

Centre for Sustainability

NEWSLETTER JANUARY 2014



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MARSDEN GRANT

The Centre's Dr Cilla Wehi has been awarded a Marsden Fast-Start Grant of \$300,000 for her project focusing on the extinction of the Māori kurā (a Polynesian dog).

The project, "Colonisation impacts and the decoupling of human cultural and ecological systems", aims to discover more about why the kurā disappeared and what that tells us about the relationship between humans, the environment and our companion animals.

As well as consulting texts and oral traditions, Cilla and co-researcher Associate Professor Ian Barber (Archaeology) will analyse the elemental composition of kurā hair and bone to build a picture of the dog's ecological role through time. Her research will later include the kiore (a Polynesian rat).

The grant provides part-time funding for 3 years.

ARGOS: KEY INFORMATION

Total contract value to Otago University:

\$5.1 million (excl GST)

Term: 1 July 2003 - 30 Sept 2012

Funder: Foundation for Research, Science and Technology (FRST) now known as the Ministry for Business, Innovation & Employment (MBIE)

“ Interdisciplinary research on sustainability challenges in food, agriculture, energy and environment & people ”

ARGOS – a long-term look at sustainable farming

Findings from the transdisciplinary ARGOS project suggest one size does not fit all when it comes to sustainable agriculture.

The Agriculture Research Group on Sustainability (ARGOS) project was a long-term study (2003-2012) of more than 100 farms, looking at social, economic and environmental changes.

Led by The AgriBusiness Group, the project involved a number of researchers from the Centre for Sustainability (including Henrik Moller, Hugh Campbell, Chris Rosin and PhD students) plus others from Lincoln University.

Initially, the research focused on looking for differences that might be due to the types of farming systems used: organic, best practice audited, or conventional farming (ARGOS 1).

The ARGOS team compared environmental impacts, biodiversity, soil, and water from 36 kiwifruit orchards, 34 sheep/beef farms, 24 dairy farms plus a sample of case study High Country properties and Māori land holdings.

One particularly interesting finding was that organic farming generally supported better quality soils and more diverse and plentiful native bird populations. But regardless of the farm type, the farmers studied for Sarah Meadows' PhD research regarded the presence of birds as evidence of a healthy, robust farm environment and as indicators of biodiversity-friendly farm practices for consumers in export markets.

“During ARGOS 1, the underlying objective was to make a statement about the potential for best practice audits to enable/encourage sustainability practices on farms in New Zealand by comparing different types,” says Dr Chris Rosin.

By 2009, it was evident that farming systems only explained relatively small (albeit often important) differences in the data, and the emphasis shifted to a more detailed examination of the context within which farming practice had changed (ARGOS 2).

ARGOS 2 had four main aims: analysis of shocks and farmer responses, analysis of complementary pathways to sustainability, comparative international impact analysis, and increased adoption of outputs from ARGOS 1.

“Once we had determined that auditing did raise awareness of environmental and social objective, we also wanted to know how shocks such as falling market prices, drought or the loss of a family member impacted on management decisions.”

The findings from ARGOS 2 suggest that it is often more important to support diverse efforts to respond to changing environmental, social and financial conditions than it is to promote a single 'optimal' response.

“While not completely unexpected, the role of other issues occurring simultaneously with the shocks emerged as an important – and difficult to mitigate – factor in the resilience of participants.”

The ARGOS team are now involved with the New Zealand Sustainability Dashboard Project (2013-2018), which will enable farmers to track their sustainability progress through a user-friendly 'dashboard'.

* For more information about ARGOS projects, go to www.otago.ac.nz/csafe/research



Director's Notes



Sustainability is tricky. Whatever the issue, becoming more sustainable is likely to involve a mix of people's behaviour, technologies, economic systems, ecologies, politics, regulations, global trends, and much else besides. Trying to understand a sustainability problem by just looking at one aspect (such as economics) is a bit like trying to make a cake with only flour.

So, one of the distinctive things about the Centre for Sustainability is that we specialise in bringing together researchers from different disciplines to work together. Disciplines of our current staff include ecology, sociology, veterinary parasitology, environmental sociology, psychology, marine science and human geography. For most of our research projects, we develop teams that involve some of our staff plus others from Otago University and other research institutions, to bring in an even wider range of skills and knowledge.

For example, the Energy Cultures research programme has fourteen researchers. Disciplines of those from outside the Centre include engineering, economics, consumer psychology, management, statistics, macromarketing and law.

Interdisciplinary research draws from the knowledge and methods of specific disciplines, and adds value to this through collaboration. Research partnerships may also include policy makers, practitioners, and holders of local and indigenous knowledge.

Working across disciplines isn't necessarily straightforward. People will have different ways of understanding the world, different sorts of knowledge, and different research methods. They can also use different "languages". For example, sometimes the same word can be taken to mean different things. And sometimes this leads to arguments!

But, if people respect each other and value the insights that other disciplines can bring, then interdisciplinary research can be exciting and rewarding. By coming together, the different disciplines bring all the ingredients to make a pretty good cake.

We believe it is just what is needed to help create a sustainable world

Nāhaku noa, nā

Janet
Dr Janet Stephenson

Featured News

Māori and Mining resource for communities

Centre Director Janet Stephenson and Centre Kaiārahi Lyn Carter are two of the authors behind *Māori and Mining*, a publication aiming to highlight the issues and challenges of mining and its impact on Māori communities.

"This publication is important for communities who are being faced with requests to explore for and extract mineral resources. There are no other resources like it out there and we hope it will help to simplify a complicated topic," says Janet.

The book was written by researchers from the Divisions of Research and Enterprise, Science, Humanities and Commerce, and gives an overview of historical, physical, cultural, legal, economic and environmental aspects of mining in New Zealand, from a specifically Māori viewpoint.

A free electronic version of *Māori and Mining* is available to download at <http://otago.ourarchive.ac.nz/handle/10523/4362>

Farmer days for farmers

The Centre co-sponsored two well-received farmer-to-farmer days this year, which were designed to provide farmers with unbiased information about alternatives to high-input farming.

The Centre's Dr Marion Johnson organised the Papakaio and Gore events with horticulturalist Jim O'Gorman and soils expert Christine Galbraith respectively.

As part of the information days, a range of farmers who had successfully transitioned spoke about their experiences and discussed their farming methods with the audience.

Marion has been asked to organise more events and has since taken part in a workshop promoting the International Year of Family Farming (2014).

"The Centre is now very much in local farmers' minds as a place where different ideas about agriculture are discussed," Marion says.

Shifting paradigms

It's time to change the way New Zealanders do conservation, says Professor Henrik Moller.

Moller is a member of the Tahi Group of Concerned Scientists, which also includes Prof John Craig (previously a conservation biologist at University of Auckland), Prof David Norton (a forest and High Country ecologist from University of Canterbury), Dr Denis Saunders (from CSIRO's Ecosystems Sciences team in Australia) and Dr Morgan Williams (ecologist and previous Parliamentary Commissioner for Environment).

The group points to ongoing declines in biodiversity and insufficient spending for ecological restoration as signs that New Zealand's preservationist paradigm of conservation is failing.

The paradigm shift must start with respect for each other: our different values, knowledge and visions for what it is to be a New Zealander and how we can all pull together to enrich our heritage, says Henrik

"It's about a fairer sharing of costs and benefits of conservation amongst all New Zealanders."

For more information on the Tahi Group, go to www.otago.ac.nz/csafe/news

Making an impact

After three years at the Centre, prospective PhD graduand Sophal Chhun is leaving student life behind and is returning to Cambodia, where he will head the Office of Project Monitoring in the Department of Environmental Impact Assessment at the Ministry of Environment.

“The first step will be to develop a monitoring framework to guide reduction of environmental impacts of development and its sustainability. I will make the work relevant to what I’ve done here. Some of the focus will be on economic valuation of environmental impacts”, Sophal says.

Sophal’s PhD investigates opportunities for improving social and economic value associated with the spatial allocation of near-shore marine ecosystems between commercial and recreational fishing, cultural, and biodiversity interests.

It also involves analysis of the trade-offs that could potentially occur between proposed management alternatives for restoring declining near-shore marine fisheries and ecosystems.

“This research was primarily inspired by a widespread recognition that the lack of information about particular values (especially related to biodiversity and intangible ecosystem services) is perversely treated as “no value” or given less weight relative to tangible values (of market goods) in most decision-making when trade-offs between these values are made.”

Through his national survey, Sophal found that NZ householders are, on average, willing to pay an extra \$224 in tax per year to restore biodiversity from poor to good condition. When generalised to the whole population, this equates to around \$370 million extra per year for biodiversity along the coast.

“I really think proper accounting for natural capital would lead to choosing a more sustainable option. This is good for everyone, especially future generations.”

Before coming to the Centre, Sophal earned a Bachelors Degree in Forestry Science from the Royal University of Agriculture in Phnom Penh and a Graduate Diploma and a Masters Degree in Environmental Management and Development from the Australian National University (ANU) in Canberra.

He chose to come to Otago because of the university’s reputation, the availability of an interdisciplinary team at the Centre, and because of the “highly qualified and inspiring supervisors”.

“I, probably more than most, would have never completed my thesis without supervision from my main supervisor Professor Henrik Moller and co-supervisors Dr Paul Thorsnes and Dr Viktoria Kahui,” he said.

In a show of support, Sophal’s supervisors and fellow researchers from the Centre and the Economics Department escorted him when he handed in his thesis. “It was just the submission but I felt like I graduated.”

Sophal is now settling into his new life back home. “I am very happy to see family and friends again and to have familiar food and all the memories and culture I’ve been used to since I was born. It’s completely different to the lifestyle in Dunedin.

“My living here in Cambodia itself is now also different to before I started my PhD. It’s a bit more busy for me as now I have two kids. I have less time, but I have more work.”

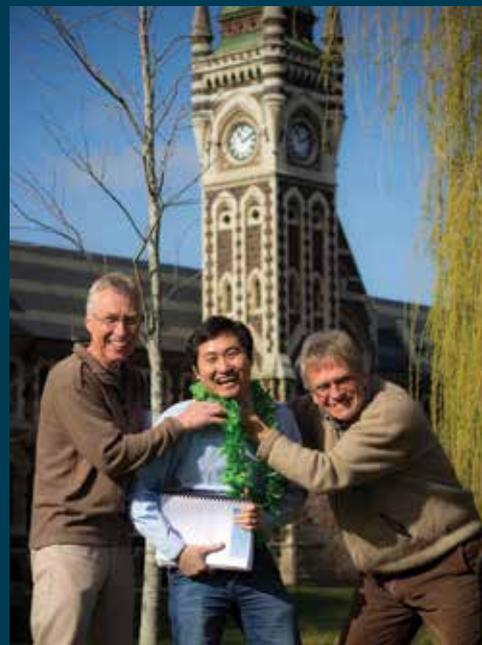


Photo: Aaire, McCarthy

Sophal Chhun’s supervisors Dr Paul Thorsnes (left) and Professor Henrik Moller were there to support him when he handed in his thesis.

Publications

Chhun, S., Thorsnes, P., & Moller, H. (2013). Preferences for Management of Near-Shore Marine Ecosystems: A Choice Experiment in New Zealand. *Resources*, 2(3), 406-438.

Fletcher, D., **Moller, H.**, Clucas, R., Bragg, C., Scott, D., Scofield, P., Newman, J., McKechnie, S., Lyver, P. (2013). Age at first return to the breeding colony and juvenile survival of Sooty Shearwaters. *Condor*, 115(3), 465-476. doi: 10.1525/cond.2013.110151

Karlin, B., & **Ford, R.** (2013). The Usability Perception Scale (UPscale): A measure for evaluating feedback displays. In A. Marcus (Ed.), *Design, user experience, and usability: Design philosophy, methods, and tools: Lecture notes in computer science (Vol. 8012)*. Berlin, Germany: Springer. doi: 10.1007/978-3-642-39229-0

Karlin, B., **Ford, R.**, & Squiers, C. (2013). Energy feedback technology: A review and taxonomy of products and

platforms. *Energy Efficiency*. Advance online publication. doi: 10.1007/s12053-013-9227-5

McKay, D. (2013). Education for survival, resilience and continuance: Mātauranga Taiao, Māori and indigeniety. *EINGANA – Journal of the Victorian Association for Environmental Education* 36(1), 6-9.

Ruckstuhl, K., **Carter, L.**, Easterbrook, L., Gorman, A. R., Rae, H., Ruru, J., Ruwhiu, D., **Stephenson, J.**, Suszko, A., Thompson-Fawcett, M., Turner, R. (2013). *Māori and mining*. Dunedin, New Zealand: University of Otago.

Turner, N. J., Berkes, F., **Stephenson, J.**, & Dick, J. (2013). Blundering intruders: Extraneous impacts on two indigenous food systems. *Human Ecology*. Advance online publication. doi: 10.1007/s10745-013-9591-y

*For a complete list of publications, go to www.otago.ac.nz/csafepublications

MOVING WITH THE TIMES

Is moving home a good time to become more energy efficient? Daniel Gnoth’s PhD research looks at this question. New Zealanders move home around seven times in their lifetime. That’s a lot of packing and unpacking! Moving home could be one of the better times to change our consumption practices, because people have the chance to form new habits in a new environment.

New Staff



Dr Lyn Carter (Ngāi Tahu, Ngāti Mamoe, Waitaha Iwi) has joined the Centre as Kaiārahi. She is working to implement the university's Māori Strategic Framework at the Centre as well as working with staff to build their capacity and capability in Tikanga Māori (Māori practices) and Mātauranga Māori (Māori knowledge frameworks).



Dr Adam Doering is an Assistant Research Fellow for the Energy Cultures research programme project. He is currently involved with two work streams: (1) the Energy Transitions in Transport project involving a stocktake of transport innovations currently underway in New Zealand, and (2) the International Delphi Study exploring global trends in transport with 30 international experts.



Dr Debbie Hopkins is a Postdoctoral Research Fellow with the Energy Cultures Programme, specifically focusing on transport energy cultures. Her research explores the implications of changing youth mobility practices, as well as contributing to a Delphi Technique study of future transport conducted with a panel of international and New Zealand based experts.



Jane Khan is the new project administrator for the GREEN Grid project and Energy Cultures research programme. She hails from Bolton in the UK, has a BSc (Hons) in Management Science from UMIST, a CIM Marketing Diploma and has 15 years' experience in European business to business marketing and project work in both multinationals and SME's.



Dr Michelle Scott, from Perth, Scotland is a post-doc working on the Energy Cultures research programme and GREEN Grid projects. Her research includes comparing energy interventions designed to help people have greater energy efficiency and comfort in their homes, and interviewing early adopters of technologies such as electric cars, photovoltaics and home energy management systems.

Upcoming Events

Speakers confirmed for our fortnightly seminars in 2014 are:

THURSDAY, FEBRUARY 13

Rob Burton, Geographer, *Centre for Rural Research (CCR) Norway – Agriculture*

THURSDAY, FEBRUARY 27

Henrik Moller, Ecologist, *Centre for Sustainability – Ecology*

THURSDAY, MARCH 13

Skip Laitner, Energy and Resource Economist, *US – Energy*

THURSDAY, MARCH 27

Gesche Huebner, Psychologist, *University College London – Energy*

www.otago.ac.nz/csafe/seminars
for more information

New Students

PhD candidate **Salma Bakr**, from Alexandria, Egypt, holds an MSc. in Renewable Energy and Energy Efficiency from Kassel University, Germany, and an MSc. in Micro and Nano Electronics from Joseph Fourier University, France. Her research integrates information and communications technology and electric power systems with the aim of tackling the drawbacks of current demand-side energy management schemes.

Karyn Stein has a Master's Degree in Rural Development Management from Khon Kaen University in the northeast of Thailand. She plans to conduct research with local Māori communities/groups, using food sovereignty as the theoretical framework for the study, taking a multi-level perspective (connecting local action with international Indigenous issues) while promoting women's empowerment and involvement.

Colombian Master's research student **Diana Ocampo** is aligned with the GREEN Grid project. She will be involved with researching NZ household patterns in energy consumption, focussing on the methodological theory of getting reliable data through time-use research in addition to a pilot project. Diana's past studies include statistics, information management, ecology and public health.



Visitors

Frances Fahy is the recipient of the 2013-14 Fulbright Scholar Award and is a lecturer in Environmental Geography at the National University of Ireland, Galway. While visiting the Centre, she worked with the Energy Cultures team, sharing findings from the CONSENSUS project, which explores attitudes and behaviours towards household consumption in the key areas of energy, food, water and transport. Frances will be travelling to the US in 2014 as part of her scholarship, to conduct research for her most recent project: *Communicating Sustainability Research – Challenges, Opportunities and Dissemination Strategies*.

Geoff King is a visiting researcher on secondment from sustainability research consultancy Brook Lyndhurst in London. At the Centre, he has conducted interviews with members of the Blueskin Bay community for the GREEN Grid project about early adoption of solar panels, and will present his findings in a short research report.

PhD student **Laura Milani** is visiting us from IULM University in Milan. While here she will be completing her PhD, which focusses on food consumption within the conceptual framework of Food Sovereignty. As part of this, she is investigating tools that can increase the capacity of local food producers and consumers to create a strong mutual support towards local community development and empowerment. She will be with us till February, 2014.

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