net Assets)	**201,614**	**211,413**	166,457	178,707

Accumulated Funds

Accumulated surpluses or (deficits)	48,327	63,782	Not worked	Not worked
Reserves	153,286	147,631	Not worked	Not worked
Total Accumulated Funds	201,614	211,413	Not worked	Not worked

REVENUE ($ values below) Note: some smaller items not included.

	2017	2016	2015	2014
Fees, subscriptions and other revenue from members				
Membership	23,972	31,537	43,819 31,291	
Revenue from providing goods and services				
Conference	0*	50,435	6,753	0
Copyright fee	340	135		
Journal Subscriptions	4,603	5,435	5,403	9,101
Pages Charges	8,747	6,653	6,768	6,407
Interest, dividends and other investment revenue				
Interest Received	5,982	5,726	5,072	6,275
Sundry Income	0	0	9,891	866
JSTOR	3,430	2,568		
Total Income	**47,074**	**103,419**	**77,706**	**53,010**

Less Expenses ($ values below) Note: some smaller items not included.

	2017	2016	2015	2014
Volunteer and employee related costs				
Illustrations	650	650	975	2,079
Secretariat	1,479	1716	10,623	10,651
Technical Editing	10,480	5,700		
Costs related to providing goods and services				
Accountancy Fees	3,116	1,400	2,500	2,500
Bank charges*	213	1,162		
Awards	6,150	9,092	12,345	3,117
Conference expenses	0	5,397	7,940	11,140
General Expenses	1,992	1,371	2,194	1,147
Journal Promotions	19,158	19,427	18,816	27,971
Subscriptions	1,959	1,544	1,500	1,500
Travel - Local	1,959	787	1,369	3,426
Web Site	1,665	2,750	5,424	640
Other expenses				
Audit Fees	5,000	2,300	2,500	2,500
Depreciation	3,069		5097	
Total expenses*	**56,874**	**58,463**	**89,956**	**3,372**
NET SURPLUS/(DEFICIT)	**(9,799)**	**44,956**	**($12,250)**	**($30,362)**

Analysis of Liabilities

	2017	2016	2015	2014
Bank accounts and cash				
ANZ Current Account	10,403	21,122	12,751	1,156
ANZ Serious Saver	33,027	22,164	354	106
ANZ Serious Saver - Barlow Fund	16,544	5,316	74,502	74,029
ANZ Serious Saver - Kauri Fund	20,604	7,822	75,615	94,225

	2017	2016	2015	2014
Westpac Trust Cheque	1,383	2,262	3,061	138
OTHER CURRENT ASSETS (No term deposits prior to 2016)				
Term deposit '1000' Barlow	70,136			
Term deposit '1001' Kauri	66,258			
Term deposit '1003' Barlow	34,576	0		
Term deposit '1006' Kauri	31,570	0		
Total other current assets	66,138	136,394		
OTHER NON-CURRENT ASSETS (nothing prior to 2016)				
Term deposit '1004' Barlow	25,000			
Term deposit '1007' Kauri	25,000			
Total other non-current assets	50,000			
Debtors and prepayments (Only worked out for 2017 and 2016)				
Accounts receivable	646	10,054		
Accurred income	3,189	3,622		
GST	960	1764		
Prepayments	750	0		
Total Debtors and prepayments	*5,545*	*15,440*		

Question: Why does the society have two bank accounts (one Cheque and one Savings)? Wondering if it is too much to have sitting without gaining interest. Chris Bycroft pointed out that we need to have disposable money available for expenses (e.g. journal) and other ongoing expenses such as keeping the website updated, secretariat costs, and the general running of the society.

Question: Why did the membership go down quite a bit over the past year? Clayson Howell mentioned that our dropping numbers were the reason we did the membership report in 2018. Cate Macinnis-Ng added this drop in numbers is a common occurrence across these sort of societies.

Question: How will going online-only with the journal affect these numbers? Chris Bycroft responded, should save about $5,000/year, which should make a big difference to our accounts.

Question: Why is the audit fee doubled? Chris Bycroft responded 2017 was a special occurrence in higher fees due to moving to a higher level of charity rating. Also one fee was paid in the following financial year.

Treasurer's report was moved to be accepted by Chris Bycroft, seconded by Cate Macinnis-Ng.
Chris Bycroft also moved that performance report for the year ending 31 December 2017 be accepted as well and seconded by Jill Rapson.
Accepted unopposed.
Cate gave special acknowledgement of Chris' Bycroft's excellent efforts as Treasurer.

6. Membership report

Cate Macinnis-Ng tabled this report on behalf of Gretchen Brownstein (appended below).

Membership Report November 2018

The overall membership is again down this year. The total membership is 8% lower than in 2017; the greatest loss was in the full member category. We continue to have 77% of members paying on time. In more positive news, NZES welcomed 64 new members this year, 24 Full and 38 Unwaged.

Membership summary as at 19th November 2018

	Total	Complim	Paid to date	Unpaid Due
Full	356		277	79
Honorary Life	14	14		
Overseas	6		5	1
Overseas Unwaged	4		3	1
Tasman linkage membership	4		5	
Unwaged	121		86	35
Total Nov 2018	**507**	**14**	**376**	**116**
Total Nov 2017	553	16	407	130

Comment on report: Bruce Burns, Tasman link members, there are 4 but 5 payments? Response that unsure why this is.

Question: Is there a facility for automatic direct crediting: this is great because it can just turnover every year…and we don't have anything like this right now? Cate Macinnis-Ng agreed and requested Sarah Wyse to look into how set this up with consideration for unwaged/unpaid, as continued payments will not be applicable as this category will change.

Question: If we continue to trend downwards in membership, when will we be unable to sustain our journal etc? Cate Macinnis-Ng responded, this is not the first time this has happened, Debra Wotton commented that it has been consistently declining. Tim Curran mentioned we should perhaps do an analysis to find out where we would break even and start eating into savings.

Debra Wotton: Has there been more discussion about access to the journal…no benefit to being a member because you can get the articles anyway? Cate Macinnis-Ng shared council's idea about the 12 month lock on journal articles so members only can see, however noted this would go against the ethos of the society. (Debra Wotton said that apparently open access doesn't make any difference to citations). Cate Macinnis-Ng addressed ongoing finance decline…seeking sponsorship from organisations who have employees involved with the society as possible avenue of income?

George Perry shared some of the impacts of what going online-only with the journal will do (positively) for 2019. Lisa Denmead asked if there are initiatives other societies have taken to boost their membership? Cate Macinnis-Ng responded that there are some things that have been tried but nothing with overwhelming success. Comment was that social media can be helpful to raise profile and gain members (youtube videos?). Cate Macinnis-Ng said that we are getting good responses to the twitter and facebook info that NZES puts out there. Suggestion: could send out survey to past members to find out why they stopped the membership?

Discussion ensued about why people may not be renewing their memberships (are they just forgetting)? Simon Moore invited members to give us ideas around membership areas in the NZES 2019-2014 strategic plan. Carol West suggested we continue to focus on diversity in the council but further, also consider where new members might be recruited from: aside from students, the next largest pool could be from ecological consultancies.

Dave Kelly reminded us that there were big dips in NZES membership and then growth again in the past, and we are in a better space financially to tide through tough bits and see how long membership drops last. Also commented that our society is friendly and like a big family and that atmosphere goes a long way if we keep it like that. The strategic plan seems like a good way to further this atmosphere, as well as the high-quality journal communicating our ecology to everyone out there.

7. Journal report

The journal's scientific editor, George Perry, summarised the journal report (appended below). Generally, publishing roughly 50 articles/year, two volumes in 2018. IF for 2018 was down a little bit. Next year going online-only due to lack of demand and substantial costs to print.

James Brock/George Perry will be heading up the Hot Topics initiative in 2019. Also will make push to submit source code and data to journal or other repository for future publications. Special virtual issue on Mātauranga Māori next year. Special thanks to the editorial board supporting this. Katherine Russell does technical editing, James Brock been filling in for her while on parental leave.

Question: Cate Macinnis-Ng, asked who is publishing in the journal? George: Dominant contributors are Maanaki Whenua and DOC, some Universities (but very specific people e.g. Dave Kelly). NZJE is fighting against PBRF, which encourages publishing external to the country.

Question: Olivia Burge, code of conduct that is to be introduced to society, will that be extended to those who contribute to NZJE? Because being a member may make it more likely that people will try to publish in journal? George answered that our code of conduct is to be more around conferences, not the journal.

Question from Sarah Wyse: Any thoughts around doing double blind reviewing? George Perry responded that he has considered but single blind remains the

industry standard, comment that double blind doesn't usually help because of what you can google these days.

Cate Macinnis-Ng gave special thanks to George Perry for all his journal contributions.

Cate Macinnis-Ng moved journal report be accepted, Deb Wilson seconded.

New Zealand Journal of Ecology Editor's Report 2018

I am pleased to be able to report on the activities of the New Zealand Journal of Ecology in 2018. The journal continues to receive many high-quality and diverse submissions (around 50 per year). In 2018 two standard issues have been published comprising a total of 35 (11 + 24) articles; Vol. 43 (1) is nearly finalised, with seven articles already available on-line. The 2017 impact factor (IF) for the journal was 1.309, which is lower than 2016 (1.704,) but still a good result; by way of comparison NZ J Botany has 0.963, NZ J Zoology has 0.415 and Austral Ecology has 1.826.

Some important changes in the way that the journal is run and produced have occurred this year. First, volume 42(2) was the final edition to be produced in print (hard-copy). Production of the journal is one of the major expenses that the Society incurs and moving to online-only will help to reduce these costs. This shift is occurring across scientific publishing, and, for example, Austral Ecology have recently announced that they will be online-only from 2019. Second, the editorial side of the journal has moved to the Scholastica system, which will make managing the editorial process considerably easier than the spreadsheet and gmail solution we have been using previously. In my report last year I discussed considerations of shifting production to a publishing house. After some consideration and research we have decided to stay self-published for now; a key driver of this decision was a feeling that the open-access nature of the journal is important in ensuring we communicate to the broadest possible cross-section of New Zealand's ecologists.

Looking forward, in 2019 we will be introducing a 'hot topics' section to the web-site, similar to the successful Ecological Society of Australia model. Hot Topics aim to provide concise syntheses of topical issues in NZ ecology accessible to the non-scientific community. James Brock will be managing the Hot Topics submission process and information will be on-line in the next couple of weeks. We will also be fostering a move towards reproducible science with authors encouraged to make data and source-code available in public repositories (as appropriate); this move is in line with many other ecological journals.

The success of the journal is in large part the result of the superb support I receive from the editorial board and the referees. Anne Gaskett (University of Auckland) and Al Glen (Manaaki Whenua) joined the board in 2018, and Des Smith stepped down; my thanks to Des for his years of service to the journal. The journal is lucky to have Katherine Russell as a technical editor, and I am very grateful for the work she does for us. While Katherine was on leave during the middle of 2018, James Brock acted as technical editor for

Vol.42(2) and I am grateful to him for stepping into the breach. Compared to other (international) journals I am involved with the standard of the editorial and review process is rigorous but supportive. I remain very grateful to the editorial board, the reviewers, the authors and the Society for their continued support.

George Perry

8. Newsletter report

The NZES newsletter editor, Angela Simpson, gave an overview of the newsletter:

- Three newsletters in 2018 so far, one more expected in 2018, covering the conference.
- Steady stream of contributions over 2018, articles from students, some profiles, conference reports from elsewhere.
- Maintained Across the Ditch section with ESA.
- Illustrate ecology at beginning of newsletter, has been helpful for students to show their research. Angela Simpson has contacted some people about doing this over the year. It can be comics, photos, other such things.
- Thanks to Bruce Burns and Kiri Wallace for Ecotones and all those who have contributed to the 2018 newletter.

Cate Macinnis-Ng: Special thanks to Angela Simpson for ongoing work on the newsletter.

9. Tabling of Summary of Strategic Aims 2019-2023 (available here https://newzealandecology.org/strategy)

Cate Macinnis-Ng invited comments from meeting:

- Tim Curran gave special thanks to the sub-committee for handling this assignment, special thanks to Simon Moore and Rachel Nepia as well.
- Cate Macinnis-Ng gave overview of how this re-vamping of the plan was handled (formation of sub-committee etc.)
- Simon Moore mentioned some of the feedback about the plan that has already come in (around being sustainable etc.) Also, that we hope to do a little summary plan at each AGM to help society know how we are doing with the strategic plan.
- Rachel Nepia mentioned that it is a big list of things that we want to have happen in the future, welcome input from society members to help drive some of those initiatives.
- Cate Macinnis-Ng invited feedback at any time on this document, as it is a living document.

Any other business

a. Special Announcement of Oliva Burge as NZES membership officer since Gretchen Brownstein has stepped down this year.

b. Simon Moore promoted the Intecol Wetlands Conference 2020 in Christchurch, Philippe Gerbeaux at DoC is the main contact for this.
c. No other business raised.

News from across the ditch

The Ecological Society of Australia December bulletin includes articles about academic freedom, western Australia's threatened flora, and bio-cultural knowledge of landscapes and ecosystems. You can read more online here: https://www.ecolsoc.org.au/files/bulletins/bulletin_march2019_0.pdf

Publications in the current issue of NZ Journal of Ecology (Volume 43, Issue 1)

Research Article

Invertebrates of an urban old growth forest are different from forest restoration and garden communities : 3350
Richard J. Toft, Denise E. Ford, Jon J. Sullivan, Glenn H. Stewart

Identification of potential invertebrate bioindicators of restoration trajectory at a quarry site in Hunua, Auckland, New Zealand : 3360
Mike H. Bowie, Erica Stokvis, Keith Barber, John Marris, Simon Hodge

Loss of wetlands since 1990 in Southland, New Zealand : 3355
Hugh A. Robertson, Anne-Gaelle Ausseil, Brian Rance, Harley Betts, Eva Pomeroy

Predator control on farmland for biodiversity conservation: a case study from Hawke's Bay, New Zealand : 3358
Alistair S. Glen, Mike Perry, Ivor Yockney, Sam Cave, Andrew M. Gormley, Campbell Leckie, Rod Dickson, Wendy Rakete-Stones, Pouri Rakete-Stones, Grant L. Norbury, Wendy A. Ruscoe

Costs and benefits of aerial 1080 operations to Western weka (*Gallirallus australis australis*) : 3353
Joris S.J. Tinnemans, Graeme P. Elliott, Tristan E. Rawlence, Anja McDonald, Mara A. Nydegger Bell, Christopher W. Bell, Kirsty J. Moran

Kea survival during aerial poisoning for rat and possum control : 3351
Joshua R. Kemp, Corey C. Mosen, Graeme P. Elliott, Christine M. Hunter, Paul van Klink

Using paired acoustic sampling to enhance population monitoring of New Zealand's forest birds : 3356
Sara P. Bombaci, Liba Pejchar

Other recent publications on New Zealand ecology

Bruce Burns

Apologies if I have missed your publication in my search. If I have, please send a citation to b.burns@auckland.ac.nz so I can include it in the next Ecotones.

Baillie BR, Hicks BJ, Hogg ID, Van Den Heuvel MR, Kimberley MO in press. Debris dams as habitat for aquatic invertebrates in forested headwater streams: A large-scale field experiment. Marine and Freshwater Research.

Bell BD, Easton LJ, Walker KJ, Woolley CK 2019. Physical contact between a native frog (*Leiopelma pakeka*) and a carnivorous land snail (*Powelliphanta hochstetteri obscura*): what was going on? New Zealand Journal of Zoology 46: 182-187.

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Booth JD 2019. Recent (post-1930) changes in the extent of subtidal seagrass (*Zostera muelleri*) beds of the eastern Bay of Islands, New Zealand. New Zealand Journal of Marine and Freshwater Research 53: 113-127.

Bourdôt GW, Lamoureaux SL, Jackman SD, Noble ADL, Chapman DF 2019. *Ranunculus acris* control in dairy pasture–a comparison of herbicides, plant growth promoters, a bioherbicide and pregraze mowing. New Zealand Journal of Agricultural Research 62: 184-199.

Bourdôt GW, Saville DJ 2019. *Nassella trichotoma*–plant growth rates and effects of timing of grubbing on populations in North Canterbury grassland. New Zealand Journal of Agricultural Research 62: 224-245.
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Brock JMR, Burns BR, Perry GLW, Lee WG in press. Gametophyte niche differences among sympatric tree ferns. Biology Letters.
Brough T, Rayment W, Slooten E, Dawson S 2019. Fine scale distribution for a population of New Zealand's only endemic dolphin (*Cephalorhynchus hectori*) shows long-term stability of coastal hotspots. Marine Mammal Science 35: 140-163.
Canning AD, Death RG, Gardner EM in press. Forest canopy affects stream macroinvertebrate assemblage structure but not trophic stability. Freshwater Science.
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Catlin AK, Collier KJ, Duggan IC in press. Diet of juvenile *Galaxias maculatus* (Galaxiidae) during the upstream migration period in the lower Waikato River, New Zealand. Marine and Freshwater Research.
Chilvers BL, Hiscock JA in press. Significant decline of endangered Antipodes Island penguins: Is extreme weather an additional impact? Aquatic Conservation: Marine and Freshwater Ecosystems.
Chousou-Polydouri N, Carmichael A, Szűts T, Saucedo A, Gillespie R, Griswold C, Wood HM 2019. Giant Goblins above the waves at the southern end of the world: The biogeography of the spider family Orsolobidae (Araneae, Dysderoidea). Journal of Biogeography 46: 332-342.
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Noticeboard and upcoming conferences

New Zealand Ecological Society conference 2019

The next NZES conference will be held in Lincoln, Canterbury, from 1st to 5th December 2019, at Lincoln University. A student day will be run on Sunday 1st December. Conference talks will occur from Monday to Wednesday, and on Thursday 5th there will be a selection of field trips to local and regional sites of ecological interest More information will be available in future issues of this newsletter and on the New Zealand Ecological Society website.

11th INTECOL International Wetlands Conference, Christchurch, 2020

The INTECOL Wetland Working Group (WWG) will hold the 11th INTECOL International Wetlands Conference in Christchurch, New Zealand, in Spring 2020. The Chair of the organizing committee is Philippe Gerbeaux, and the Co-Chairs are Deirdre Hart, Clive Howard-Williams, Di Lucas, Aroha Mead and Shona Myers. The tentative conference theme is: Traditional knowledge and innovative science in wetland research and management. A strong Maori and Oceania cultural presence is guaranteed within and around the conference.

Stay tuned for more information! http://intecol.org/node/37

Workshop: Tracking of small wildlife for conservation and biosecurity research

Scion and the University of Canterbury's Wireless Research Centre invite you to a one day workshop on novel engineering solutions to the real-time tracking of small animals (including insects) for conservation and biosecurity purposes. We aim to bring biologists with a background in insect tracking together with engineering experts in RF design, radar systems, wireless communications, bio-inspired energy harvesting and autonomous systems to initiate a discussion of current problems in tracking of small animals/insects and their possible engineering solutions.

We will be joined on the day by international experts in insect tracking, Bruce Colpitts (University of New Brunswick, Canada), Jon Sweeney (National Resources Canada), Graham Brooker (University of Sydney) and other selected experts from around New Zealand. It is our hope that this workshop will stimulate new interactions and future research collaborations (including grant applications) to solve existing wildlife tracking challenges.

Anyone with relevant engineering research experience as it relates to the challenge of tracking small moving objects is encouraged to attend. We are inviting expressions of interest from research biologists that have experience and/or interest in tracking the movement of insects, birds, small mammals or herpetofauna. Due to the limited time available and to ensure a focused discussion we request that biologists submit a short abstract from which we will select four to be presented on the day.

When: Monday, 6 May, from 9am - 4.30pm.
Where: Tekapo Room, Scion, 10 Kyle Street, Christchurch, New Zealand.
Enquiries and submission of abstracts by Friday, 5 April 2019
to anastasia.lavrenko@scionresearch.com
Invitations and registration by Friday, 12 April 2019
Application format: short abstract (250-300 words) highlighting participant's interest and experience (examples of specific activities, problems to be solved, particular system expectations, etc.) related to tracking of small animals for conservation or biosecurity purposes. Please provide a clear description of the engineering challenge to be overcome.

Botanic Gardens Australia New Zealand 9th Congress

Te Papa (Wellington) 20-23 October, 2019

Plants from the past – plants for the future

https://www.confer.nz/bganz2019/

This conference will explore the role of Botanic Gardens in science communication & story-telling, plant conservation, managing collections and displaying plants. Join us – or submit an abstract to contribute your ideas. There are keynote speakers on biosecurity, climate change, plant blindness, cultural use and more. Key note speakers include Dr Kath Dickinson (Otago University) and Dr Cate Macinnis-Ng (Auckland University). Botanic Gardens Australia and New Zealand (BGANZ) is the peak body representing all botanic gardens in Australia and New Zealand. BGANZ promotes the interests and activities of all Australian and New Zealand botanic gardens through its 140 member gardens, enhancing the state of botanic gardens internationally.

37th annual John Child Bryophyte and Lichen Workshop Camp Taringatura, Southland -- 14 - 19 November 2019

We are pleased to announce that the 2019 John Child Bryophyte and Lichen Workshop will be based at Camp Taringatura from the evening of **Thursday, 14 November**, to the morning of **Tuesday, 19 November**. The Camp sits beside the Taringatura Reserve, situated between Dipton and Winton. Nearby are all sorts of rare and interesting remnants of the original wetlands, tussock grasslands, shrublands, rock outcrops, and diverse forests that once covered the Southland plains and Hokonui Hills, most of them carefully preserved by QEII Covenants or DOC Reserves. The covenant owners especially will be pleased to have bryophytes and lichens added to their species lists.

The workshop is open to anyone and everyone with an interest in the mosses, liverworts, and lichens of New Zealand, from beginner to expert. We have booked exclusive use of Camp Taringatura for the workshop and accommodation is available on site (bunks in 5 separate cabins for $25/night or campsites for $15/night). Evening meals will be catered and breakfast/lunch foods will be provided as well. We anticipate total cost for the workshop will be around $350; we will be requesting a deposit of $150 to confirm your place by 14 October.

Tom Moss Award: This award is open to any student studying any aspect of Australasian bryophytes and/or lichens. See the Wellington Botanical Society page for details.

Botanical Society of Otago Grants: This year the Botanical Society of Otago is offering two grants of $100 each to assist two people who might otherwise not be able to attend the workshop. If you would like to apply for one of these grants, please email bso@otago.ac.nz by 1 September with a paragraph summary, including:

1) Your background and why you would benefit from the grant

2) What you can do to benefit the Workshop (e.g., give a talk, help set up a display table)

Estimate of numbers: We would appreciate your indication of interest in attending the workshop. Please email angela.j.brandt@gmail.com as soon as possible with one of the following responses:

1. Yes, I will be attending the workshop and I'll stay at Camp Taringatura
2. Yes, I will be attending the workshop but I will find my own accommodation
3. I do not know if I can attend yet but will let you know as soon as possible
4. No, I will not be attending this year
5. Please take me off your mailing list a) for this year or b) forever

Please spread the word! Feel free to pass this information on to any other interested parties, who can request to be added to the mailing list for further updates on the workshop. We will send out the next circular with more details by early May.

We look forward to seeing you in Southland this November!

Organisers: Angela Brandt, Allison Knight, Maia Mistral, John Steel, David Glenny, Kelly Frogley, and Penelope Gillette

Birds New Zealand Research Fund

This important national fund is managed by Birds New Zealand on behalf of a New Zealand Charitable Trust. We invite applications from individuals or organisations prepared to make a difference through ornithological research, with outcomes likely to provide for better management of New Zealand birds or their environment. This year's closing date is **15 June 2019**. For details visit www.osnz.org.nz/Birds-New-Zealand-Research-Fund

ASBS-NZPCN 2019 Conference in Wellington

The 2019 New Zealand Plant Conservation Network conference will be held in Wellington on 24–28 November 2019. This is a joint conference with the Australian Systematic Botany Society. The conference title is "Taxonomy for Plant Conservation – Ruia mai i Rangiātea". The venue is the Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand. 5 full days including presentations, workshops, field trips, and public events. Get more details and subscribe to updates on the conference website https://systematics.ourplants.org/information/

Workshop on Ecological and Evolutionary Genomics

Where: Katoomba, Blue Mountains (NSW, Australia)
When: August 4th-9th 2019
Website: https://www.weeg2019.com/

Overview: The Workshop on Ecological and Evolutionary Genomics will be held in the stunning Blue Mountains of New South Wales, within the heart of the historical town of Katoomba 1.5hrs from Sydney, Australia. Topics covered will include landscape genomics, detecting selection, genomic structural variants, and DNA metabarcoding. Each day of the workshop is dedicated to a particular topic, with international and national academic presenters.

Participants will gain theoretical knowledge combined with analytical skills to produce results that are relevant for conservation biology and understanding evolutionary processes. The workshop is open to PhD and Masters students, post-docs, and all levels of faculty. The workshop assumes a basic understanding and working knowledge of population and evolutionary genetics and modern sequencing technologies.

Keynote presenters:

- Ary Hoffman (University of Melbourne, VIC)
- Brenna Forester (Colorado State University, USA)
- Niko Balkenhol (University of Goettingen, Germany)
- Maren Wellenreuther (University of Auckland/ Plant and Food Research, New Zealand)
- Anthony Chariton (Macquarie University)

Registration is via application only. A statement of interest and a brief 1-page CV is required (details: www.weeg2019.com).

Applications are to be sent to weeg2019@mq.edu.au by the CLOSING DATE APRIL 26th. Successful applicants will be invited to register within 1-2 weeks of the closing date. This workshop is funded by the NSW Chief Scientist Conference Sponsorship Grant, The Centre for Biodiversity Analysis (ANU/CSIRO), evomics.org and supported by Macquarie University Workshop director: Dr Rachael Dudaniec (Macquarie University);
Contact: weeg2019@mq.edu.au

Office Holders of the New Zealand Ecological Society 2018

(Effective from December 2018)

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

Secretariat (society office – Susan Sheppard)
NZ Ecological Society Secretariat
PO Box 5075
Papanui
Christchurch 8542
P: 64 3 318 1056
F: 64 3 318 1061
E: nzecosoc@outlook.com
W: www.nzes.org.nz

President
Cate Macinnis-Ng
School of Biological Sciences
University of Auckland
Private Bag 92019
Auckland
P: 64 9 923 2343
E: c.macinnis-ng@auckland.ac.nz
T: @LoraxCate

Immediate Past President
Clayson Howell
Department of Conservation
PO Box 10-420
Wellington
P: 64 4 471 3113
M: 64 21 973 181
E:President@newzealandecology.org

Vice President
Tim Curran
Pest-management and conservation
PO Box 85084
Lincoln University
Lincoln 7647
Canterbury
E: Timothy.Curran@lincoln.ac.nz
T: @TimCurran8

Secretary
Kiri Wallace
Environmental Research Institute
University of Waikato
Hamilton
E: kiri.wallace@waikato.ac.nz

Treasurer
Chris Bycroft
Wildland Consultants
PO Box 7137
Te Ngae
Rotorua 3042
E: Chris.Bycroft@wildlands.co.nz

Councillors (3)

Bruce Burns
School of Biological Sciences
University of Auckland
Private Bag 92019
Auckland
P: 64 27 280 8332
E: b.burns@auckland.ac.nz
T: @BruceTracks

Simon Moore
Department of Conservation
Private Bag 5
Nelson 7042
P: 027 204 4791
E: shmoore@doc.govt.nz

Rachel Nepia
University of Waikato
Hamilton
E: ret12@students.waikato.ac.nz

Journal scientific editor
George Perry
School of Environment
University of Auckland
Private Bag 92019
Auckland
E: Editor@newzealandecology.org

Newsletter editor
Angela Simpson
Wildland Consultants
PO Box 7137
Te Ngae
Rotorua 3042
E:Newsletter@newzealandecology.org

Webmaster
Sarah Wyse
Bio-Protection Research Centre
PO Box 85084
Lincoln University
Lincoln 7647
Canterbury
E:Webmaster@newzealandecology.org
T: @SarahTheWyse

Membership officer
Olivia Burge
Landcare Research
Lincoln
Canterbury
E: burgeo@landcareresearch.co.nz