

NRSM Research *NEWS*

Issue 5, July 07

Newsletter of recent research outputs, outcomes and activities in the School of Natural and Rural Systems Management, NRAVS, UQ.

NRSM Research NEWS publicises NRSM staff & student research achievements and provides information on research activities relevant to the school.

Editorial

The lateness of this Research News reflects the combined busyness of both Chair and Secretary. It was due at the end of May, and it is now well into July, so we will make this a combined issue.

The School's new Chair in Systems Thinking and Practice, a joint position with AgResearch New Zealand, has just been advertised. The appointee will work with all of us to facilitate the development and application of systems theory and methodologies in solving complex problems in sustainable management of agro-ecosystems, and provide leadership to help build a systems culture and appropriate capacity in both organisations. What an exciting step forward for the School and its partner.

The seminar series at both campuses continues to be very active, under the excellent management of Carl Smith and Colin Brown. Meanwhile the trial of having separate seminars (on any day) for confirmations seems to be working well at Gatton, so far as I can observe. Please attend seminars. They are an important part of our intellectual development and collegial interaction, as well as a connection with guest speakers and their organizations.

Annie Ross is on long service leave this semester, and Bradd Witt has kindly taken on her role (alongside Chris Jacobson) as co-chair of ethics. Please continue to give applications in both electronic and hard copy format to Leesa for processing, at least one month before the decision is required to allow time for any corrections the reviewers may deem necessary.

From March to April we were extremely busy with collection of the bibliographic record. I thank everyone who contributed, and especially those who were timely about it. While the number of DEST publications collected is similar to last year, I am very uneasy about likely omissions. I knew of three journal articles (by current or recent PhD students) that had not been included. Luckily I was able to insert these at the last minute, but I suspect there may have been others I had

not happened to hear of. Any omissions cost us dearly, by about \$1000 - \$5000 per article depending on where it was published.

A new Faculty Research Policy has been emailed to all faculty staff. Research committee members will be discussing it and its implementation at our August meeting.

There remains considerable uncertainty about the details of the implementation of the Research Quality Framework, given that a federal election is due soon, but the government and universities are proceeding with implementation. Disciplines have been sorted into groups, and panel chairs appointed. The University of Queensland has called for academics' cvs, and asked Heads of Schools to recommend allocation of staff to areas.

There has been relatively low take-up of academics' entitlements to conference support so far this year. Please inform Leesa urgently if you want to apply, as we need to know the funds remaining for allocation under the 'competitive' part of the scheme, and to make decisions. We have two applications so far under the competitive part.

Early in August a group from the School – Ockie, Helen Ross, John Herbohn, Carl Smith and Jenny Bellamy - will attend the International Systems Sciences Symposium in Tokyo. This is an important step in expanding our engagement with this international academic community, and a precursor to our hosting the Conference in Brisbane in 2009. We thank the many school members who are contributing as co-authors to the papers to be presented.

I wish you all productivity in your research and writing,

Helen Ross
Chair, NRSM Research Committee

Adjunct Professors

PERSONAL DETAILS

Name: John **Morgan** Williams
Nationality: New Zealand

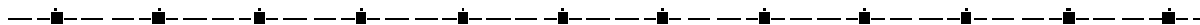
EDUCATION

- PhD University of Bath, United Kingdom, 1974
- MSc (distinction), University of Canterbury, New Zealand, 1969
- BSc, University of Canterbury, New Zealand, 1967



AREAS OF EXPERTISE

- Landuse/land management/resource efficiency
- Sustainability and sustainable development
- Energy futures
- Environmental monitoring
- Programme implementation, management, community/facilitation/extension
- Environmental and sustainable development policy
- Environment/sustainability governance
- Public communication; press, radio and television
- Research management and strategic planning
- Systems thinking and complexity theory
- Human resources/staff management



PERSONAL DETAILS

Name: John Bliss
Nationality: American

EDUCATION

- PhD – Forestry, University of Wisconsin-Madison, 1988
- MSc - Forestry, University of Wisconsin-Madison, 1979
- BA - Anthropology, University of Wisconsin-Madison, 1973

A message from John:

"I really enjoyed getting together with Ockie, Annerine, John Herbohn, Jack Baynes, Paul Dargush, Steve Harrison, and other UQ colleagues at the IUFRO conference in the Philippines. It is really a pleasure to associate with folks who know how to both work and play together! I'm already looking forward to the next opportunity to get together with y'all."



For more information on any of Adjuncts, their CV's can be found at <G:\Common\Adjunct Professor CV's>

Post Graduate Students Completed

Hearty congratulations are extended to the following postgraduate completions.

Hossein Bashari (Awarded June 2007) *Using of vegetation dynamics modelling (quantative approach) in developing a condition assessment system. Supervised by Ockie Bosch, Grant Wardell-Johnson, Carl Smith and Bruce Alchin.*

Lucio Brunale (Awarded June 2007) *Private sector participation in the Brazilian Agricultural Research System. Supervised by Mal Wegener and Kim Bryceson.*

Mark Hawkes (submitted). *Secondary Vegetation Patterns and Biodiversity Conservation in managed landscapes of the tropics: A case study of two multi-ethnic villages in the lower mountainous region of Thai Nguyen Province, Northern Vietnam. Supervised by Grant Wardell-Johnson, John Herbohn and Ilean Russell.*

Ben Lawson (PhD AWARDED). *The utility of site-based datasets and regional ecosystem mapping for biodiversity conservation in the South-east Queensland Bioregion: past, present, future. Supervisors Grant Wardell-Johnson, David Pullar, Bob Beeton.*

Nam Nguyen (PhD AWARDED). *Economic Evaluation of farming risks in Queensland. Supervisors Ilean Russell and Mal Wegener.*

Jacqui Williams (Awarded July 2007) *Critical success factors/attributes for establishing and maintaining sustainable regional NRM systems. Supervised by Bob Beeton and Geoff McDonald (School of GPA).*



Feature Research Projects

From 24 May to 8 June, **Ray Collins, Tony Dunne and Tim Sun**, along with researchers from **QDPI&F and WA Department of Agriculture and Food**, went to **Pakistan** to run the first round of workshops and set up on-going research projects as part of their **ACIAR project to improve the country's mango industry**. A one day meeting in Karachi of the 15 member two-country research team was followed by workshops with all members of the supply chain, plus government and agency staff and academics, in Hyderabad and Multan. Interviews and meetings were held with retailers, shippers and exporters in Karachi, retailers in Lahore, growers in Mirpur Khas and Multan, universities in Tandojam and Faisalabad, and government in Karachi, Lahore and Islamabad. A half day seminar on market research and supply chain management was held at the University of Agriculture Faisalabad.

As this is the very start of the harvest season, three trial export shipments designed to quantify and evaluate 'traditional best practice' were sent to the UK, Dubai and Singapore. Tony Dunne and Peter Johnson (Ag WA) evaluated the out turn of the UK shipment, Tim Sun and Jodie Campbell (QDPI&F) evaluated the Dubai shipment and Ray Collins did the Singapore out turn reporting. Much to their surprise and delight, the Pakistani researchers and supply chain participants received initial reports back within 24 hours of the evaluations. They have never had such feedback before, which may explain why Pakistan mangoes are the lowest priced on world export markets (USD 0.37/kg in 2006).

Return visits are planned for mid-season (August) and end of season (November) for the next three years.



Bob Maczkowiack has been conducting research into modeling the risks of returning mined land in central Queensland to cattle-grazing since April 2005. It arose from previous research conducted at the UQ Centre for Mined Land Rehabilitation, and remains a jointly sponsored project.

The following is from the Stage One report submitted to the funding body, Australian Coal Association Research Program, at the end of March 2007.

The Queensland state regulator and the mining companies that operate open-cut coal mines in central Queensland would both like to see domains of successfully rehabilitated mine land formally certified as having been returned to a sustainable end use acceptable to stakeholders and thereby presenting no further liability to the companies. This study addresses issues of risk were cattle-grazing to be the end use on such sites.

The research investigates the management of rehabilitated sites if placed under the stewardship of graziers, in particular, the way graziers' characteristics and circumstances influence their land management practices, and hence the risks that grazing – especially over-grazing – may incur. Graziers' 'within-person' characteristics (values and attitudes), the capital structure of the business, operational business circumstances, and the external economic and climatic environment were found to influence their land management practices. The research found key elements affecting risks of degradation to be the degree of conservatism in the grazier's approach to stocking rates and the operational flexibility afforded by the business

A further factor relates to the possible role of management caveats in regulating stocking rates. Since ongoing compliance with such caveats would be required, this is tantamount to an enduring business relationship being forged between the miner (and regulator) and the grazier. In business-to-business relationships, the level of trust and commitment existing between the parties is crucial. Graziers' expressed a willingness to comply with caveats. However, the research found that several critical precursors to trust and commitment were wanting.

A preliminary risk assessment model incorporates management factors with biophysical factors using a framework of conditional probabilities (Bayesian Belief Networks). Where mining companies purposefully pursue grazing as an end use, they could consider several interventions to reduce risks. These are: to ensure site architecture and surface rehabilitation techniques will result in a biophysical environment conducive to productive pasture growth; to construct grazable domains of a configuration suited to commercial cattle production, and to build trust between the company and landholders so that an enduring relationship, committed to sustainable grazing is achieved.

Future steps

Further data will be collected from industry experts over the next few months. This will refine the Bayesian Belief Network being used as the framework of the risk assessment model. Later in 2007 case study material will also be sought from stakeholders.

New Grants

Wardell-Johnson, G., Pullar, D., Smith, C. (UQ Firstlink - 2007) Biodiversity in mosaic landscapes: assessing the heterogeneity of disturbance for the improved management of conservation in Australian forested ecosystems. \$2000.

Wardell-Johnson, G., Pullar, D., Smith, C. (UQ Firstlink - 2007). Integrating ecological, social and hydrological knowledge systems for biodiversity conservation in multi-functional landscapes. \$2000.

New Post Graduate Students

A warm welcome to the following postgraduate students who commenced with us in 2007:

Loculan, Maria PhD (Rob Cramb): *"Agricultural Technology Intervention in an Upland Province in the Philippines: Processes, Approaches and Community Impact"*

Ngongo, Yohanis PhD (Rob Cramb): *"Political Ecology of Upland Transformation in West Timor and Sumba, Indonesia"*.

Sander, Juliane PhD (Grant Wardell-Johnson): *"Biodiversity and productivity in high rainfall Mediterranean ecosystems."* Julie was awarded an APA and is working on International Linkage project – 'Biodiversity in high rainfall Mediterranean-climate ecosystems: integrating fields of ecological enquiry to achieve improved conservation outcomes'.

Sanderson, Sunny PhD (Rob Cramb): *"Palm oil: the impact of large scale monoculture on rural development in Sarawak"*.

Sar, Simphorian PhD (Christine King): *"Embracing peoples innovation as a tool for development intervention in transforming agriculture and rural communities in Papa New Guinea."*

Publications from Natural and Rural Systems Management

R.A. Cramb, Land and Longhouse: Agrarian Transformation in the Uplands of Sarawak. Copenhagen: *NIAS Press*, 2007.

R.A. Cramb, D. Catacutan, Z. Culasero-Arellano, and K. Mariano, The Landcare approach to soil conservation in the Philippines: an assessment of farm-level impacts. *Australian Journal of Experimental Agriculture*, Vol 47 (2007): 721-726.

Lacey, Justine 2007, Establishing a Conceptual Framework for a Sustainable Water Ethic, *Crossroads*, Volume 1, Number 2, pp.37-48.

Lunt, I.D., Eldridge, D.J., Morgan, J.W., and Witt, G.B., 2007. A framework to predict the effects of livestock grazing and grazing exclusion on conservation values in natural ecosystems in Australia. *Australian Journal of Botany*, Vol 55, pp 401-415.

Qureshi, M.E., Qureshi, S.E., and Wegener, M.K., 2007. Economic implications of alternative mill mud management options in the Australian sugar industry. *Agricultural Economics*, Vol 36, pp 113-122.

Renouf, M.A., and Wegener, M.K., 2007. Environmental Life Cycle Assessment (LCA) of sugarcane production and processing in Australia, *Proceedings Australian Society of Sugar Cane Technologists Conference*, Cairns, 8-11 May 2007, Vol 29, pp 385-400.

Romanach, LM, Grice, J., Wegener, MK, and Morris, SE., 2007. Knowledge and attitudes about GM crops among the general public and canegrowers in Queensland, *Proceedings Australian Society of Sugar Cane Technologists conference*, Cairns, 8-11 May 2007, Vol 29, pp 267-275.

Wardell-Johnson, G. Lawson, B, & Coutts, R. 2007. Are regional ecosystems compatible with floristic heterogeneity: a case study from Toohey Forest Brisbane, Australia. *Pacific Conservation Biology* 13: 47-59.

