

# LAKE ECOSYSTEM RESTORATION NEW ZEALAND

MAY / 2008

ISSUE 8

## LERNZ at the “Science to Market” conference, Beijing, China.



NZ Minister of Research, Science and Technology Pete Hodgson (centre) attends a press conference in Beijing (China Daily)

The LERNZ water quality monitoring buoys project was recently chosen by the Ministry of Research Science and Technology to represent New Zealand research at the “Science to Market” conference in Beijing, China on 17 April. This conference was aimed at strengthening scientific collaboration between New Zealand and China, as well

as facilitating the transfer of emerging technologies between the Chinese and New Zealand markets following the free trade agreement between the two countries.

The Hon. Pete Hodgson, who attended the conference, also visited the LERNZ group on 7 April.

Chris McBride of LERNZ gave a presentation to the

200-strong delegation of New Zealand and Chinese politicians and scientists, detailing Waikato University's collaborative water quality monitoring project with the Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences (NIGLAS). In October 2007, Chris and Prof. David Hamilton travelled to Lake Taihu (Jiangsu Province, China) to install an automated water quality monitoring station. The installation was a success, and data from the station is now being used for research by NIGLAS, who aim to eventually install several monitoring sites and develop a 3D model to predict algal blooms in Lake Taihu. Following the conference an article was published in the China Daily newspaper detailing the Taihu project. (above)

**SYMPOSIUM 2008**

**NUTRIENT SENSITIVE ZONES**

**Nitrogen and Phosphorus,  
Lakes and Waterways**

**AUGUST 12<sup>th</sup> -13<sup>th</sup>  
HERITAGE HOTEL  
ROTORUA**

**Online registration:**  
[www.lakeswaterquality.co.nz](http://www.lakeswaterquality.co.nz)

## LERNZ Information Day



A day of presentations and discussion on the FRST-funded Freshwater Restoration program was held on 18 April 2008. The Lake Ecosystem Restoration program has been running for a little over two years. The information day detailed progress from the Harmful Algal Blooms and Pest Fish research teams.

Academic staff and students from the University of Waikato and collaborators from other research institutes gave presentations on their current work and outcomes.

About one hundred people attended the information day, which included guests from Environment Bay of Plenty, Environment Waikato, Hamilton City Council and several other management and consulting agencies.

### Presentations:

#### Intermediate Outcome 1

Prof Craig Cary: Cyanobacteria genetics and toxin production  
Dr Andreas Rueckert: Cyanobacteria genetics and toxin production  
Bram Mulling (MSc Student): Cyanobacteria – confocal microscopy  
Richard O'Rorke (MSc student): Cyanobacteria – viruses  
Jonathan Puddick (PhD student): Cyanobacteria – MALDI-TOF quantification of cyanotoxins  
Paul White (IGCI): Groundwater modelling  
Dr Wei Ye (IGCI): CLIMPACTS – Climate change modelling  
Prof David Hamilton (for C McBride): Lake buoy data  
Dennis Trolle (PhD student): Lake restoration and sediments  
Lisa Pearson (PhD student): Lake sediments  
Dr Michael Landman (SCION): Chemical flocculent applications  
Deniz Özkundakci: Restoration of Lake Okaro  
Dr Susie Wood/M Prentice): Karori Reservoir dynamics  
Joseph Butterworth: (MSc student): Kakahi in Lake Rotokakahi

#### Intermediate Outcome 2

Adam Daniel: (PhD student): Adult koi carp dispersal  
Jennifer Blair: (MSc student): Juvenile koi carp dispersal  
Dr Nick Ling: Pheromones and chemical control  
Dr Ian Hogg/Matt Knox (PhD student): Zooplankton as monitors of change – genetic detection  
Jonathon Banks: Fish biosurveillance by genetic methods  
Assoc Prof Brendan Hicks: Karori reservoir perch removal  
Dr Ian Duggan: Zooplankton responses to pest fish  
Dr Wei Ye (IGCI): Modelling habitats at risk from carp invasion  
Matt Allan (MSc student): Remote sensing of open water  
Salman Ashraf: Remote sensing of littoral habitats



**Kylie McKee** started with the LERNZ team in mid-February as Research Administration Manager.

She brings to the programme several years of contract management experience, from both funding and provider perspectives, for both government and non-governmental organisations. A key motivator for Kylie is having the opportunity to make a difference – something she identifies within the Freshwater Restoration programme. “This role is exciting and challenging, and I am looking forward to being a part of something so worthwhile, and so important to our country” she says. Kylie also extended thanks to Gary Whitehouse, whom she is replacing, for his dedication to the programme and the assistance he offered her in the first few weeks. Kylie can be contacted on 07-8384287 or by email: [kmckee@waikato.ac.nz](mailto:kmckee@waikato.ac.nz).

#### Visit by Dr David Burger

David Burger took a brief respite from the demands of his role as Research/Advisor in Aquatic Ecology with the Delft Hydraulics group of Deltawares in the Netherlands, to visit LERNZ during February. Several of David’s Lake Rotorua PhD papers are now published, including:



Burger, D.F., Hamilton, D.P., Gibbs, M.M., and Pilditch, C.A., 2007: Sediment nutrient release in a polymictic, eutrophic Lake Rotorua. *Hydrobiologia* 584: 13-25.

Burger, D.F., Hamilton, D.P., Hall, J.A. and Ryan, E.F., 2007: Phytoplankton nutrient limitation in a polymictic eutrophic lake: community versus species-specific responses. *Archiv für Hydrobiologie* 169(1): 57-68.

Burger, D.F., Hamilton, D.P., Gibbs, M.M., and Pilditch, C.A.: Modelling the relative importance of internal and external nutrient loads on water column nutrient concentrations and phytoplankton biomass in a shallow polymictic lake. *Ecological Modelling* 211: 411-423.

David can be contacted at [david.burger@deltawares.nl](mailto:david.burger@deltawares.nl)



THE UNIVERSITY OF  
**WAIKATO**  
*To Whāiri Wānanga o Waikato*



Centre for Biodiversity and Ecology Research



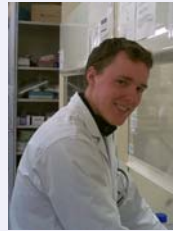
Lake Ecosystem Restoration  
New Zealand

For more information visit

[www.LERNZ.co.nz](http://www.LERNZ.co.nz)

Centre for Biodiversity and Ecology  
Research  
Department of Biological  
Sciences  
School of Science and Engineering  
The University of Waikato  
Private Bag 3105  
Hamilton 3240  
New Zealand

Two international intern students, **Tjorben Posch and Nicolas Gillon** have recently joined the Waikato Biology Department.



Tjorben Posch, a water science student at the University of Duisburg-Essen (Germany), is here to write a thesis for his Bachelor degree under the supervision of Prof. David Hamilton. His topic is the analysis of nutrients in sediment pore water from the Rotorua lakes. The project is focused on iron and phosphorus speciation.



Nicolas Gillon is a Masters student in Management and Assessment of Water Resources from the University of Montpellier (France). Also under the supervision of Prof. Hamilton, he will be working together with Paul White (GNS) on the estimation of the future nutrient flow coming from groundwater to the Okataina Caldera lakes complex, in particular Lake Tarawera.

#### Recent events:

- 18-22 February 2008: Karori fish removal (David Hamilton, , Brendan Hicks, Nick Ling, Dudley Bell, Jennifer Blair, Jereon Brijis, and Warwick Powrie)
- 17-22 February 2008: “The 11<sup>th</sup> International Symposium on the Interactions Between Sediments and Water” Esperance, Australia (Oral presentations by Dennis Trolle and Deniz Özkundakci)
- 10 April 2008: Waikato River Health Study (David Hamilton, Dudley Bell, Liancong Luo, and Austin Zhang)
- 17th April 2008: New Zealand and China Science to Market’ conference, Beijing (Chris McBride, Liancong Luo)
- 18 April 2008: LERNZ information Day (Academic staff and student presentations)

#### Publications:

Forsmann, D.M., and Nielsen, A., (2008), Evaluation of Phoslock™ applications to mesotrophic Lake Okareka

McBride, C., Hamilton, D., Gibbs, M., White, P., and Stewart, L., 2008. Biofish survey of Lake Taupo, CBER report 68

Paul, W., and Hamilton, D., 2008. Low-dose alum application trialled as a management tool for internal nutrient loads in Lake Okaro, New Zealand, *New Zealand Journal of Marine and Fresh Water Restoration* (in press)

Landman, M., Ling, N. (2008) Lake Okaro and Rere-whakaaitu Fish Health Monitoring: Okaro Z2G1 trial. Scion Contract Report. 50 pp