

Understanding which farm systems have the lowest impact and highest profit

Tomorrows Farms Today is a project that has recently commenced in the Central Plateau portion of the Waikato River Catchment, which seeks to better understand what some farmers are doing, to minimise their environmental footprint, while still retaining a good level of profitability.

The farmer group consists of 25 farms, from Reporoa, Atiamuri, Bennydale and Broadlands. The farmers involved are from Mangakino, south to Orakei Korako and involves land that feeds a part of the river that is classed as a “high priority water body” for the Waikato Catchment.

In time, farmers in this region may face increased pressure to reduce their diffuse nutrient, pathogen and sediment losses to the wider environment.

It appears some farms are already low-leaching, and doing a good job of being nutrient efficient. The farmer group aims to find out about the variety of farm systems and how profitable they really are.

The group also hopes to better understand what modifications, if any, are required for their own farm systems over the next few years.

To do this, all farms are analysed over a three-year period for their key performance indicators in economic and environmental areas.

The project involves two individual farm visits for each farm each year over three years, along with a couple of workshops for the group as a whole, and an annual field day on a couple of farms that are operating in ways that are both nutrient efficient and profitable, and that are resilient to variations in milk and feed prices.

This project is funded by the Sustainable Farming Fund, and Dairy NZ, with in kind support from a range of farmers, VetPlus, Regional Councils, several agribusinesses and iwi.

For more information, please phone 021 242 4949 or email Alison at Alison.Dewes@headlands.co.nz

Summer Students

LERNZ is pleased to welcome 9 summer students for 2011-2012:

Teresa Topp
Erin Doyle
Samuel Campbell
Luke Barnett
Geoff Carr

Ashley Webby
Niky Wu
Eriora Park
Michelle Vincent

The students are from a variety of backgrounds, within both the University of Waikato and other Universities. The students are working both in the lab and out in the field over the summer months, involved in a variety of OBI projects across the invasive fish and harmful algal blooms projects.



Summer students electrofishing in Lake Ohinewai

LERNZ Roadshow

In early 2012, the LERNZ group is embarking on a nationwide roadshow to showcase the range of tools developed by the LERNZ team.

David Hamilton, Deniz Ozkundakci and Adam Daniel will be travelling the country on selected dates during February and March meeting with as many stakeholders as possible from business, council, government and community groups.

Further details will be coming soon via our website (www.lernz.co.nz) or contact Jo Faber for more information on 838 4287 or email j.faber@waikato.ac.nz

Conferences

Adam Daniel attended the American Fisheries Society Conference (Seattle, USA) in September and visited the Malheur National Wildlife Refuge to discuss carp control measures with government agencies. Adam also attended the Australian Fisheries Society Conference where he presented a paper on the use of baited vs. unbaited double-wing fyke nets to capture common carp in a shallow New Zealand lake.

A group of LERNZ students and researchers attended the joint conference of The Congress of the Australian Society for Limnology and the New Zealand Freshwater Sciences Society in Brisbane during September. The LERNZ representatives presented both papers and posters.

David Hamilton and **Kohji Muraoka** attended the Global Lake Ecological Observatory Network (GLEON 13) meeting in New Hampshire, USA in October. Kohji presented his research on the determination of deep chlorophyll maxima depths whilst David took part in a panel discussion entitled 'The Global water Crisis'. For more information see: <http://www.lakesunapee.org/templates/details.html?x=254>

Jonathan Abell was one of ten students selected from amongst a group of international student applicants, to receive a travel award to attend the International World Lakes workshop in Austin, Texas. The conference ran from 31 October to 4 November and was followed by a workshop at Lake Tahoe, CA.

Jonathan Puddick attended the New Zealand Institute of Chemistry Conference held in Hamilton from 27 November to 1 December. Jonathan presented his research on biosynthetic promiscuity: Numerous microcystin congeners produced by a Microcystis strain (CYN06).

PhD Scholarships

LERNZ has two PhD scholarships to offer with a start date of early 2012:

- Development of a rotenone rapid assay and assessment of non-target impacts of rotenone use
- Impediments to lake restoration by identifying different social, policy and economic drivers that influence the restoration process

Please contact Jo Faber for more information on 838 4287 or email j.faber@waikato.ac.nz

For more information go to www.lernz.co.nz

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The University of Waikato, private Bag 3105, Hamilton 3240, New Zealand

Recent Publications

Hoellein, T. J., Bruesewitz, D. A. and Hamilton, D. P. 2011. Are geothermal streams important sites of nutrient uptake in an agricultural and urbanising landscape (Rotorua, New Zealand)? *Freshwater Biology* 57: 116–128.

<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2427.2011.02702.x/abstract>

Trolle, D., Hamilton, D.P., Hipsey, M.R., Bolding, K., Bruggeman, J., Mooij, W.M., Janse, J.H., Nielsen, A., Jeppesen, E., Elliott, J. E., Makler-Pick, V., Petzoldt, T., Rinke, K., Flindt, M. R., Arhonditsis, G. B., Gal, G., Bjerring, R., Tominaga, K., Hoen, J., Downing, A. S., Marques, D. M., Fragoso Jr, C. R., Søndergaard, M. and Hanson, P. C. 2011. A community-based framework for aquatic ecosystem models. *Hydrobiologia* DOI 10.1007/s10750-011-0957-0.

<http://www.springerlink.com/content/jw16n5n2612515r8/>

Puddick, J., Prinsep, M. R., Wood, S. A., Cary, S. C. and Hamilton, D. P. 2011. Enhanced sample preparation for quantitation of microcystins by matrix-assisted laser desorption/ionisation–time of flight mass spectrometry. *Phytochemical Analysis* DOI: 10.1002/pca.1356.

<http://onlinelibrary.wiley.com/doi/10.1002/pca.1356/abstract>

Social Media

Presentations from the 3rd Annual PhD Conference held at The University of Waikato in October 2011 may be found on iTunesU via the University of Waikato link.

<http://itunes.apple.com/nz/itunes-u/2011-biological-sciences-phd/id479090819>



LERNZ researchers kayaking on the Waikato River