



# Rakahau-ā- mahi hou:

New Applied Research

**Special Issue:**  
Researching Sustainability

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# Introduction

Robin Day

At Otago Polytechnic we have adopted a commitment to 'doing the right thing' as one of our key organisational values.



"... every graduate has been encouraged to think and act as a sustainable practitioner."

This has come from a growing understanding that what we teach, how we behave as an organisation and how we extend our influence into the community has an impact socially, environmentally and economically.

An important part of this commitment has been the development of a vision for the Polytechnic in which every graduate has been encouraged to think and act as a sustainable practitioner. The three key areas of strategy and action have been to educate sustainable practitioners, develop a sustainable campus and create a Centre for Sustainable Practice. At the centre of this strategy is a commitment to researching sustainable practice at a number of levels.

In this issue of Rakahau-ā-mahi hou, Associate Professor Samuel Mann, one of the original facilitators of Otago Polytechnic's commitment to sustainability, updates us on his recent work on 'educating the sustainable practitioner'. Tim Armstrong, Steve Henry and Ella Lawton discuss their research into environmental issues such as sustainable transport and the measurement of environmental footprinting.

We also profile researchers who have taken different perspectives on our theme. Discussion of Māori perspectives of sustainability in research often revolves around the conflict between the Māori worldview of interconnectedness from an empirical science perspective, however, Dr Khyla Russell, Kristi Carpenter and Justine Camp consider how Māori research can be sustained within a bicultural context in which Māori researchers must juggle a raft of competing responsibilities. Similarly, Dr Susan Ballard and Pam McKinlay explain their work into the sustainability of arts practice in a digital world.

For more information on Otago Polytechnic's work in sustainability including our new Bachelor of Applied Management (Sustainable Practice) and research at Otago Polytechnic please see our website: [www.otagopolytechnic.ac.nz](http://www.otagopolytechnic.ac.nz).



Dr Robin Day – Director of Research

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# Sustaining Māori research

Khyla Russell, Kristi Carpenter and Justine Camp

Over the past decade, increasing steps have been made to ensure Māori perspectives are brought to bear on research throughout Aotearoa.

Māori input is sought as part of the ethics approval process. Māori research forums – including journals, hui and networks – are fostered throughout the country. At Otago Polytechnic, a Memorandum of Understanding with local rūnaka affirms the importance of decisions being made in partnership with Kai Tahu and other Māori communities residing in the Otago region.

The initiatives are aimed at promoting cultural sustainability, ensuring that indigenous perspectives are incorporated in how we think and develop as a nation.

For the small group of Māori researchers at Otago Polytechnic, these efforts bring both opportunities, and an enormous sense of responsibility. Now, says Kaitohutohu Dr Khyla Russell, part of whose role involves leading a Māori research programme at Otago Polytechnic, "It's time for us, as Māori researchers and as an organisation, to consider what is a sustainable level of engagement."

Challenges include balancing the need to provide Māori input when required as part of others' research, with developing the organisation's own authentically Māori research ambitions that will enable emerging Māori academics to develop their own research profiles.

A group of Māori academics represented Otago Polytechnic at the recent International Network of Indigenous Health Knowledge and Development (INIHKD) conference in Seattle, and participated in presentations and networking opportunities in Vancouver

prior to the conference. At INIHKD, Kristi Carpenter and James Sunderland from the School of Occupational Therapy presented their research into the cultural assumptions of occupational therapy, while Justine Camp reported her master's thesis findings around the impact of type 2 diabetes upon whānau Māori and the need for Māori-led diabetes intervention, now the topic of her PhD.

"It's time for us, as Māori researchers and as an organisation, to consider what is a sustainable level of engagement."

Russell's own work has recently included exploring Māori conceptions of Māori wellness and the importance of identity within that model. She also contributed to Health Research Council's *Te Ara Tika, Guidelines for Māori Research Ethics*, aimed at researchers and ethics committee members.

A forthcoming issue of *Scope* will focus on showcasing kaupapa-themed research.

Additionally, Māori academics frequently fulfil roles as cultural ambassadors and advisors, attending a wide range of community events and powhiri. Fulfilling the many roles, says Carpenter, is an honour and a duty. It reflects positive intentions by the organisation and respects the MOU. But it can also be overwhelming.

"I don't want to let the Polytechnic, or the rūnaka, or Khyla down. It's not at all that the Māori community places pressure on us, everyone is incredibly supportive. But it can be a challenge to prioritise. When you are asked to contribute, and to show support and leadership, it's very hard to say 'no'.

"We're a small collective and we need to tautoko one another and work out how we can make sure the contributions we make are sustainable. It's a good debate to be having."



Justine Camp, Kristi Carpenter and Khyla Russell



# Overcoming barriers to sustainability

Samuel Mann

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There's an old saying that 'it ain't easy being green' and when it comes to sustainability and education, Dr Samuel Mann can recite a litany of reasons why it's supposedly true.

After two years of interviewing academics and studying the barriers they face integrating sustainability into education and professional practice, Dr Mann, Associate Professor of Information Technology at Otago Polytechnic, has heard every excuse in the book.

"This should be a separate, specialist field of study"... "Unless we transform entirely it's not worth the effort"... "We should wait until the science is sorted"... Mann says that the plethora of issues raised by his interviewees need to be addressed individually and in detail. He is releasing a book this year, targeted at educators, that proposes a range of creative and conceptual solutions to each of these problems.

"A major part of overcoming these barriers is about acknowledging them, discussing them and even utilising the strength of the reasoning behind them," Mann says.

"For instance, one of the issues I've come across is the idea that discussions about sustainability are negative and without vision. This leads to the idea that perhaps we need to stop hammering people over the head with pictures of polar bears on melting ice

cubes and so forth and start thinking in terms of what we can do to get students thinking positively about their vision of the next 50 years and what their discipline can do to contribute towards that vision."

Mann believes that the concept of the "sustainable practitioner" underlying Otago Polytechnic's sustainability strategy is one that could play an important part in helping other educators to incorporate sustainability into their teaching. His book describes the journey taken by the institution to try and realise this concept in the many disciplines it teaches.

"Give me a lever long enough and I can move the world", Mann says, quoting the Greek mathematician Archimedes. "Educators have a very large lever, because we've got the discipline we are working in plus the fact that we're teaching a classroom full of students every year, so what we do has a major multiplier effect. That is why it is absolutely worth working with educators to help them to get past these barriers."

"A major part of overcoming these barriers is about acknowledging them, discussing them and even utilising the strength of the reasoning behind them."

# Projects provide fuel for sustainable practice

Ella Lawton, Sharon Schindler and Steve Henry



Ella Lawton and Steve Henry

**If every person on the globe had the same ecological footprint as the average New Zealander, four earth-sized planets would be required to meet their needs.**

This disconcerting statistic is provided by Ella Lawton, a Sustainable Practice Advisor at Otago Polytechnic's Centre for Sustainable Practice.

Lawton is optimistic about the possibility of reversing this trend. However, she believes that positive community responses to two major long-term projects, recently launched by the Centre, demonstrate the willingness of many New Zealand companies and of the community at large to shift towards more sustainable ways of doing business.

**"There's such a tight squeeze on resources that we really have to try and find alternatives to what we are currently using."**

The launch of the Ecological Footprinting Project and the introduction of biofuels to Queenstown and Otago are the crowning achievements in what has proven to be a landmark year for the Centre. The Centre was established in 2006 with the aim of becoming a collaborative hub for enabling and implementing sustainable practice in Otago, New Zealand and internationally.

Lawton is the Central Otago Project Manager for the Ecological Footprint Project, a massive, in-depth study funded by the Foundation for Research, Science and Technology and developed in collaboration with Victoria University and the Manakau City Council. Its goal is to measure the ecological footprints of four New Zealand communities and to work with these communities and their local governments to develop policies aimed at reducing these environmental impacts.

"This project is the first of its kind in New Zealand," Lawton says. "It is very exciting for the Centre. We hope that the learning that comes from this research will feed back into developing tools that all communities and councils can use when they're looking at ways to reduce their own environmental footprints."

The project will be conducted in collaboration with two Central Otago communities and two from the Auckland district. This will enable researchers to discover, among other things, whether dense settlements (where people can live closer to work) have lower or higher ecological footprints when compared with rural communities who are likely to have more opportunities to be energy and food self-sufficient.

The role of the Centre for Sustainable Practice in this research will involve liaising with the Cromwell community, which has committed to the project, and another Central Otago community, which is soon to be finalised. Lawton is excited about having the opportunity to further develop the Centre's relationship with individuals and businesses in the region.

"The biggest benefit for us will be that we have engaged closely with members of the community in Central Otago," she says. "We have worked a lot with local businesses, particularly in the tourism sector, and this is an opportunity for us to broaden our audience in a major way."

While the Ecological Footprint Project looks at the broader picture of resource consumption in New Zealand, another groundbreaking Centre for Sustainable Practice project is already achieving success in reducing Queenstown's carbon footprint on a day-to-day basis.

The Centre for Sustainable Practice received funding from the Energy Efficiency and Conservation Authority (EECA) to form a consortium of Queenstown biodiesel users last year. Having met significant support for the ideas from local businesses, Steve Henry, Head of the Centre, led a team who established a biodiesel pump in Queenstown, now fuelling 50-plus vehicles in the region.

Project Manager Sharon Schindler says the project has been a resounding success so far, citing positive responses by users to a recent survey and increasing interest by other businesses. "We have these early adopters setting the scene, and with 50 vehicles running without any problems whatsoever, awareness will hopefully continue to grow."

Biofuel users are not the only Queenstown businesses contributing to the project. Local cafes and restaurants are donating their recycled cooking oil to the consortium, meaning that biofuel users may be running their vehicles on the very oil that cooked the chips they ate for lunch.

"It is hugely important to give communities the option to use more renewable fuel sources," Schindler says. "There's such a tight squeeze on resources that we really have to try and find alternatives to what we are currently using."

Finding effective, efficient alternatives to unsustainable practices has been a philosophy underlying all of the projects carried out by the Centre for Sustainable Practice this year. And with the recent announcement of a Dunedin consortium of businesses keen to introduce biodiesel, it seems likely that 2011 will be another excellent year for the Centre.



Tim Armstrong

# Four wheels good, two wheels better

Tim Armstrong and Mike Wilson

**It can help you to keep fit, lose weight, save your pennies in a recessionary economy, wipe your carbon emissions off your conscience and get an edge over rush hour traffic on your way to work.**

It certainly sounds good in practice... So where are all the cyclists?

This is the question Otago Polytechnic Product Design lecturers Tim Armstrong and Mike Wilson have been asking. In collaboration with Dr Paul Smith from Massey University, the pair was awarded a \$120,000 grant from the New Zealand Transport Authority to investigate ways in which the government, local councils and other stakeholders can encourage practical cycling in New Zealand towns and cities.

"Cycling is a minority activity in New Zealand," Armstrong says. "On the one hand less than three per cent of trips are being made by bike. On the other hand, more than two thirds of car journeys are less than six kilometres, perfectly within the range of what can be comfortably achieved on a bike."

These short journeys were the focus of the group's research, which included an extensive literature review, a series of surveys and workshops aimed at gauging participants' perceptions of cycling and cyclists in New Zealand, and interviews with councils and advocacy groups here and in Australia.

They found that practical cycling remains in the shadows for a number of reasons. These included the perception amongst survey participants that it was a dangerous or lower socio-economic class activity, a cycling products and services market biased towards recreational cyclists, and a lack of appropriate infrastructure.

The outcome of the research was the development of a 'practical cycling system design model', which identifies a range of recommendations for how to best understand and encourage practical cycling, and to ensure it is positioned as an aspirational activity.

Armstrong believes the research team's expertise in product design gave it a unique perspective on the issue at hand. "A lot of people think that product designers work solely with solid objects," Armstrong says. "In reality, we're working equally as much with systems."

"Solid objects" remain important, however. Armstrong was also a member of the Freeload commercial design team that won a silver award at New Zealand's Best Design Awards for its innovative Freeload Bicycle Rack, illustrating his conviction that designers have a major role to play in the transition to a more cycle-friendly future.

"A lot of people think that product designers work solely with solid objects. In reality, we're working equally as much with systems."

# Copy, paste and hope

Su Ballard and Pam McKinlay

If you're a painter, you use paint. If you're a digital artist, you use digital resources... if you dare.



Pam McKinlay and Su Ballard

Anytime anything is placed on the internet, legally speaking, it has been "published". As such, it is bound by copyright, and may be the property of the person who has posted it, the site it appears on, or the server that hosts it.

This creates a potential legal minefield, not only for art students, but the institutions that are ultimately liable for the work they produce. So for electronic arts lecturer Su Ballard and teaching and research assistant, Pam McKinlay, what began as a response to students' questions, "Can we use this?" has grown into a far-reaching exploration of copyright issues for digital artists.

The pair has now produced *Art at Risk, Uses of the Image in the Digital Age*, an online hub that draws together research and information around copyright, fair dealings and art in a digital age.

The hub incorporates practical information, including flow diagrams "as guidelines for students to use to help make decisions about how to use material they have found online", as well as a space for wider questions to be asked. They also link to alternative resources being developed in response to this world of copyright, such as wikimedia commons and flossmanuals.

For Ballard and McKinlay, investigating copyright and the internet strikes to the heart of artists' abilities to express themselves freely and fulfil their roles as creative social commentators.

"We need to ask what kind of barriers and incentives this creates for our cultural sustainability."

There's no objet trouvé tradition in the digital world: "everything, essentially, is owned," comments Ballard. "We need to ask what kind of barriers and incentives this creates for our cultural sustainability." Some answers are developing in the open source and free media communities.

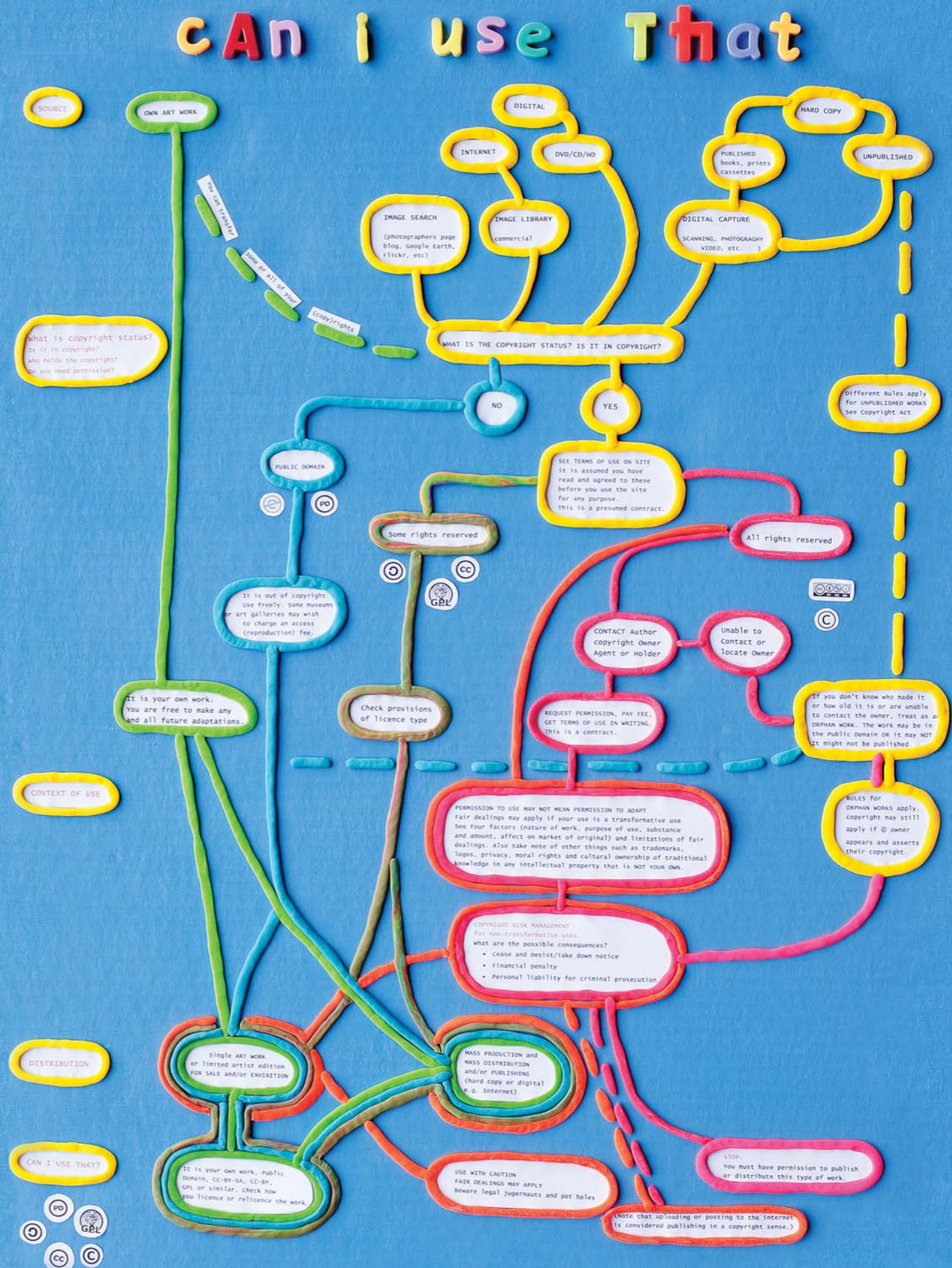
"To find out whether you can use an image from Google Maps, you need to go through 47 pages of terms and conditions."

Even when digital material may be used, compliance issues can just seem too high. "To find out whether you can use an image from Google Maps," says McKinlay, "you need to go through 47 pages of terms and conditions."

It's a situation so ludicrous, they believe, that it's worth making art about. "We had a student who made a short film involving 3,000 images downloaded from the internet, knowing it would be impossible to figure out all the liabilities involved," Ballard comments.

That's the kind of creativity that can be indulged in the safe "bubble" of the Dunedin School of Art, McKinlay adds. "Students are protected by the educational context as long as they are not publishing. But what's publishing? Exhibiting in the Art School Gallery? On a blog? Facebook?"

<http://www.otagopolytechnic.ac.nz/schools-departments/art/research-search/academic-projects/art-at-risk.html>





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