



**December 2018**

Catch up with all that's going on at CBRE



## Experts in developing rat lures

Dr Michael Jackson, along with Associated Professor Wayne Linklater and Dr Rob Keyzers, have identified five chemical compounds that are attractive to rats. In association with VicLink, the University's commercialization team, Dr Jackson and his team are working to turn these chemicals into commercial rat lure products. Dr Jackson has received funding from the KiwiNet Emerging Innovator Programme and the Department of Conservation to realize these efforts.

Learn more about this exciting research on the [SBS webpage](#) or listen to an interview with Michael on [RadioNZ](#).



## Research paper reveals conservation 'winners'

Associated Professor Nicola Nelson recently published a paper demonstrating the huge gains conservation efforts have made over the past 30 years.

The paper, published in the *Journal of the Royal Society of New Zealand*, uses seven case studies to explore successful species conservation in New Zealand.

“We believe that promoting successful examples of conservation will help the wider community realise the importance of conservation in reversing the current extinction crisis we are facing,” says Associate Professor Nelson.

[Read the full story about the conservation winners.](#)



## Researcher edits special issue of Pacific Conservation Biology journal

The special issue, edited by Associate Professor Heiko Wittmer from the Centre for Biodiversity and Restoration Ecology, focuses on why conserving biodiversity in urban environments is important and why it requires different, often new, approaches.

“To achieve conservation outcomes that can be seen and enjoyed by everyone, we need to start directing significant conservation efforts towards peopled landscapes,” says Associate Professor Wittmer. “I consider myself very lucky to live in Wellington, a city that is at the forefront of such novel approaches to conservation, thanks to our progressive council, caring and informed citizens and opportunities associated with Zealandia, our inner-city nature reserve.”

The issue brought together scientists and conservation practitioners to explore three aspects associated with conservation in peopled landscapes: opportunities for conservation in densely populated and highly modified urban areas; challenges for invasive species control in urban areas; and stakeholder involvement for conservation action in protected areas.

[The whole story can be found on the CBRE homepage.](#)



## **CBRE student shows native mussels have personalities**

As part of her PhD research at Victoria University with Professor Jeff Shima, Amber McEwan discovered, almost by accident, that kākahi exhibit different behavioral traits. Freshwater ecologist Amber has undertaken a lot of work with various native freshwater species.

She was doing an experiment with around 80 tagged individuals in a tank and started to recognise something interesting.

"I started to notice that certain individuals were acting the same. I did some repeated trials looking at different types of activity and found that, yes, they were indeed exhibiting signs of individual personalities."

Unlike marine mussels, kākahi can move freely with the use of their muscular foot.

[Watch a video about Amber's work and read more about the personalities of kākahi.](#)



## Congratulations to our newest PhD graduates

CBRE recently celebrated its newest graduates. Out of the 78 PhD students who were presented with their degree this month, 10 were part of the Centre for Biodiversity and Restoration Ecology. This number is indicative of the breadth of research excellence within the Centre.

- Maren Preuss investigated New Zealand's seaweed biodiversity, describing several species and researching various aspects of their biology and evolution.
- Olivia Vergara examined the effects of mammal control and exclusion on ground-dwelling invertebrates in New Zealand forests, to better understand the impact over time of introduced mammals on invertebrate populations.
- Irina Ilyushinka investigated mechanisms underlying population differentiation and adaptation of the red rock lobster in order to inform conservation and sustainable harvesting of the species.
- Charlie Clark explored how plant species may adapt to a change in environment when introduced to a new geographic range.
- Balam Jimenez described the genetic structure and demographic history of the grey mullet in New Zealand and showed the importance of directing conservation efforts to juveniles and estuarine habitats.
- Iona Nyree Fea examined the impact of introduced mammals on New Zealand birds, to better understand the processes that affect the birds' long-term survival. [See Nyree's paper on the balancing act of fantail nesting success.](#)
- Yasmin Gabay examined the cellular and physiological events that occur when corals acquire different types of symbiotic

algae, and how these events might limit the capacity for corals to adapt to climate change.

- Antoine Felden investigated whether transporting exotic species outside of their native range may affect behavioural traits and promote their invasiveness. [See his paper in the Journal of Animal Ecology](#). Antoine is now working as a post-doc with Prof Phil Lester.
- Becky Focht utilised fine scale measurements to evaluate the effects of wave action on reef fish abundance, phenotype, performance, and behaviour.
- Evan Brenton-Rule's research used the examples of invasive ants, bees, and wasps to examine the interface between the ecology of invasive species and regulations intended to control them that have led to reduced uncertainty and new management approaches. [Evan's research](#) has also recently been featured on the SBS webpage - give it a read!



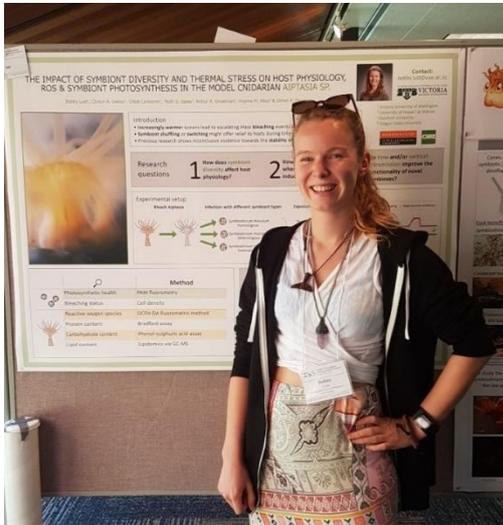
## CBRE 2018 project grants

Brittany Florence-Bennett and Grace Tocker, Masters Students within the School of Biological Sciences, have both been awarded \$2500 CBRE project grants.

Grace (photo left) aims to characterize the diet of the Whenua Hou diving petrel and to develop effective conservation strategies to support the declining populations of this newly described and critically endangered species.

Brittany will investigate the effects birds may have on lizard population dynamics and how these may be modeled. Brittany also received support from Wellington City Council's Our Natural Capital Grant scheme.

Thank you to our donors.



## CBRE students present at International Conferences

### Symbiosis Society Congress, USA

Bobby Lust, PhD candidate, presented her research on the impact of symbiont diversity and thermal stress on host physiology in the sea anemone *Aiptasia* sp.. Bobby received a CBRE conference grant earlier this year which allowed her to travel to the Symbiosis Society Conference, Oregon State University in the USA.

"At the conference, I presented a poster. This allowed me to discuss my proposed work with many experts in my field, and therefore I gained helpful suggestions for my thesis work. Furthermore, I had the opportunity to network with both those experts and my peers, and discuss issues with experimental techniques and potential solutions. From these discussions, I have been able to improve several techniques that I am using." Bobby writes in her report. Currently, she is still in touch with a few people from the conference to improve and discuss research. Bobby also attended the *Aiptasia* workshop. "This provided me with new insights into the field, and allowed me to experience the extensive development of *Aiptasia* as a model system first-hand. Overall, it has been great to be a part of this process."



### International Congress of Applied Psychology, Canada

PhD candidate Julie Whitburn presented her paper on the relationship between connection to nature and pro-environmental behaviour as part

of a symposium on understanding and encouraging pro-environmental behaviour. The International Congress of Applied Psychology occurred in Montreal, Canada, in July this year. Julie received a CBRE conference grant to attend this congress.

"The international conference was an opportunity to learn from others and engage with their work in formal and informal discussions. This improved my knowledge of my field and put my own research into a broader context. I have formed new relationships with researchers from many countries, which will be useful going forward. Attending this conference and presenting a paper forced me to grow and challenge myself by directly engaging with other researchers, many of whom are leaders in my field. I have come away with renewed motivation and confidence after receiving much positive feedback and interest about my presentation and in my research in general. Plus I had the pleasure of visiting beautiful Montreal. Thank you CBRE for supporting me to attend."



## CBRE student presence at Oceania congress

Thirteen current and recent students, as well as three staff members from CBRE presented details of their research at the Society for Conservation Biology's Oceania Congress at Te Papa in July. Many of the students were supported by CBRE grants, among them PhD candidate Victor Anton who reported:

"After my presentation, several people approached me intrigued to know more about the methodology I used, the challenges of undertaking ecological research in urban environments and the implications of my research. I am also grateful because this

congress provided me with the opportunity to learn novel conservation initiatives carried out by ecological scientists recognised worldwide like Dr. Hugh Possingham and Dr. Megan Barnes."

Victor investigates the impacts of invasive mammals in urban ecosystems. To better understand the ecology of these species in urban areas, remote cameras in 48 forested sites in Wellington were deployed between 2015 and 2016. Compared to more traditional monitoring methods, the cameras enabled simultaneously monitoring of a wide range of mammalian species and allowed for a range of analyses.

"It was a privilege to meet them [Dr. Hugh Possingham, Dr. Megan Barnes] afterwards, talk about their experiences with different organizations and companies involved in the conservation of biodiversity, and discuss potential opportunities for research collaborations. Overall, I had a truly fulfilling time and I am very thankful to CBRE for bringing me the opportunity to attend this event."

Furthermore, Victor has also been awarded a Victoria [Postgraduate Student Association Research Excellence award](#) for his research.



NEW ZEALAND  
ECOLOGICAL  
SOCIETY

## **NZ Ecological Society Conference hosted at Victoria University of Wellington**

The 67th annual NZ Ecological Society Conference was held at Victoria University of Wellington from 25th to 29th of November. The five-day event started with a Student Day, followed by a night tour of Zealandia, Conference dinner and a variety of Field Trips. Plenary

presentations were made by Dr Richelle Kahui-McConnell (Mealofa Ltd) and Dr Graeme Elliott (DOC).

Six staff and 12 students from CBRE made presentations at the conference on topics ranging from evolution of plants on islands, automated recognition of bird song, responses of bird populations to mammal control, wetland restoration, plant-fungus networks and urban ecology.

Three students were among the eight winners who were commended for talks or poster presentations. Roald Bomans won 'best poster' for his presentations "Automated bioacoustic monitoring of morepork (*Ninox novaeseelandiae*) across three aerial 1080 operations". Justyna Giejztowt and Julius Juodakis were highly commended for their talks.

Information on the conference can be found on the [NZES website](#). More details on the speakers and programme can be found in this [brochure](#).



## **Wellington City Council showcase inspires biodiversity management**

Seven students gave public presentations of their research on urban ecology at a research showcase organised by Wellington City Council at the Wellington Central Library on 19<sup>th</sup> September, 2018.

To inspire curiosity for Urban Ecology research and find solutions to the most urgent challenges, WCC has set up the Our Natural Capital Research Grants which every year are available to Victoria University faculty and students. In addition, WCC works closely with faculty staff through the People Cities and Nature Programme and sponsors summer scholars to help further research in areas where there is much to learn

such as lizards in urban environments, and predator dynamics.

Our Natural Capital, the council's biodiversity strategy, set a vision where others come to Wellington City Council for advice on how to manage indigenous biodiversity in an urban context, due to the knowledge WCC has gained through research programmes. WCC actively shares this knowledge and uses it to continually improve Wellington's own biodiversity management.

For more information on [Our Natural Capital](#), follow the link to the WCC's webpage.



## **CBRE volunteers engaging at Forest & Bird Youth networking event**

CBRE volunteers have been running a stall where they were able to talk to young environmentally minded people about potential careers in conservation and ecology. Volunteers presented chew cards and tracking tunnels, pinned insects, laptops with bird song and images of wildlife and research to start the conversation.

Forest and Bird Youth is a national network of you people aged 14-25 years, interested in the environment and taking positive action.

Forest and Bird Youth provides an amazing leadership opportunity, supporting youth to focus on and respond to the things that matter to them, and doing it in the ways they think will make the most difference.

Visit the [Forest & Bird Youth facebook page](#) for more information.



## Staff excellence awards

Victoria recognizes outstanding efforts through their excellence awards. These were given out for excellence in research and teaching, as well as for equity and diversity excellence, engagement excellence, health and safety excellence, and professional staff excellence.

CBRE Professor Jeff Shima has been awarded a VUW Teaching Excellence Award and CBRE Associated Professor Heiko Wittmer has been awarded a VUW Research Excellence award.

Please join us in congratulating Jeff and Heiko for receiving these highly-competitive awards.



## CBRE director

Dr Stephen Hartley, who had taken over Directorship for the Centre of Biodiversity and Restoration Ecology earlier this year when Associate Professor Wayne Linklater went on sabbatical, has now been officially appointed as director for the next three years. Please join us in congratulating Stephen and wishing him all the best for the coming term.

## Directors' Corner

2018 has been a busy year. Environmental and ecological topics have been high on the political and popular agenda: climate change, water quality, predator-control, sustainable fisheries, plant diseases, biodiversity loss and protection, a billion trees, to name but a few. There are rarely any quick fixes or silver bullets to address these problems, and whatever the solutions are we can be sure they will involve an integrated, multidisciplinary approach. The high-quality and thorough work undertaken by our Centre members and postgraduate students contributes knowledge that can lead to better informed, more effective management and conservation of our shared biodiversity taonga. Not only is this work published in top-rank academic journals, their expertise and opinions are shared through conferences, agency workshops, popular media and community events. We thank you all for your support and interest, and wish you the very best for 2019.

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