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FROM THE DIRECTOR OPINION

by Dr Paul Humphries

FISH OUT OF WATER

We have completed our second year as a research group. The recent Advisory Board meeting with the Management Team in Bathurst provided a timely opportunity for reflection and for an external review of our progress towards becoming an internationally recognized research group contributing to better management of critical national issues. At that meeting I spoke briefly about our achievements in:

- consolidating governance and management arrangements;
- exceeding ambitious key performance measures for DEST publications and research income;
- developing integrated programs of research; and
- communicating within ILWS and with external partners.

Board members clearly wanted evidence that we had made progress with the difficult task of integration. My discussions with the Board at the end of the meeting indicated that the presentations during the day, particularly by the Integration Program leaders, had demonstrated this was occurring. The Vice Chancellor also addressed the meeting and spoke with great passion about research at CSU. Our meeting concluded with short presentations from ILWS researchers.

Board members were impressed by the quality and application of the work being undertaken, including that by David Roshier (tracking bird migrations into northern Australia), Andrea Wilson (PhD student examining the social construction of quarantine risk), Peter O'Meara (expanding the role of paramedics in rural communities), Skye Wassens (frogs as indicators of wetland health) and Kevin Parton (responses to climate change).

Some other recent highlights in ILWS include:

- completing the upgrade to the ILWS web site;
- updating the Institute's capability statement (brochure) to reflect our achievements this year;
- finalizing negotiations for Teaching Buyout in 2007 (names of recipients will be published next newsletter); *(cont page 2)*

The current drought has been called the "worst since records began", a "one in 100 year" and a "one in 1000 year" drought. There is an almost macabre enjoyment that some people extract from climatic records being broken.

But there is nothing entertaining about the loss of livelihoods of farmers, nor even the more mundane, but nevertheless tragic, death of suburban plants that we are seeing. And, while these issues are real and resonate throughout most Australian communities, one group which has received relatively little attention, yet will probably suffer more than any other is our fish and other riverine animals and plants.

Although Australia's animals and plants are adapted to our harsh environmental conditions, this does not mean that they are not severely affected by fires, floods and droughts. What they have is a high degree of resilience and can bounce back from remnant populations which managed to survive in some sort of refuge. However, for recovery from drought to occur, these refuges must first exist. Isolated pools, scattered along river beds would most likely have been the refuges for fish in droughts of the past. Once rain came again and rivers flowed freely, fish would have bred, and immature and mature fish would have moved large distances. Recovery, however, could have taken several decades.

With the intensity of water resource and other development, humans may have compromised the innate resilience of fish and other aquatic organisms in our rivers. Isolated pools, with concentrated numbers of fish could be either pumped dry by unsuspecting landowners or fished out by anglers, thus removing the source of future fish. With the huge number of barriers (thousands throughout the Murray-Darling Basin), dispersal from refuge pools will undoubtedly be limited (unless the drought is broken by an enormous flood) and so recovery will take even longer, if it happens at all.

(cont page 2)



FEATURE ARTICLE: ASSOCIATE PROFESSOR ROBYN WATTS

"Most natural resource management issues are very complex and so effective management solutions can't be based on just one discipline. I believe that integrated research is the way of the future in applied science". Story Page 4

FROM THE DIRECTOR (cont.)

- interviewing candidates for the ILWS Business Manager position;
- hosting a very popular climate change forum in Wodonga in conjunction with La Trobe University that engaged candidates for the Victorian state election (we will have similar events in NSW next year);
- and co-hosting a very successful wetlands forum and bird/nature fair in the Riverina (Iain Taylor led the ILWS input).

In wrapping up 2007 I want to thank the Discipline Group leaders (David Watson/ Robyn Watts; Marg Alston/ Colin Boylan; Joanne Millar; Shahbaz Khan; and Mark Morrison); and the Integration Program leaders (Gary Luck/ Marg Alston and Angela Ragusa; and Robyn Watts) for their critical contributions to the development of the Institute. I also want to acknowledge the wonderful work of ILWS staff, (Margrit Beemster, Kate Roberts, Kris Deegan, Nicky Loane and Karryn Murray). Later in the newsletter we farewell Craig Grabham and Leigh Thompson who have given great service to ILWS through their work in the Johnstone Centre Environmental Consulting (JCEC). The decision to close the JCEC was taken after considerable deliberation, including discussions with Craig as the JCEC Manager. In the end, a key factor was our intention to focus on research rather than consulting.

I wish you all the best for a happy and safe Christmas period and look forward to working with each of you in 2007.

-Prof Allan Curtis

OPINION (cont.)

While agricultural, economic and social drought may ease considerably with the first rains, hydrological and ecological drought may take some time because our empty dams are waiting to capture vast volumes of runoff which would normally flow unimpeded down rivers.

What can be done? The general community, management agencies and scientists must recognise that to fish and other river dwellers, drought does not just mean a lack of water. Refuges will be critical and so must be identified and protected from pumping and angling. Enlisting angler and landowner support is crucial. Bans on fishing may be needed. These bans may need to continue well beyond the breaking of the drought to ensure the survival of future fish. Movement of fish should be as unfettered as possible once rivers start flowing again. This could be a problem for upstream movement, unless fishways are in place, but downstream movement may be less of an issue if high flows occur. It is imperative that rivers get a major share of runoff when the drought breaks. There is little doubt that this drought is going to put increased stress on inhabitants of our rivers and that we will almost certainly lose many of them in those waterways most affected but there are many practical things that can be done to dramatically improve their chances of recovery.

IN THE NEWS

ROTA

Assoc Prof Dirk Spennemann's lecture on "From Crossroads to Cultural Reservoir: Rota during the German Colonial Period" made the *Marianas Variety* on Sept 4.

WASTE WATER

Prof David Mitchell was featured in *The Border Mail* in a story which said the Albury city council was making an "ill-informed" move to dump 900 megalitres of waste water a year into the Murray River on Sept 9. That evening he was on WIN TV Albury talking about water restrictions and what residences can do to minimise water usage.

CLOSING THE GAP

Research conducted by Prof Allan Curtis which found that landholders feel strongly about passing their property on in a better condition was featured in a story generated by Landcare Australia for its new campaign to close the gap between the city and the bush in *The Tablelander* on Sept 12.

PARENTS WITH CANCER

PhD student Janelle Levesque who is researching the effects that having a parent with cancer has on adults was interviewed by Anne Delaney on radio ABC Riverina on Sept 27.

LEARNING IN LAOS

Dr Joanne Millar's research in Laos was featured in an article 'Learning by Example' in the ACIAR Partners magazine Spring 2006.

ALBURY RAIL STATION

Assoc Prof Bruce Pennay was interviewed on radio for ABC Goulburn-Murray on September 30 regarding getting Albury Railway station on the national register of the National Heritage List.

LANDCARE

Prof Allan Curtis' research on Landcare and comments on its future were featured in an article "Landcare feeling the pressure of success - 20 years on" in the October issue of the *Australian Landcare* magazine.

PENGUINS

Prof Nick Klomp and his research with students on penguin colonies at Montague Island was featured in the *Canberra Times* on Oct 9.

MASCULINITY

PhD student Ian Coldwell, who is researching masculinity and identity among young dairy farmers in Northern Victoria, spoke on how drought is affecting Australian males' masculinity on:

- ABC South West Victoria radio on Oct 9
- ABC Gippsland Victoria radio on Oct 10.

WILDLIFE

A profile piece "Finding riches in wild life" on Matt Herring, an ILWS wildlife ecologist, was published in *The Weekly Times* on Oct 11.

BUSHFIRES

Dr Ian Lunt and his comments on the ecological impacts of bushfires were mentioned in a story on the history of bushfires in the *Border Mail* on Oct 11.

ECONOMIC IMPACTS

The Western Research Institute's Tom Murphy spoke on an economic impact study for Braidwood on ABC Illawarra radio on Oct 18, following a story in the *Braidwood Times* on Oct 11.

DROUGHT

Prof Kevin Parton spoke on drought funding on ABC Central West radio on Oct 25.

GLOBILISATION

Assoc Prof Manohar Pawar, who was a key organiser of an international conference on the influence of globalisation on economic development and human security in the Asia-Pacific held in Thailand in October, was featured in the *Daily Advertiser* on October 17, and again, in *The Leader*, on Nov 22 in a story "CSU researcher thinks globally".

BIRD MOVEMENT

Dr David Roshier was interviewed by ABC Riverina on Nov 7 in relation to his new ARC research project on migrating birds in northern Australia and their effect on the potential spread of avian influenza.

INDIGENOUS EDUCATION

Yalmambirra was interviewed by Prime TV news and WIN TV news Albury on Nov 9 for Indigenous Education Day.

GLOBAL WARMING FORUM

This Institute event attracted plenty of media coverage with the director of the Institute Prof Allan Curtis:

- featured in stories on the front and feature pages of the *Border Mail* on Nov 18
- interviewed by Jonathon Wright for ABC Goulburn-Murray on Nov 20
- interviewed by Anne Delaney for ABC Riverina on Nov 21.

WATER MATTERS

Leader of the Institute's Water Systems discipline group Prof Shabaz Kahn provided comments on the current water crisis in the Murray-Darling Basin. Coverage included:

- radio ABC Inland NSW, ABC Central West, Star FM news, The River news, Star FM news Shepparton on Nov 7
- ABC Science online on Nov 24.

Prof David Mitchell also commented on the same issue on Win TV news, Nov 6.

DROUGHT COMMENTS

- Prof Nick Klomp was on Prime TV news speaking on animal behaviour indicating impending rain on Nov 1 and on 2BS morning show (radio) commenting on the effects of drought on Australian bush on Nov 13.
- Prof Marg Alston spoke on the effects of drought on rural people and their communities on 2BS on Nov 15.
- Prof Allan Curtis spoke on land management issues arising from the drought on WIN TV news on Nov 20.

HERITAGE SURVEYS

Assoc Prof Dirk Spennemann spoke to Jonathon Wright, ABC Goulburn Murray about heritage surveys in Albury on Nov 28.

SUSTAINABLE LIVING

Dr Gary Luck was interviewed on ABC Riverina radio for his new ARC research project on sustainable living in urban environments on Nov 28.

Economist Assoc Prof Mark Morrison spoke on 2BS radio about carbon emissions trading on Nov 29.

THREE SHIRES

Assoc Prof Bruce Pennay spoke about his new book on radio ABC Goulburn Murray and ABC Riverina on Nov 29.

(compiled with the assistance of the CSU Media Department.)
www.csu.edu.au/news

INSTITUTE EVENTS

PHDS ATTEND MEDIA TRAINING

Fourteen ILWS PhD students learnt how to write a media release and deal with journalists at a special training workshop run by ILWS. Held in Wagga in late October and Thurgoona in early November the workshops were run by Margrit Beemster and Kate Roberts, with seasoned media performers Nick Klomp and Jenny Wilkinson giving the students a taste of their own media experiences. Some of the students have prepared media releases about their research. ILWS is keen to promote the work of our PhD students and provide the students with the skills to handle the demands of the media. Follow-up workshops for PhDs and a special early career researcher session are planned for 2007. Anyone interested in attending should contact Kate Roberts.



(L to R) Ian Colwell, Tamara Jackson, Kate Roberts, Patty Please and Janelle Levesque at the media workshop at Wagga

HOT TOPIC

Excellent attendance at a recent public forum on global warming held at La Trobe University's Wodonga campus on November 20 confirmed public interest in this critical issue. The evening forum "Global Warming –What can we do? What do our polities propose?" was presented by the Institute and La Trobe's Department of Environmental Management and Ecology, School of Life Sciences.

The forum, attended by 170 people, provided for an informative discussion on the positions of our major political parties, and how regional communities can respond to the challenges posed by climate change. The speakers were Bill Baxter (National Party), Lisa Mahood (ALP), Helen Robinson (Greens) and Tony Plowman MP for Bill Tilley (Liberal Party). Lizette Salmon, a Wodonga resident



Bill Baxter in action at the Global Warming forum

concerned about climate change, approached ILWS with the idea of a forum with the politicians. Institute director Prof Allan Curtis spoke about climate change predictions, and social and economic impacts in this region. Chair of the evening was Assoc Prof Phil Suter from La Trobe. He said the forum was an example of the region's two universities working together to inform the community on important issues.

INTEGRATION PROGRAM MEETING

Twenty-six ILWS members attended a meeting on October 20 to discuss one of the Institute's two integration programs- demographic change in rural Australia. Presentations were made by Allan Curtis; program co-leader Gary Luck; and Angela Ragusa on her proposed project 'Exploring perceptions and realities of socio-ecological change in post-agricultural environments in rural Australia.' Program goals from discussions included implementing integrated research programs; establishing long-term strategic partnerships; influencing decision makers; and developing the research capacity of program members. Ways of achieving the program's long and short term objectives which included publishing a peer-reviewed book in 2007/9 and holding a national conference in 2008/9 were discussed as were ideas for future research topics. ILWS has allocated one PhD scholarship to this integration program.

PROFILE

ROBYN WATTS

When she first started her career as a fish ecologist Associate Professor Robyn Watts never envisaged how her research interests would connect to one another and lead her more and more down the path of integration.

Not surprisingly then, it is Robyn who heads up one of the Institute's two integrated research programs – The sustainable management of key environmental assets in the central Murray-Darling Basin. "Basically more and more of what I do is multidisciplinary research," says Robyn. "Most natural resource management issues are very complex and so effective management solutions can't be based on just one discipline. I believe that integrated research is the way of the future in applied science."

Robyn, who lists her research interests as "ecology, biodiversity, management and restoration of aquatic ecosystems" did her PhD in Western Australia looking at the connections between marine and estuarine populations of several species of fish. This led to a job with the Queensland Department of Primary Industries working on freshwater fish in the Murray Darling Basin. Over that four year period Robyn travelled extensively throughout the Basin sampling fish populations, and, as with her PhD, used genetics to examine the connectedness of populations with a natural resource management and biodiversity protection focus. "It involved identifying genetic populations of some of the key species including golden perch" says Robyn who still has very strong collaborative links with the Murray Darling Basin Commission.

In 1995 Robyn joined CSU at Wagga to lecture in aquatic ecology. While not a major research focus these days, her interest in fish has continued through her research students. Currently she is co-supervising two PhD students working on fish projects (Keller Kopf and Nick Whiterod) and last year had three Honours students working on fish projects. Robyn also teaches in a subject on river restoration and protection which corresponds with current research interests and projects. "Even the subjects I teach have become much more integrated," reflects Robyn. "Students taking the subject River and Floodplain Ecology integrate ecology, geomorphology, hydrology and water chemistry in one of their practical projects."

One of the Institute's principal researchers, Robyn has been involved in a number of major research projects. Last year, for example, she completed a major ARC project on developing indicators of river health and a project in collaboration with CSIRO Land and Water about setting priorities for river restoration practices. Along with her colleagues she has also completed three consultancies on the Mitta Mitta River for the MDBC including an examination of responses of biofilms to cyclic releases during low flows.

"These projects have underpinned the next big project I am developing with ILWS colleagues, which is an integrated project looking at the better operation of dams," says Robyn. "The previous projects in the Mitta Mitta River were very ecology- focussed. This new project will be much more integrated with hydrology, geomorphology, ecology and socio-economic elements," she says. "I like the challenge of undertaking integrated research and I like collaborating with different people."

Her work on the Mitta Mitta River has also led to international links. In September she hosted a two-day visit to North-East Victoria by a group of Japanese scientists, managers and consultants interested in improving the ecology health of rivers in regulated systems. The group of 14 included representatives from the Japan Water Resources Environment Technology Centre and two professors from two Japanese universities.

Robyn is based at the Wagga campus and lives with her family at Mangoplah.



Robyn Watts, (right) Remy Dehaan and Japanese visitors on the Hume dam wall.

"I like living in a small rural community and having friends that are farmers who are actually doing river restoration work on the ground. This helps me think about river restoration from a 'grassroots' point-of-view," she says.

CONFERENCES, SEMINARS & WORKSHOPS

ECOLOGY ACROSS THE TASMAN

The Institute was well represented at the Ecology Across the Tasman (joint ESA and Ecological Society of New Zealand) conference in Wellington, NZ held Aug 28 to Sept 1 with PhD students Laurence Barea, Anna Burns, Honours student Chris Coombes and staff member Alison Matthews attending.

Laurence presented a talk titled 'Temporal variation in resources modulates timing of breeding in a southern hemisphere mistletoe specialist'; Anna received the highly commended award for student posters with her poster 'Arthropod assemblages of mistletoe: composition and spatial turnover'; Chris presented on his research investigating the survival of captive-bred mallee fowl released in Nombinnie Nature Reserve this year; and Alison Matthews presented a spoken paper on 'Roost selection by Gould's long-eared bat *Nyctophilus gouldi* in wood-chipped forests of south-eastern Australia'. Funding to attend the conference was provided by the ILWS.

BIOSECURITY

PhD student Anna Burns' poster 'Arthropod assemblages of mistletoe: composition and spatial turnover' was awarded best student poster at a joint conference of the Aust & NZ entomology societies conference, Biosecurity – caring for the environment and agriculture, held at the University of Adelaide, September 24-27. Anna also gave an oral presentation at that conference.

HISTORIC LAND USE

Sue Hughes, PhD student presented a paper on 'Exploring the impacts of historic land-use policies on landscape and vegetation patterns in New South Wales' at an international conference, Patterns and Processes in Forest Landscapes: Consequences of Human Management, held in Locorotondo, Italy in September. Over 120 participants from 34 countries presented on a broad spectrum of topics ranging from restoration ecology, remote sensing, spatial modelling, policy setting in resource management, urban ecology, history and sociology.

ECONOMISTS' CONFERENCE

Yapa Bandara presented a paper on 'Structural Transformation and TFP Growth in Manufacturing: The Case of Sri Lanka' at the 35th Australian Conference of Economists held during at Curtin University, Perth, Sep 27-29.

GLOBALISATION'S IMPACTS DISCUSSED IN ASIA-PACIFIC

Poverty, post-disaster rehabilitation and community development issues were intensely debated at an international conference on the influence of globalisation on economic development and human security in the Asia-Pacific. About 150 participants from 20 countries attended the conference held in Thailand in October and organised by Assoc Prof Manohar Pawar in collaboration with Japan's Taisho and Kyushu Universities, and Thailand's Thammasat University. A strong theme emerging at the Conference concerned Thailand's policy focus on a 'self-sufficiency economy'. This new model advocates the country's social policy for a modest life, resilience and the role of reasoning to progress society. Manohar said: "The conference was not only a great success, but also laid a solid foundation for the group's intention to play a role in bringing the region's millennium development goals to fruition."

SOCIAL CHANGE

Dr Angela Ragusa presented at and attended the Social Change in the 21st Century Conference, QUT Centre for Social Change Research, Carseldine Campus, Brisbane on October 27.

PARAMEDIC PROJECT

Assoc Prof Peter O'Meara presented on the 'Rural and Regional Paramedic Project – Where to now' at the 4th National Ambulance Rural and Remote Symposium in Broken Hill on the October 26-27; and on 'Growing Paramedic Academics should not be left to chance' at the Australian College of Ambulance Professionals National Conference 2006 in Adelaide on November 3-4.

SUSTAINABLE WATER MANAGEMENT

PhD student Hamza Gabriel presented a paper (co-authored with Prof Shahbaz Khan) on 'Policy Options for Sustainable Urban Water Cycle Management in Lahore, Pakistan' at an Ecological Research for Sustaining the Environment in China (ERSEC) Workshop on Sustainable Water Management – Problems and Solutions under Water Scarcity in Beijing, China held from November 6-8. The workshop was organised by the Beijing Water Authority (BWA), Ecological Research for Sustaining the Environment in China (ERSEC) Project, UNESCO Office Beijing, WASY Institute for Water Resources Planning and Systems Research Ltd and Project Management Agency Forschungszentrum Karlsruhe, Germany.

SPATIAL PRIORITISATION

Dr David Roshier attended a workshop on Spatial Prioritisation for Conservation, Canberra, on Nov 9 run by the Spatial Ecology Group from the University of Queensland.

PLANNING ISSUES WORKSHOP

Institute members Dr Joanne Millar, Dr Rik Thwaites and Emily Mendham attended an Indigo Shire Rural planning issues workshop at Rutherglen on November 10 where Prof Curtis gave a presentation on trends in property turnover in Victoria and implications for NRM.

AUSTRALIANS ON THE MOVE

Dr Joanne Millar and PhD student Emily Mendham attended the annual Academy of Social Sciences conference in Canberra on November 21. The theme was Australians on the Move. Papers examined trends in internal migration over the last 25 years as influenced by labour and housing markets, youth aspirations, overseas immigration, ageing and retirement, social and environmental imperatives and indigenous migration.

BIRDS AND WETLANDS

Some 120 delegates from all the major stakeholders and government agencies that deal with water and biodiversity issues in wetlands attended the Murrumbidgee Wetlands Forum on Practical Management in an Altered Environment held at Leeton, Nov 22-24. Presenters from the Institute (which helped sponsor the event) included Professor David Mitchell 'Chain of pond wetlands – Natural Sequence Farming'; Matt Herring 'Conservation of Brolgas in

Southern Australia'; Dr Iain Taylor (with Mike Schultz) 'Comparative feeding ecology of wading birds in rice fields of the Murrumbidgee Irrigation Area'; Assoc Prof Robyn Watts 'Small native fish populations in Murrumbidgee floodplain wetlands' and Skye Wassens 'Frogs and Wetlands.' The forum provided an excellent opportunity for discussion and potential for future collaboration according to Dr Taylor, who played a leading role in the planning and organisation of the event.

The forum was followed on the weekend Nov 25-24 by a Birding and Nature Fair, aimed at the general public. Some 300 people took part in the Fair. Institute representatives included PhD students Elisa Tack talking on 'Caring for the Bush Stone-curlew', Laurence Barea on 'The secret life of the Painted Honeyeater', and Dr Taylor on 'Australian waterbirds.'

COMING UP

THE FUTURE FOR REGIONAL RAIL

Canada's successful regional rail system following deregulation and privatisation, is an example for Australia as the future for our rail network is continually questioned. ILWS and Engineers Australia's Railway Technical Society will host a "Future Frameworks for Regional Railway Symposium" at CSU's Wagga Wagga Campus on 1 February 2007 to put forward some assessments of Australia's regional transport system and discuss regional-based solutions. Nine guest speakers will present case studies from across Australia and a panel session will encourage audience debate. For more information and to register visit the website: <http://www.csu.edu.au/research/ilws/news/frameworks.htm> or contact Kate Roberts.

GREAT RESPONSE TO CALL FOR PAPERS

Over 140 abstracts were submitted for inclusion in the 5th Australian Stream Management Conference program and the organising committee had to make some tough decisions to decide on the final 90 presentations. 'Australian Rivers: making a difference' is the over-arching theme and the papers address the 5 sub-themes on policy, restoration practices, adaptive management, restoration investments and capacity building. The conference poster session will be interesting with about 40 posters expected and covering all of the themes. A registration brochure should be available online before Christmas. <http://www.csu.edu.au/research/ilws/news/conference.html>.

The conference, which ILWS is hosting, will be held in Albury, NSW from 22-25 May, 2007. Early Bird registration costs \$550 which includes all conference functions and the field trip. Deadline, for registration, is 19 March 2007.

AWARDS & APPOINTMENTS

At the invitation of the CRC eWater, **Prof Kath Bowmer** judged the Young Water Scientist of the Year Award at the Brisbane Rivers Symposium.

As a result of recent CSU promotions the Institutes now has three new **Assoc Professors, Manohar Pawar, Robyn Watts and David Watson**. Congratulations also to **Dr Penny Davison and Dr Branka Krivokapic-skoko** who have been appointed senior lecturers.

Welcome to new post-doc **Karen Ross** who joined the Institute in September. Karen, who will be modeling woodland tree dynamics across central NSW, is working on a project with Dr Ian Lunt, Dr Ross Bradstock (Wollongong) and Michael Bedward (DEC NSW)

We wish **Leigh Thompson** and **Craig Grabham** all the best in their new positions with GHD (an international engineering and architecture company). Their contribution to Johnstone Centre-Environmental Consulting was greatly valued.

PUBLICATIONS

PEER-REVIEWED PAPERS

Wilson, A., Jansen, A., Curtis, A. & Robertson, A. (2006) Measuring riparian condition: a comparison of assessments by landholders and scientists. *Ecological Management & Restoration*, 7(2): 123-129.

Edmonds, T., **Lunt, I.D., Roshier, D.A. & Louis, J.** (2006). Annual variation in the distribution of summer snowdrifts in the Kosciuszko alpine area, Australia, and its effect on the composition and structure of alpine vegetation. *Austral Ecology* 31(7), 837–848.

Lunt, I.D. (2006). Review of 'Heartland: the regeneration of rural place'. *Ecological Management and Restoration* 7(2), 159-160.

Mazur, N. & Curtis, A. (2006) Risk perceptions, aquaculture, and issues of trust: Lessons from Australia. *Society and Natural Resources* 19: 791-808.

Boylan, C., and Collin, K. (2006) Developing a partnership between the Riverina Environmental Education Centre and Charles Sturt University. *Australian Journal of Environmental Education*. Vol 22, pp.1-10.

CONFERENCE PAPERS/PROCEEDINGS

Ragusa, A. T. and Holden, T. (2006). Social change in *The Australian's* media representation of corporate news reporting on two environmental organizations (Greenpeace & Landcare) in the millennium. The Centre for Social Change Research 2006 Conference Proceedings, November, 2006, Brisbane: Queensland University of Technology.

Race, D. (2006) Forestry partnerships in Australia and Indonesia. In: G. Unwin & A. Lyons (eds) *Sustainable Forestry – Everyone Benefits*. Proceedings of the Australian Forest Growers International Biennial Conference: Launceston, 22-25 October 2006. pp: 59-66.

Bowmer, K.H., Saintry, G. R., Sonneman, J., and Price, A. (2006) Plant biomass management in the Ord Irrigation Area: science underpinning operations in irrigation supply flow management. *Australian National Committee on Irrigation and Drainage*, Darwin 13-15 October 2006

TECHNICAL REPORTS

Bowmer, K.H., Bennett, J., Hillman, T., Flett, D.W. (2006) Peer Review of the Macro Water Sharing Planning Approach, Confidential Report to the NSW Department of Natural Resources, 14 August 2006, 54pp.

Curtis, A., Cooke, P., McDonald, S., & Mendham, E. (2006) Corangamite social benchmarking survey 2006. Report # 30. Institute for Land, Water and Society, Albury, NSW.

Race, D., Curtis, A., Birkhead, J., Boyd, M., Cooke, P., McDonald, S., & Sample, R. Assessment of customer responses to total channel control and channel automation in the central Goulburn Irrigation Area, Victoria. Report # 32. Institute for Land, Water and Society, Albury, NSW.

Atkinson, J., Teng, T., Curtis, A., Black, R., and Cooke, P. (2006) The digital divide in Albury. Report #35. Institute for Land, Water and Society, Albury, NSW.

BOOKS

Pennay, B. *Three Shires & Their Councils*. Assoc Prof Bruce Pennay's book traces stories of three shires and their councils – Culcairn, Holbrook and Hume. Predominantly an account of twentieth century rural NSW, it shows how rural people shared good times and endured similar difficulties through depression, drought, fire, flood, war and market uncertainties. It examines the different impact on each of the three shires of changes in the rail, road and river lifelines of the south-eastern Riverina region.

Spennemann, Dirk H.R. (2006) *Buses Up & Down the Murray. The Murray Valley Coach Company of Albury*. Albury, N.S.W. : {retro|spect} iv, 158 pp. ISBN 978 1 921220 03 6.

NEWSLETTERS

Forestry partnerships in Indonesia and Australia, Project newsletter #3, July 2006

RURAL SOCIETY – SPECIAL EDITION

There is a focus on governance in the special edition journal of Rural Society for this year. The guest editorial on 'Changing forms and emerging actors of rural governance in Australia' is contributed by Lynda Cheshire, Vaughan Higgins & Geoffrey Lawrence. Papers include:

- Facilitating multi-sector dialogue for natural resource management: Examples of rural governance in two Queensland regions *Lionel V. Pero & Timothy F. Smith*
- Using game theory to explain the behaviour of participants involved in a regional governance process *Jonathon Howard*
- Towards a more regional federalism: Rural and urban attitudes to institutions, governance and reform in Australia *A.J. Brown, Ian Gray & Dimitria Giorgas*
- Community governance in rural Victoria: Rethinking grassroots democracy? *Kevin O'Toole*
- Governance in the Gaps: Inter-Agency Action in a Rural Town *Robyn Eversole & Kaye Scholfield*
- Self-helping from the hand that feeds? Evaluating the 'deserving community' ethic of governance in North East Tasmania *Michelle Godwin & Bill Pritchard*
- The convergence of regional governance discourses in rural Australia: Enduring challenges and constructive suggestions *Tiffany Morrison & Marcus Lane*

CHANGES

As of 2007 Rural Society will be published by eContent on line and in paper. Currently negotiations are underway for a special subscription price for any ILWS members. Further details:

- From 2007 Rural Society (ISSN 1037-1656) will be published by eContent Management Pty Ltd
- <http://www.e-contentmanagement.com/>
- Subscriptions may be renewed for 2007 directly with the new publisher
subscriptions@e-contentmanagement.com
- Authors may continue to submit manuscript to the Editor, Marion Bannister at csr@csu.edu.au
- Rural Society (ISSN 1037-1656) will be indexed/abstracted in more major international indexing services and databases

- During the course of 2007 back volumes of Rural Society (ISSN1037-1656) will be made available online to current subscribers

GAME THEORY

ILWS member Jonathon Howard is using the cooperative game theory to model strategies for water management in the Murray. Mathematical modelling is being used to predict how stakeholders attempt to resolve a dilemma of balancing economic production with the environmental conservation in water management.

Cooperative game theory has been used to model how to resolve environmental problems around the world where there are both economic and environmental costs and benefits to any proposed change in a management process. The theory offers a cooperative approach to problem-solving, rather than a competitive approach to natural resource use, and is widely used in business negotiation where strategies can be assessed by balancing benefits and costs. Jonathon has now applied this to real world examples where people are negotiating over water allocations. "Fair and transparent water management strategies which balance economic benefits with the cost to the environment can be increasingly called for particularly in this current drought," he says.

Some of his research findings are published in the current issue of **Rural Society** and will be presented at the 10th International River-symposium & International Conference on Environmental Flows and the 5th Australian Stream Management Conference next year.

VISITORS

PUBLISHING EDITOR FROM SPRINGER

Dr Catherine Cotton, a visiting Publishing Editor from Springer, one of the world's leading publishing companies, took the opportunity to speak to ILWS members on September 8 at Thurgoona about opportunities for publishing journal articles and books with Springer. Catherine, who represents journals such as *Landscape Ecology*, *Plant Ecology* and *Agroforestry Systems*, and *Biodiversity and Conservation* is based in the Netherlands and is particularly interested in interdisciplinary work between biology or forestry and the social dimensions of sustainable landscapes.

"Everything we accept goes on line first, before it is published in the actual hard copy of the journal, and is fully citable," she said. "And within the next five years we will see more and more E books where books are published on-line chapter by chapter. With Springer every book we have published since 2006 has also been published in an electronic version." Catherine also detailed where there are opportunities for integrated research to be published. "With *Landscape Ecology*, for example, within the broad scope of the journal the decision was made for it to become more interdisciplinary so as not to have too narrow a focus," she said.

LEARNING FROM EACH OTHER

Five Indonesian researchers with an interest in community-based forestry recently had the opportunity to learn first hand of the differences and similarities between the Australian and Indonesian forestry sectors. The five researchers, who are associated with the Institute's 'Community partnerships for plantation forestry' project with funding from the Australian Centre for International Agricultural Research (ACIAR), took part on an eight-day study tour of South-East Australia led by Dr Digby Race and PhD student Hugh Stewart. The tour, undertaken during Nov 11-19 included:

- meetings in Canberra with ACIAR's Forestry Program Manager Dr Russell Haines, and forest policy specialist Mr Jim Donaldson;
- presentations by ILWS's Dr Joanne Millar, and Albury-based forestry consultant Mr John Moore; and
- field visits to several properties with farm forestry, including one managed by Mr Hugh Dunchue from Forests NSW.

The visiting researchers also had time for an informal dinner with several Albury-based ILWS researchers.

Mr Djohan Perbatasari, co-project leader and Director of the Forestry Research Institute in Sulawesi, said: "We are very interested in how Australia manages its forests - private forests, public native forests and farm forests. The way we manage our native forests is similar to Australia but our farm forestry is very different in Indonesia. There are a lot of challenges, such as many regulations and often the ownership of forests is not clear. I am keen to learn more about the requirement of the Australian forestry industries to meet the Code of Forest Practice, the role of brokers in linking farmers with markets, and how farmer forest groups organise themselves."

Also on the study tour was Mr Bugi Sumirat, a socio-economist who has recently been awarded a full scholarship by ACIAR to undertake post-graduate research at CSU commencing in 2007.

VISITING RESEARCH PROFESSOR

ILWS has recently hosted a Visiting Research Professor in Pre-hospital Care, Malcolm Woollard, from the United Kingdom in collaboration with the Australian College of Ambulance Professionals and NSW Ambulance. During his visit he gave guest lectures to undergraduate students, worked with staff on research projects and presented at two major conferences. He attended and presented at the 4th National Ambulance Rural and Remote Symposium in Broken Hill on the 26-27 October 2006 and at the Australian College of Ambulance Professionals National Conference 2006 in Adelaide 3-4 November 2006. Professor Woollard gave keynote addresses at both conferences on the *UK Paramedic Practitioner Course*.

OVERSEAS TRIPS

POST-TSUNAMI

Research Fellow Dr Tony McDonald recently returned to Australia after more than 12 months contribution to the post-tsunami rehabilitation processes in Aceh, Indonesia. Tony, who was a consulting Environmental Specialist, collaborated with a cross-disciplinary team to develop long-term planning for affected areas at local government level. One of his inputs was to complete a rapid aerial study of the freshwater systems along the west coast of Aceh in response to requests from fishing dependent communities. People wanted to open blocked river mouths and estuaries, closed as a result of sand deposits and coastal accretion.

The survey found the whole coast was still in a highly dynamic situation and that any clearance work required further site specific assessment. Tony considers that in an emergency scenario such as Aceh, where the tsunami caused wholesale destruction of ecosystems, infrastructure and livelihoods, along with loss of life, there is an unprecedented challenge with no off-the-shelf recipe for successful implementation.

Tony found that planning in Aceh was commonly seen as both incongruous for the many who simply want to replicate what was lost, and extremely difficult where a multiplicity of donor agents, government departments, international and national NGO's, along with concerned communities and individuals, promote a range of solutions all of which required sure footed strategic action to facilitate real difference, amidst conflicting interests and agendas.



Superimposed graphic indicates previous strandline and river alignment, the extent of coastal loss combined with the effect of blocked river inundating previous rice paddy and aquaculture areas in west coast, Aceh.

PROJECTS AND GRANTS

NATIONALLY COMPETITIVE GRANTS

Extension approaches to scaling out livestock production in northern Lao PDR. ACIAR (\$400,000) Dr Joanne Millar, CSU and Dr Tienne Vannasouk, NAFES, Lao PDR. (2007-2010)

Northern connections – movement of birds between Australia and its near northern neighbours. ARC Linkage (\$520,000) Partners - Department of Environment & Heritage, Agriculture Fisheries & Forestry Australia, Australian Quarantine and Inspection Service. Dr David Roshier, A/Prof R Heinsohn (ANU), Dr LG Joseph (CSIRO) (2007-2009)

Sustainable development in our backyard: maximising biodiversity conservation where people live. ARC Discovery (\$323,000) Dr Gary Luck. (2007-2009)

RESEARCH GRANTS

Investigation of movement of grey teal (*Anas gracilis*) in northern Australia and Torres Strait with particular reference to transmission of zoonotic avian diseases. Department of Environment and Heritage (\$130,000) Dr David Roshier (2006-2007)

Social Dimensions of Plantation Expansion in North East Victoria Plantations North East Inc. (\$20,000) Hugh Stewart, Dr Digby Race, Prof Allan Curtis. The main objective of this research project (concentrating on the Towong Shire) is to support plantation expansion towards a goal of 25,000 additional hectares from 2006 to 2020 in the 13 municipalities of north-east Victoria. Interviews will be conducted with people drawn from landholders, forest industries, CMAs, local government and agency staff, to provide insight to the attitudes of the community regarding land use change to forestry in economic wood supply zones. From this a focus group will construct scenarios on the way commercial forestry might develop in the future. (2006-2007)

DIRECTOR'S ACTIVITIES

The last three months has seen the Institute director Prof Allan Curtis involved in meetings, conferences, workshops and presentation. Highlights include:

- Meetings with the Bathurst Regional Council to develop collaborative research projects addressing the Council's needs related to water supply planning and delivery for the next 20 years (also attended by ILWS members Shahbaz Khan, Mark Morrison, Daryl McGregor, Rod Duncan and Tariq Rana); with members of the Institute's Centre for Rural Social Research discipline group; and with the Australian Government's Department of Agriculture, Fisheries and Forestry (DAFF) and the Great Artesian Basin Sustainability Initiative (GABSI) Coordinating Committee, to scope a research project evaluating the GABSI (piping and capping of bores).
- Presentations to the Corangamite Catchment Management Authority (CCMA) on the future of Landcare and the engagement of new settlers by Landcare and the CCMA; in response to a request by Joanne Millar and ILWS Advisory Board Member, Cathy McGowan, to Indigo Shire's Rural Planning Issues workshop at Rutherglen on the implications of demographic change for rural planning (one outcome is that Jo Millar is coordinating a joint ILWS/ Indigo Shire workshop to explore ways Councils can maintain landscape values); to a Southern Rivers CMA staff workshop at Delegate explaining the Institute's research capacity and work underway with others CMAs.
- Presentation at CSUs internal conference on *Maximising Opportunity and Managing Risk* at Bathurst and Wagga where he presented the ILWS business model and governance arrangements to senior staff from CSU Divisions.

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