International Research
Our researchers have certainly been active on the international scene of late with major projects underway in:

• Pakistan - a multi-partnered groundwater management project. More on page 6

• Bhutan - a project to protect red pandas and herders’ livelihoods which was launched last October. More on page 5

• Laos - where a large fish passageway conference was held as part of a major project quantifying improved fisheries productivity at fish passage rehabilitation sites in that country. More on page 12

• and a scoping visit to Timor Leste, for a reforestation project proposal More on page 16

Opinion
What has eating spaghetti with chopsticks got to do with science, one may ask? That’s what it is like for inexperienced computer users trying to communicate with their overseas counterparts in international research projects according to Dr Wes Ward. Read more on page 18.
I’d like to welcome all our readers back to their workplaces and sincerely hope that 2017 brings you opportunities and success in your research endeavours, and that it is fun and enjoyable.

Not only is it a new year which I consider as an opportunity for all of us to contemplate, or even cogitate, about ourselves and our associates and the research we have undertaken or would like to undertake, but I also see it as a time to rejuvenate our approaches and direct our energy and emotions towards positive relationships and outcomes.

I am sure our psychologists and wellbeing experts could analyse that and offer advice on not only how to express it, but also how we could ensure we follow through and have a profitable year, and to do so without single-mindedly delving into measures of research quantity and quality. The latter will come (inevitably given our employment and positioning in time) as will measures of ‘impact’, but in this case I wanted to focus on the individuals and teams that comprise our workplaces and make a statement about the next phase of our research.

We have another 5 years as ILWS within the CSU research structure, and we have further guidance on what is expected. My reading of that is that we are not being supported to simply carry on as before – there are high expectations that come with the privilege of being one of four research centres within the university. To meet these we have first renewed our membership, or more accurately, we are renewing our membership. A process is underway to confirm who will be part of the next iteration of ILWS, and to welcome returning and new members alike.

If you have colleagues who may be interested in being part of ILWS please direct them to the ILWS strategy and membership documents on the web page, and encourage them to come and talk about their interests. We cannot be everything to everyone but we can certainly talk to those who are interested.

We have also been asked to look specifically at our ‘society’ research and determine whether we are really doing this justice and hence, what we may do differently or maintain. This is a great opportunity and my own belief is that CSU and our communities will benefit from an enhanced effort on what is quaintly and over-simply labelled “society” research.

We’ve also been asked to look at our links with research related to agriculture – this does not mean that we should move towards doing the agricultural research (we have competent researchers elsewhere in CSU to do that) but as we live in social-ecological landscapes that are inexorably shaped by agriculture (in its many forms – and that in itself is a tricky discussion with many nuances, if not differences) and dependent on agriculture, it makes sense to myself that we would be expected to have those links, and that they should be tangible, not superficial or handy badges (in the sense of window dressing).

That leaves us with an interesting set of discussions and ideas to share and embellish through our renewed membership, and with all members given the opportunity to be heard. That process has both an informal and formal part. The former is there in many shapes and forms. The latter is being reconsidered, as indicated in the documents etc tabled during the accreditation processes, and is also open to sage advice and new ideas.

While writing this I have contemplated my first week back in the office. What did I do?

Catching up on the mass of email traffic aside I tabled three completed manuscripts and wondered where I’d get time to do the many others I’d like to get done, and those that co-authors are ‘screaming’ at me to get done.

I also completed the paperwork for a PhD thesis completion, and checked on a couple of others about to enter the examination process. Seeing a student submit and then complete the examination process and graduate is one of the real joys of being at a university – it’s a real badge of achievement for the student and for the institution. And then you have applications from new candidates, and those horrid forms we are asked to complete!

Several grant applications were sitting waiting for the online forms to be populated, and with a team of people involved in each one. The latter is what I like – having a team that is searching for the same outcome, and helping with the documentation.

Then I had a drive down along the Murray to talk about follow-up activities to the ‘biocultural knowledge’ workshop we held in Albury late last year, with the Murray LLS, and to immediately be asked what did we mean by biocultural knowledge, or traditional ecological knowledge, and was cultural the same as social knowledge, and then the real nub, were our water planning and national instruments working for indigenous communities.

Others are also asking if they are working for our farming communities. And others again are asking if they are working for the riverine systems that both dissect and connect our landscapes and communities.

Coincidently, one of the aforementioned manuscripts addressed part of those questions, and my answer was ………That is not for this article to answer, but it was not nuanced and laced with conditional statements, and definitely did not end with a statement along the lines of “This information will be useful for managers to …….”. How many times have I read that at the end of a manuscript? And how often did I write that myself?
In an era where impact beyond academia is coming to the fore I accept that I can certainly do better than that, and would love to discuss that with yourselves, as well as the many other things we should and could do in 2017.

Welcome not only to a new year for ILWS, but also to engaging and constructive discussions around our world views.

Recent Grants

External grants

Shark deterrents and detection: Community perceptions, sentiment and preferences for shark management strategies. (2017) Simmons, P., Mehmet, M. & Clarke, R. (UOW) A collaborative project between CSU, UOW and NSW DPI with funding from the NSW Shark Management Strategy (SMS) Competitive Annual Grants Program


ANDS Collection Enhancement Project. (2017) Finlayson, M. Monash University ($30,000)

Koondrook-Perricoota Floodplain Runoff project. (2016-2017) Watts, R., Howitt, J. Forestry Corporation of NSW ($49,501), ILWS and CSU’s Faculty of Science

Shark Sentiment Study. (2017-2020), Simmons, P., Mehmet, M. NSW Department of Primary Industries, $91,000

New Projects

Farmers Screen


Australia’s food bowl, the Murray-Darling Basin (MDB), has thousands of kilometres of irrigation gates, pumps and diversion devices. These are constructed and serviced by a specialised water-control advanced manufacturing sector.

But MDB diversion technology kills fish, entrains debris and is water inefficient; lagging behind world best practice. These deficiencies have led to a $1.575 billion investment to upgrade irrigation infrastructure by June 2024. The upgrade will replace outdated and inefficient irrigation infrastructure with new and innovative designs that have a reduced environmental footprint.

A for-profit branch of the Farmers Conservation Alliance (USA), is licensed to market a “Farmers’ Screen”; a water delivery structure designed to protect fish, minimise debris and deliver water efficiently. The screen reduces operation costs for farmers and is environmentally sustainable. There is no equivalent solution on the Australian market at present. The farmers screen could be rolled out as part of irrigation infrastructure upgrades. The screens are at commercial readiness level 3 in the USA but remain untested in Australia.

CSU will work with FCA to construct an Australian prototype in collaboration with industry partner AWMA Solutions in Cohuna, Vic.

Finding the Mekong salmon


Migratory species in the Mekong River, many which provide substantial food security and economic benefits, are expected to decline in the next 20 years. It has been long suspected that many large upstream migrants possibly originate from the ocean.

If this is true, then the planned six future mainstem dams will effectively destroy whole species by blocking access to critical habitat. If hard data on fish migration can be obtained now, there is a substantial opportunity to either stop these dams, or ensure they incorporate adequate fish migration facilities. Once the dams are built, it will be too late.

More next page
Up until now, it has been assumed that most Mekong fish spawn everywhere and that fish don’t need to reach the ocean.

“Our proposed work will test whether these assumptions are true,” says Dr Lee Baumgartner. “We expect that, like other major rivers globally, some species will need to connect with the ocean. Pilot information has indicated that this is the case, but it needs to be validated on a larger scale. If consistent patterns emerge, then it will provide essential information to protect fisheries from hydropower.”

ILWS will partner with the Research Institute for Aquaculture in Vietnam (No 2) to implement this important regional project.

Shark study

Shark deterrents and detection: Community perceptions, sentiment and preferences for shark management strategies. (2017) Simmons, P., Mehmet, M. & Clarke, R. (UOW)

A collaborative project between CSU (ILWS), UOW and NSW DPI with funding from the NSW Shark Management Strategy (SMS) Competitive Annual Grants Program

This project, which began this year, is using social media and interviews to explore approaches to shark management in populated coastal areas.

Associate Professor Peter Simmons and Dr Michael Mehmet have teamed up with Associate Professor Rod Clarke from the University of Wollongong’s (UoW) to analyze content on social media platforms relating to sharks and management strategies, and conduct interviews with individuals and stakeholder groups along the NSW coast.

“Sharks and shark management on our coastline have become increasingly topical, and this research will help NSW Department of Primary Industries understand community sentiment concerning coexistence with sharks and strategies for managing sharks,” says Peter.

“We aim to understand people’s attitudes, what influences their attitudes and what circumstances influence attitudes to different management options. The better we understand community attitudes and beliefs the more effectively the department can represent those attitudes, and the more purposefully the department can communicate about the different options.

“Ultimately, it’s about reducing the risks to surfers, bathers and other ocean users, and minimising harm to other species.”

The study is employing approaches to analysing social media using communication theory that has been pioneered by Professor Clarke and developed in joint work with Michael which analyses ‘multimodality’ in social media i.e. the ‘sentiment’ being expressed through the interaction of words, images, emojis, and other aspects of online exchanges.

“Great white shark

surfers, bathers, tourism operators, local government, lifesavers and others.

“Our aim is to develop deep insights into different stakeholder perspectives, where they come from, and how they are evolving and influenced.”

*The project is part of an on-going national and international research project providing evidence and guidelines supporting human-wildlife coexistence policy and management with a focus on communication. It links three Australian and three Malaysian universities.

Updates on current projects

Empowering social workers


The project aims to analyse and develop core virtues of social workers to strengthen the social fabric of individuals, families and communities.

The first phase of the project which involved in-depth narrative interviews of leading social workers across Australia, analysis of qualitative data, development of ten biographies of social workers and a two day workshop to discuss the virtues of social workers has been completed.
As planned, the first phase of the project has yielded an edited book entitled *Empowering Social Workers: Virtuous practitioners*, consisting of 12 chapters, to be published by Springer in April 2017. All contributors have recently completed the proofs and waiting for the published book to be disseminated extensively.

In the second phase of the project Chief Investigators have completed the national level data collection work from the following set of respondents:

- social work practitioners
- social work supervisors
- social work ethics educators
- social work ethics curriculum

“Data analysis of each of the four sets of data is in progress and the CIs expect to complete final report of the project in 2017,” says Professor Pawar who leads the project.

**Panda Project Launch**

by Institute Adjunct Dr Jo Millar

Sustainable rangeland management to protect red panda and herder livelihoods, Millar, J., Finlayson, M., & Tenzing, K. (2016-2019) Darwin Initiative Fund, $540,000

On a crisp sunny morning in late October 2016, the Merak village hall in remote eastern Bhutan filled with yak herders, their children, parks rangers, livestock staff, local dignitaries and lamas from the local temple. The occasion they were attending was the launch of a new project to protect high altitude rangelands, yak herder livelihoods and red pandas. The project led by Drs Joanne Millar and Karma Tenzing from CSU, is funded by The Darwin Initiative Fund, UK and will run until May 2019.

The newly elected local mayor (Lam Rinchen) started proceedings with the ceremonial bowl filled with fermented maize brew. He lifted a cup filled with the brew above the bowl and chanted blessings. The lamas beat drums and chanted from their ancient prayer books. Offerings were passed around in the form of yellow rice, fruit and biscuits.

A senior government official gave a speech followed by the Chief Ranger of Sakteng Wildlife Sanctuary (Thinley Wangdi) and Director of the Regional Livestock Development Centre (Tsering Dorji). After cutting the ribbon in front of the banner, the local ladies entertained with their beautiful singing and dancing.

Just when we thought it was over, a loud drumming came from outside the hall. In came a large dancing yak surrounded by masked dancers. The yak reared and bowed to the dignitaries whilst his dancers performed the famous Yakcham dance only bestowed on important occasions. We felt blessed indeed!

After the project launch, Dr Karma Tenzing ran group dynamics courses for yak herders to build their organizational and conflict resolution skills. A household survey was also conducted with 75 herder families to collect baseline data on their livelihoods, aspirations and knowledge of red pandas. Dr Joanne Millar and social forester, Norbu Yangdon, talked to students at Merak primary school about red pandas and showed a documentary.

Future project activities and outcomes will include:

- Land rehabilitation and reforestation over 400 hectares to control landslides and improve red panda habitat
- Improved livestock management through improved pasture and fodder trees.
- Biogas trials to reduce firewood consumption
- Red panda research and education to increase understanding of red panda status and conservation

You can follow stories on the project blogsite at [https://redpandabhutan.wordpress.com/](https://redpandabhutan.wordpress.com/)

Contact: Dr Joanne Millar, [jmillar@csu.edu.au](mailto:jmillar@csu.edu.au) or Dr Karma Tenzing, [ktenzing@csu.edu.au](mailto:ktenzing@csu.edu.au)
Groundwater Management Project in Pakistan Underway

Institute researchers are involved in a major project underway in Pakistan which aims to improve groundwater management in that country. For this issue of Connections, we spoke with Associate Professor Catherine Allan and Dr Michael Mitchell, who are part of the project’s coordinating team leading and managing the project, to find out more about the project.

The other members of the team from CSU are Institute Director Professor Max Finlayson (Project Director), Dr Richard Culas and Institute Adjunct Professor Jay Punthakey.

The project is one of a suite of Australia-Pakistan water management research projects, funded by the Department of Foreign Affairs and Trade (DFAT) and Australian Centre for International Agricultural Research (ACIAR).

Improving groundwater management to enhance agriculture and farming livelihoods in Pakistan (2016-2020) Finlayson, M., Allan, C., Mitchell, M., Culas, R. & Punthakey, J. ACIAR, $2.15m

The “Groundwater Management project” is complex and exciting. Not only has the four year transdisciplinary research project attracted a significant amount of funding from ACIAR; it involves 13 partner country project leaders and their institutions; is very much a project that is being developed “from the grass roots up”; and it could inspire a new way of doing Australian aid funded research and development projects in the future.

“What is exciting about this project is the partnerships/collaborations,” says Associate Professor Catherine Allan. Michael agrees. “I think the degree of participation we’ve got from the partners is remarkable,” he says. “It shows a commitment to doing things in a participatory way, and an understanding of what it means to do participatory research.”

The fact that participatory research was written into the proposal and accepted by the funders meant that participation isn’t an “add-on” according to Catherine. “It’s the heart of what this project is,” she says.

“Having the agencies is crucial as is the way we are working with them,” says Michael. “The heads of the agencies are on-board with an understanding that they and their staff will have opportunities to learn how to manage irrigation in a more collaborative way. A significant component involves modelling, and the way that we are delivering the

At one of the sites (above) visited during the Shaheed Benazirabad field trip, leakage from the nearby irrigation canal has raised the level of saline groundwater, undermining the productivity of local farmers. The locally leaked water is being pumped back into the canal, helping to lower the groundwater table.”
modelling is to engage our partners in model development so that in the end, they will own and use the models. This also requires significant investment in capacity enhancement for staff in these irrigation agencies and our other university partners.”

Catherine says that while the Irrigation Departments have high levels of technical skill in surface water management, there are gaps in information and skills required to better manage groundwater in Pakistan.

“There are skills to share, and the approach we are using will help get people out of compartments – modellers aren’t just modellers, groundwater managers aren’t just groundwater managers – they are part of the society that is coming up with solutions,” she says.

“The project is working in three small case study areas but provides a test of how these kind of projects could be done differently in the future elsewhere in the world.”

The project aims to tackle the critical issue of groundwater over-extraction in Pakistan which is threatening the livelihoods of millions. It will do this by developing groundwater management tools and options, drawing on practical experience in three case study areas in three different agro-ecological settings:

- The Lower Bari Doab in Punjab.
- Pishin Lora Basin in Balochistan.
- The Shaheed Benazirabad (formerly Nawabshah) and Khairpur Districts of Sindh

Michael says that having the agencies leading the initial period of co-enquiry with people in the case study areas, means that rather than impose a design, land managers, NGOs, agency staff and researchers are being involved in designing the research project case studies.

“So the process is an outcome, along with the more traditional outcomes we are expecting for groundwater management,” says Catherine. “There will be different impacts from this project, one of which we are hoping will be a more inclusive way of developing these kinds of projects.”

The project has high level partners such as Dr Ashfaq Ahmed Sheikh, the Director General of the Pakistan Council of Research In Water Resources, the lead government-funded water-related research organisation in Pakistan.

The other partners are the University of Agriculture, Faisalabad; PMAS Arid Agriculture University; Sindh Agriculture University; Mehran University of Engineering & Technology; NED University of Engineering & Technology; Balochistan University of Information Technology, Engineering & Management Sciences; Punjab Irrigation Department; Sindh Irrigation Department; Balochistan Irrigation & Power Department; International Waterlogging & Salinity Research Institute; and the International Center for Agricultural Research in the Dry Areas.

The planning involved in getting the project underway has been considerable. Two workshops to develop the proposal were held in Lahore and Faisalabad. Then, once the proposal had been approved by ACIAR, a four-day inception workshop was held in August/September last year at the University of Agriculture, Faisalabad, Pakistan (as reported in the November 2016 issue of Connections).

A fourth workshop was held at the end of last November at Mehran University, in Sindh Province, to set up the process of having the case study research designed with partners and other collaborating organisations in the case study areas. The intention was to prepare a series of Participatory Rural Appraisals (PRAs), where teams would visit villages and other places to learn about needs and priorities, and how the research project could respond.

On the first day of this workshop the Australian team members ‘trained’ the project team members who were developing the PRA teams. These team members then facilitated the activities over the next two days mostly using Pakistan’s national language, Urdu. Three provincial based PRA teams were developed, with different approaches tailored to suit each of the different provinces/case study areas. The project team then had the opportunity to visit the project’s case study area in Sindh.

While the PRAs and other research activity continue, the next major activity was the official Project launch held in the nation’s capital, Islamabad on January 31. This was a combined launch of all 3 water-related projects in Pakistan funded by ACIAR. A report on the launch and further workshops will be in the next issue of Connections.
Indigenous fire management

Can Indigenous fire management restore mammal communities?

Can Indigenous land management foretell an extinction crisis?
Nimmo, D. (2017-2020) ARC Discovery Early Career Researcher Award, $372,000

As a result of his success in securing an ARC Discovery Early Career Researcher Award, Institute ecologist Dr Dale Nimmo (pictured above) now has three years to really focus his time and energy on what will be, no doubt, a most fascinating but also challenging research project.

The project will allow Dale to build on the Hermon Slade Foundation grant he secured last year for the same work. The project, with a focus on the Martu people who live in the Western Desert in WA's Pilbara region, will look at the Indigenous burning regimes and the effects on biodiversity.

(The Western Desert is described as a cultural region in central Australia. It covers about 600,000 square kilometres of arid Australia in the Northern Territory, South Australia and Western Australia. The Martu have Native Title rights over a huge area – 13 million ha – surrounding Karlamilyi National Park.)

"The question is can Indigenous burning restore biodiversity in areas where it [Indigenous burning regimes] has long been abandoned," says Dale. "There are large areas in the Western Desert that, since European colonisation, have seen Indigenous people taken from or leave the land so there are now really large areas throughout the deserts where no-one lives."

As a consequence, when these desert areas experience fires (which is often as it is a fire prone system), the fires are enormous, really hot and burn vast areas as the fuel loads are not being managed.

"We know that, particularly in the Western Desert, Indigenous people burn in a particular way that promoted diversity of fire ages; so putting lots of fire into the landscape but in the cooler months so the fires are of lower intensity, cooler and smaller and create a diversity that helps provide for a whole range of species out there," says Dale.

"Whereas when you don’t have these smaller fires occurring, you get these large fires which homogenise the landscape. When those big fires happen it also removes all the refuges and the little bits of habitat that species require to avoid being killed by predators. When you add foxes and cats into the mix, it becomes even more difficult for native species to survive."

Dale says the Martu people, one of the Indigenous groups living in the Western Desert, have been selected as the focus for the project as they have a long, relatively unbroken history on the land and are still burning some of the land in the way their ancestors would have burnt.

"Therefore there is an opportunity to go out there and see what the fire regime looks like and how the biodiversity there compares to areas nearby that don’t have that same fire regime history," says Dale. "We will be comparing areas that are still being managed with areas that haven’t been managed for up to a century."

In February, Dale will be visiting Pennsylvania State University in the U.S. to meet with American anthropologists Assistant Professor Doug Bird and his wife Professor Rebecca Bird, his collaborators on the project, and to begin planning. The pair have well-established relationships with the Martu which they developed as a result of many visits over the past decade.

“They are interested in how Indigenous people use the land” says Dale who will be meeting the pair for the first time when he visits. “While they are technically anthropologists, they definitely think about and work on ecological issues.”

Dale is planning his first site visit in June/July this year. “It will be a steep learning curve for me,” says Dale who has done little work in Western Australia and with Indigenous communities before.
Enhancing the resilience of biodiversity


This project is building on long term data on avifauna from 24 study landscapes during south-eastern Australia’s “Millennium Drought” (2001-2009) which looked specifically at the influence of the drought on woodland birds in Box Ironbark forests.

Its objectives are to:
• Document the extent of recovery of regional avifauna six years after the breaking of the extreme drought by re-sampling the original 240 sites within the 24 study landscapes. The study area encompasses 20,500 square kms of north-central Victoria.
• Examine patterns in the rates of recovery to test whether landscape structure enhances the resilience of the avifauna, specifically testing whether the extent of vegetation in riparian zones in a landscape facilitates long-term recovery; or whether greater influence is associated with other components of landscape structure (e.g. overall extent of remnant forest and woodland, composition of land uses.)

For this project an ornithologist, Gary Cheers, has been engaged to do the bird surveys at all the project sites. “Gary has completed two of the four rounds he needs to do, which means he has done 580 bird surveys in the Box Ironbark forests from Wodonga down to about St Arnaud in central Victoria,” says Dale.

A research assistant, Dimity Bambrick, is entering the data.

“It is too early to say in terms of what we are finding out but it’s particularly interesting as we’ve had droughts and then floods,” says Dale. “We had such a huge wet year last year that there should be recovery in the bird fauna if it ever was going to happen, it is going to happen now. If it hasn’t happened then we will be pretty alarmed. Woodland bird numbers have been in decline for a long time.”

The birds were surveyed last spring into summer with another autumn into winter survey to come.

Growing cities and biodiversity


Dale says the project, which began at the start of the year, is looking at when a city like Albury or other regional city grows as its population increases what is the best way to accommodate the growing number of people living within the city’s boundaries while minimising the loss of biodiversity.

The project will use birds and pollinator surveys as a measure of biodiversity. Currently Karen Retra is surveying 32 different landscapes in Albury.

Dale says the landscapes have been selected according to how many people live in them.

“So from areas where you have really high concentrations of people, as high as you can get in Albury, to low density suburbs, conservation reserves and farmland,” he says. “The idea is, as you add people to the landscape, how does biodiversity respond? There is a presumption that things like birds will decline as you add more and more people as the blocks of land get smaller and there’s more concrete. But that doesn’t necessarily mean that packing people in isn’t the way to go about growing cities. If you can pack people into a smaller area, then you can offset some land for nature conservation.”

The question was “is it best to share land with wildlife by having lower-density, leafy suburbs or should we spare land for wildlife by having reserves and high-density living?” Karen is doing the pollinator surveys and research assistant Dimity Bambrick will be doing the bird surveys in winter this year.

“We will then look at scenarios for the growth of Albury into the future, into 2050, and, as we keep adding people, what would be the best way of doing while protecting biodiversity,” says Dale.

The project ties in with Dale’s interest in landscape ecology and how big-scale disturbances like fire, drought, land urbanization or clearing, agriculture, that happen at a regional scale, affect biodiversity.

Students

Dale is the principal supervisor of a new ILWS PhD student, Harry Moore, who is to start in March this year. His work will focus on Northern quolls in the Pilbara. His Honours students include Carlin Webster who is working on lizards, and Kaitlyn York, who is studying rock wallabies and is based in Alice Springs.
Institute Events

Biocultural Knowledge Workshop

A biocultural knowledge workshop organised by the Institute with support from Murray Local Land Services was a great opportunity for those with an interest in the biocultural values of wetlands and rivers to get together, listen to some presentations, share knowledge and network.

Twenty four people attended the workshop at Wonga Wetlands, Albury, on Tuesday, December 6 with representatives from CSU and the Institute, Murray Local Land Services, Murray Lower Darling Rivers Indigenous Nations, Federation of Victorian Traditional Owner Corporations, Murray-Darling Basin Authority (MDBA), Macquarie University, University of Western Sydney, and NSW Office of Environment & Heritage.

The workshop included presentations from:
- Neil Ward, (MDBA) on “MDBA Aboriginal Partnerships”
- Dr Emilie Ens, Macquarie University on “Mapping documented Indigenous biocultural knowledge”
- Dr Jessica Weir, University of Western Sydney on “Biocultural knowledge practices”

Samantha Strong, ILWS, also presented a Draft Research Inventory on “Biocultural knowledge of aquatic resources in the Murray River region” which participants were invited to add to. The inventory was the focus of the afternoon’s discussion.

“While there is a lot of project/program activity with traditional owners there appears to be little co-research activity,” says Associate Professor Catherine Allan, who was the facilitator on the day. “This is an articulated need, and one which this group [those in attendance] could seek to serve. The focus on ‘biocultural research’ is a particular point of difference.”

Suggested uses for the inventory included using it as:
- a conversation starter around the links in values/interests between traditional owners and academia
- a relationship building tool
- a place based conversation starter with traditional owners
- a repository for Traditional Owners, e.g. vegetation database, inter organisational learning, local research back to local people

Possible next steps identified by the workshop participants including sharing, co-

design, partnering and links with teaching.

“We don’t really know what we are creating yet but the group agreed it is appropriate for CSU, with MLLS, to host and continue to initiate activities as we explore our way towards a support platform or practitioner network of some form,” says Catherine.

Institute Director Professor Finlayson, who attended the workshop, says that personally he was very pleased to join the meeting, to listen to the invited speakers and other participants, and thankful for the opportunity to be part of the project.

Workshop participants

Rene Woods, Murray Lower Darling Rivers indigenous Nations

Dean of CSU’s Faculty of Science Professor Tim Wess and Trish Bowen, Murray LLS

“We are looking at holding another meeting in April with one idea being to look at how we can develop more co-research activity. But first we need to talk to interested individuals and organisations and get/share ideas.”

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The Institute is keen to look for further opportunities to work with indigenous people and in particular develop further co-research which includes continuing the inventory work we’ve started with the MLLS,” he says.

Dr Emilie Ens

One of the participants in the workshop was Dr Emilie Ens (pictured above), a cross-cultural ecologist from Macquarie University.

“I made it [cross-cultural ecologist] up myself,” laughs Emilie but the descriptor is apt for a researcher who combines an interest in ecology with cross-culturalism, in particular Indigenous issues.

Emilie, who did her undergraduate studies and Honours at UNSW, did a PhD in plant ecology (on the weed bitou bush) with the University of Wollongong. Her first post-doc position was with Charles Darwin University in the Northern Territory where “my eyes were opened to Aboriginal Australia. I had never really been exposed to some of the social justice issues Aboriginal Australians experience before.”

She then got another post-doc position as an ecologist on a multi-disciplinary research team working with Aboriginal communities in Arnhem Land at the Centre for Aboriginal Economic Policy Research (CAEPR) at the Australian National University.

“It was fantastic,” says Emilie. “CAEPR is a really quite a large multi-disciplinary group made up of anthropologists, economists, political scientists, linguists, education specialists and more environmental scientists like myself. “It was a melting pot of minds and ideas focussed on working with Aboriginal Australians.”

For five years Emilie worked at CAEPR on the “People On Country” project, funded by the Myer Foundation. The project documented the multi-disciplinary outcomes of Aboriginal land and sea management.

“Through that project, which ended in 2012, I established quite deep relationships with a number of Aboriginal communities in Arnhem Land,” says Emilie. “To this day I continue to work with them, seeking funding from a range of sources to continue to develop cross-cultural environmental research projects.”

In 2013 Emilie secured an ARC Discovery Early Career Research Fellowship and moved to Macquarie University’s Department of Environmental Sciences where she continued her interest in cross-cultural environmental research, mainly looking at impacts on freshwater wetlands. In 2012 to 2014, as a side project, Emilie established the Indigenous Biocultural Knowledge (IBK) Working Group with 20 colleagues through the Terrestrial Ecosystem Research Network’s (TERN) Australian Centre for Ecological Analysis and Synthesis (ACEAS). Over two years the IBK Working Group developed a website which publicised their collection of publicly available documented material on Indigenous biocultural knowledge.

The website Australian Indigenous Biocultural Knowledge, http://aibk.info/, presents the information in a spatial database. (The working group won the 2014 Banksia Award for Indigenous leadership and Sustainability for this project.)

“Some things we couldn’t put on the map because the information was not place-based so we have separate lists for that,” says Emilie. “But the map is really cool because it helps to identify hot-spots of activity and places where knowledge hasn’t been recorded (and in the public arena).”

The two main project Emilie is currently working on are:

• A project with The Nature Conservancy to support young women in conservation in south-east Arnhem Land
• A project with the NSW Government, the Firesticks Initiative and Minyumai and Ngunya Jar-goon IPA to develop cross-cultural environmental monitoring tools for Indigenous Protected Areas in NSW

Emilie says she took part in the CSU Biocultural knowledge workshop to share some lessons learnt from creating the Australian spatial data-base and hopefully inspire other people to follow a similar process and to meet others working in a different part of Australia where she hasn’t worked before.

“I can see particular value in working on a smaller scale, like the Murray River corridor so you can get not only more detailed information but also more involvement with local traditional owners,” says Emilie.

“It's not just about the documented knowledge but also the living knowledge; it's about bringing it altogether to support natural and cultural values and raise awareness about the importance of Aboriginal involvement and knowledge in natural resource management and decision-making.”

(L to R) Sam Strong, Will Mooney, ML-DRIN, A/Prof Catherine Allan and Dr Jim Birckhead
Conferences, workshops, seminars

Fish Passage Conference in Lao

Drs Lee Baumgartner, Wayne Robinson and ILWS adjunct, Dr Craig Boys participated in the Lower Mekong Fish Passage Conference: Applying Innovation to Secure Fisheries Productivity. The conference was held in Vientiane, Lao PDR, Nov. 14 to 17, 2016. It brought together global experts in the fields of riverine development, fish passage and aquatic ecosystem management to demonstrate how applied research can be used to enhance policy and decision-making across the LMB.

Over 150 delegates participated including government officials, developers, researchers, local provincial and district leaders and natural resource managers. Fourteen countries were represented and experts from around the world shared their experiences across 25 years of fish passage research.

The event was supported by the Australian Ambassador to Lao PDR, John Williams, many ministers and vice ministers from Lao PDR, Vietnam, Myanmar and Cambodia. In addition to the formal presentations and discussions that took place at the Lao Plaza hotel, over 100 of the delegates participated in a field trip to the Pak Peung wetland, where ACIAR has supported ground-breaking fishway research.

The field visit allowed delegates an opportunity to learn from the success of the work at Pak Peung and also offered Lao and Australian researchers involved a chance to communicate their work to a global audience. The success of this work has already led to 10 new fishways in Lao PDR, including further assessment of the socio-economic and environmental benefits of tropical fishways.

Also at the conference was Visiting Academic Professor Luiz Silva from the Federal University of Sao Joao del-Rei in Minas Gerais, Brazil. *The conference was part of the Australian Centre for International Agricultural Research (ACIAR) Quantifying improved fisheries productivity at fish passage rehabilitation sites in Lao PDR project. It was supported financially by ACIAR ($95,000) and the US Agency for International Development ($83,000 USD) and built on a previous fish passage conference hosted by the Lao government in 2013.*

In addition to the formal presentations and discussions that took place at the Lao Plaza hotel, over 100 of the delegates participated in a field trip to the Pak Peung wetland, where ACIAR has supported ground-breaking fishway research.

Awards

Congratulations to Visiting Academic Professor Luiz Silva, the recipient of a 2017 Brazilian national sustainability award for his work on a project that aims to mitigate the impact of hydro-turbines (hydropower) on fish mortality.

Luiz, on sabbatical from the Federal University of Sao Joao del-Rei (UFSJ) in Minas Gerais, said it was the 9th year that one of the major construction companies in Brazil, Odebrecht, had given out the award for projects that support sustainable development i.e. help offset the impacts of construction or engineering development by contributing to environmental conservation.

To be eligible for the Odebrecht Award for Sustainable Development, the project needed to involve undergraduate engineering students. “We developed a methodology to study and thereby mitigate the impacts of hydro-power on the mortality of fish,” says Luiz. “It is a national award which shows industry has an appreciation of our project.” He says the award, valued at around $30,000, would be divided between his university, to further invest in the project; the students involved; and himself.
Professor Nick Davidson

He describes himself as being “semi-retired” - but former Deputy Secretary General of the Ramsar Convention on Wetlands, Institute Adjunct Professor Nick Davidson, still seems as engaged in international wetlands policy and management as ever.

Nick, who, in autumn 2014 formally ended working for Ramsar after nearly 15 years, was in Australia for a short visit in November last year during which time he attended a meeting of Associate Editors of the journal Marine and Freshwater Research in Melbourne, and met and worked with colleague Institute Director Professor Max Finlayson, Editor-in-Chief of the journal.

“I’m now working independently on issues to do with wetlands that really interest me and where I feel I can make a real contribution and difference to as a result of the experience and expertise gained from my work with Ramsar,” says Nick. “For example we are currently working in the Republic of Myanmar (formerly Burma) on a big Norwegian Government funded project for protected areas which has a major wetland component.”

Nick is one of a three-person Ramsar expert team which has been brought in to help support the government of Myanmar with capacity building, planning and training for site managers, developing national wetland policy, a comprehensive wetland inventory and a strategy for the future designation of Ramsar Sites (Wetlands of International Importance).

“It’s very much the core business of implementing the Ramsar Convention that countries need to be doing but often don’t have the capacity or the knowledge of how to do it - so we are bringing in that supporting expertise,” says Nick. “The assistance we are providing is for the whole country but also with a focus on two specific wetlands (Moeyungyi and Indawgyi), Myanmar’s two designated Ramsar Sites for which management plans need developing.”

The team have visited Myanmar twice so far in 2015 and 2016 and have prepared an Action Plan which has been approved by the Myanmar and Norwegian governments. Implementation is starting in 2017.

“It’s a great example of where, with some support from a donor government, you can really, for not a huge investment of funds, start making a big difference,” says Nick.

While attending the 10th INTECOL international wetland conference in China in September last year Nick met with representatives from the Democratic People’s Republic of Korea (DPRK). He says the DPRK is expressing keen interest in joining the Ramsar Convention.

“The sort of issues they listed as needing help with are very much the same as what we are now doing in Myanmar,” says Nick. “We have a strong sense that the package of support activities we have developed for Myanmar is very transferrable to other countries.”

Nick and Max are both members of the Society of Wetland Scientists (SWS) Ramsar Section, which Nick currently chairs.

“From discussions in the Ramsar Section a couple of years ago we identified there was a big gap in Ramsar’s knowledge-base and that was what is the state of the world’s remaining wetlands?” says Nick. “We’ve done the work, now published, on trends in the loss of wetlands but there is no clear, compiled or available information on our remaining wetlands.”

Following on from two SWS symposia and a workshop on “Assessing and reporting wetland status and trends: issues and challenges that Nick co-led at INTECOL, the need has been identified for a project to be developed designed to improve access to state of wetlands information and reporting it into Ramsar processes.

“One of the reasons I was in Australia, with support from the Institute, was to do some development of this SWS Ramsar Section-led project, which includes developing a citizen-science approach through a simple questionnaire,” says Nick. While here he also met with Institute adjunct Dr Mariagrazia Bellio to benefit from her experience of developing such qualitative questionnaires and how to analyse the responses.

“The other reason for coming to Australia was to free up some much needed writing time on a series of papers which I’ve had on my books for some time,” says Nick.

They include:

- A paper for a Marine and Freshwater Research “Research Front” on wetland assessment issues, which reviews the adequacy of Ramsar reporting mechanisms and trials a new indexing approach for clearer reporting on the status of the world’s remaining wetlands;
- A review of the global extent and distribution of wetlands;
- An analysis of the extent of the implementation of the Ramsar Convention by its Contracting Parties, using information provided by governments in their National Reports to the Convention;
- A paper looking at trends in the science-policy advice adopted by the Ramsar Convention; and

More next page
Finalising revisions to a paper on “Adaptation policies for wetlands and climate change”, a multi-authored paper which derives from a workshop held in Melbourne a few years ago.

“Really it is a suite of papers looking at what Ramsar is and isn’t doing, what it could be doing better, and what some of its future needs might be,” says Nick.

Of his position as an ILWS Adjunct Nick says he hopes that he brings to ILWS an additional perspective and benefits, including raising ILWS’s international profile, publishing papers in good journals and helping ILWS be recognised for its high quality science.

“That’s the other side of the coin to the benefits to me of being an ILWS Adjunct,” says Nick. “Which includes being able to come out to Australia and find the time to do this thinking and writing with ILWS wetland experts. Semi-retirement seems to mean being even busier than ever…”

Dr Penny Cooke

Institute Adjunct Dr Penny Cooke was at the APEA (Asia Pacific Evaluation Association) conference in Hanoi, Vietnam, last November 20 – 25 November 2016 where she gave a presentation on “How can meta-evaluation and analysis of several years of evaluations submitted for a government funded environmental sustainability program. It explored the use of evaluation tools, evaluation frameworks, and evidence-informed reporting that encourages participatory evaluation. It built on research into social learning of participants in community-based delivery organisations and examined whether the program evaluations have influenced natural resource management funding and policy directions in the past decade.

The focus of the workshop was on the purposes of performance based (used as synonymous with results-based) management in the provision of government and agency policies and services, and roles for evaluation within the performance based management process.

Participants examined the differences between evaluation for improvement and evaluation for accountability and the influence this has on evaluation study design.

Dr Wayne Deans

In late November, 2016, Dr Wayne Deans, ILWS Adjunct, participated in an 8-day tour of South Korea as part of the Korean Government Scholarship (KGSP) alumni invitation program.

Wayne gave a presentation outlining the outcomes of his PhD thesis, which he completed in 2015.

“It was a real pleasure to return to my old field site on the island of Jeju and witness the significant changes that had occurred since I was there in 2000,” says Wayne.

KGSP scholarships are available every year for undergraduate and post-graduate study. For information visit the National Institute for International Education website: http://www.niied.go.kr/eng/index.do.

On November 28, 2016, Wayne gave a guest lecture at the National Institute of Advanced Studies (NIAS) in Bangalore India on “The Principles of Redundancy.”

The National Institute of Advanced Studies (NIAS) was conceived and founded in 1988 to conduct advanced multidisciplinary research. Housed in a picturesque green campus in Bangalore the Institute serves as a forum to bring together individuals from diverse intellectual backgrounds.

The Institute is unique in its integrated approach to the study of intersections between science and technology, philosophy, social issues and leadership. The “Principles of Redundancy” was developed during Wayne’s PhD and seeks to provide a tentative proposal capable of explaining system dynamics.

Five Principles are introduced with the aim of exploring the oft used, but rarely examined concepts: order, development, complexity, emergence and stability. The event was well attended and the audience engaged in an active discussion session after the lecture.
Conservation and Biodiversity Research in the Central Torres Strait

- Associate Professor Justin Watson

Following receipt of a grant (to cover expenses) from the Institute and support from the Torres Strait Regional Authority (TSRA) and Gondwana Ecology Group, I was once again able to participate in a biodiversity investigation of several uninhabited islands in central Torres Strait in November 2016.

I have been involved in numerous biodiversity surveys and research across the Torres Strait for nearly a decade. This work has been part of the Indigenous Protected Areas programme established in the islands and has included opportunities to work closely with the local Rangers.

The TSRA Ranger Program is one of the most successful programmes of its kind in Australia and provides opportunities for on-ground management and conservation of land and sea resources and exchange of traditional ecological knowledge.

Over the years, I have noted the importance of the islands not only for biodiversity generally, but specifically for migratory and resident shorebirds. The sand quays and tidal flats provide particularly important resources for nesting (e.g. terns, noddies) and foraging (e.g. waders).

Other conservation significant species such as the Beach Stone-curlew (Esacus magnirostrus) and both Australian oystercatcher species (Haematopus longirostris and H. fuliginosus) nest on many of the islands (primarily the uninhabited islands). The extensive tidal ranges around the hundreds of islands provides extensive feeding grounds for the shorebird-wader group.

The expedition in November was based aboard the Blue Planet Marine research vessel and investigated, several uninhabited islands, incorporating flora, feral animal monitoring, small mammal and reptile survey, turtle nesting surveys and exchange of traditional ecological knowledge. There is hope that ranger training (in bird identification) will provide opportunity for long-term monitoring, particularly with climate change/sea-level rise a concern in the islands.

During the survey, I had access to three “small” islands north of Poruma (inhabited island in the central Torres Strait), which we had not previously surveyed (Sassie, Utto and Yarpar).

Highlights included confirmation of feral cats on a mud/mangrove island with noticeable lack of small mammals and few reptiles. One exception was the Mangrove Skink (Emoia atracostata), restricted to the Torres Strait and tip of Cape York, thriving amongst the rocky intertidal areas. This island is also considered (by the marine biologists on the survey) to be extremely important for the conservation of Hawksbill Turtle (Eretmochelys imbricata).

On one of the sand islands, characterised by low grass/shrubland with interspersed bushclumps, nesting Black-naped (Sterna sumatrana) and Bridled Terns (Onychoprion anaethetus) were observed. In a larger thicket (vine scrub) patch on the island, Scrub Python (Morelia amethistina), Brown Sheen-skink (Eugongylus rufescens) and a diversity of "forest" birds (e.g. monarchs, fruit-doves) was recorded. The surrounding shore and reef provided foraging habitat for many waders/shorebirds.

There was great excitement when a “black-headed gull made an appearance and a day later two birds were seen in a Pandanus tree on the island. The gulls were Franklin’s Gulls (Larus pipixcan), a species that breeds in North America, with non-breeding movements to South America. Online Australian databases indicate Queensland records for this species at Lake Barambah (February 2014) and at the Cairns Esplanade (May 1988 and November 1993). The north-south shipping route traverses the central part of the Torres Strait and it is conceivable the birds “hitched” a ride. Laughing Gull (Larus atricilla), another North American species, also vagrant to Australia, was recorded in the central Torres Strait in 2012 (pers.obs.) During subsequent discussions about these birds, the elders informed that the “black-headed sea-gulls” are occasionally seen with the “common gulls” (i.e. Silver Gulls Larus novaehollandiae) on the Central inhabited islands.

Information collected during this survey will be used to further advise the conservation and management plan for the central islands (to be implemented by the TSRA Rangers) and will likely include feral animal (cat) eradication, long-term bird and turtle nesting surveys.

I hope to continue my involvement with the Rangers in the Torres Strait as education, research and conservation opportunities arise. With special thanks to the TSRA, the Rangers and Elders of the Torres Strait, ILWS, Gondwana Ecology Group and Blue Planet Marine.
Dr Joanne Millar contributes to Fish Conservation Monitoring Workshop in Laos

Institute Adjunct Dr Joanne Millar attended a workshop in Vientiane from 7-8 November 2016 on the invitation of FISHBIO, a US company that conducts research and development on fisheries.

They are developing a guidebook on how to monitor effectiveness of fish conservation zones in the Mekong region. Participants identified suitable indicators (social, ecological and governance) to measure, and methods that would be appropriate for local communities.

Dr Millar contributed her expertise with using social and cultural indicators to evaluate fisheries interventions based on her experience with research for development projects in Laos and Indonesia. Amongst the social indicators workgroup, there was unanimous agreement that people’s local knowledge, values, beliefs and wellbeing needed to be monitored alongside the more standard socio-economic indicators which can be influenced by other developments.

The guidebook will be tested at a few sites in Laos in 2017 and released in 2018. For more information go to http://fishbio.com/field-notes/the-fish-report/vital-signs-assessing-health-fish-conservation-zones

Community reforestation in Timor-Leste

Dr Alexandra Knight and Institute Adjunct Jorge Ramos travelled to Timor-Leste in October 2016 to gather information to support the second round grant application to the Darwin Initiative (led by Dr Joanne Millar) to support and fund research into a community reforestation project in Laclobar and Soibada, within the Manatuto region.

The trip was funded by ILWS. Alexandra and Jorge were generously and kindly hosted by Alexander Sarmento and his family who are based in Dili and Soibada. Alex is the project manager for the community reforestation project which is funded by voluntary contributions from Friends of Laclubar, based in Bathurst and Group Training Northern Territory, based in Darwin.

172,000 trees, including Casaurina, Teak, Albizia and Mahogany have been planted in the region since its commencement in 2010, and despite some early mortality, over half have survived, stabilising the very steep slopes which were previously subject to swidden agriculture, and also providing firewood (the primary source of fuel for cooking), overstory for agroforestry, and the potential for carbon offset payments and benefit to biodiversity.

Four days were spent in meetings in Dili with international aid agencies including World Vision and United Nations Development Program, both very supportive of the project, and government departments including the Ministry for Agriculture, Fisheries and Forestry. The remaining trip was spent at the project site (after a 120km, 5 hour trip into the mountains), inspecting the existing nurseries and forestry plantings, looking at potential future sites and meeting with the community to hear their thoughts on the project and ascertain future directions.

The local church service provided an opportunity to present the project and CSU to the broader community while a targeted meeting was held to hear the views of those already involved in the project. The local community is very keen to see the project expand and continue and welcomed the interest of CSU.

“If our second stage application is successful we will be able to both support the continuation and expansion of the project as well as undertake research into the social and biodiversity benefits of it,” says Alexandra. “Our aim is to facilitate transition from a small, donor based community tree planting project to a more integrated and sustainable reforestation system that will improve land management, biodiversity and rural livelihoods.”

Combining feasible voluntary smallholder carbon payment schemes with agroforestry, biodiversity conservation, reforestation and customary law (Tara Bandu)* is a new concept for Timor Leste. It will provide valuable lessons for national and international biodiversity conservation and development programs.

Workshop participants in Vientiane, Laos
Cost of a healthy diet

ILWS Adjunct Jackie Priestly, a lecturer in Nutrition and Dietetics with CSUs School of Dentistry and Health Sciences has been involved in a research project which has found a basic healthy diet can cost up to around a third of some family’s income support payments, shining new light on food stress in western NSW.

The project, done in partnership with Mrs Pollyemma Antees, an Accredited Practising Dietitian from North West Nutrition examined how easy it was for people to buy enough food to meet their nutritional requirements for good health.

The results are based on a 2014 survey of grocery and fresh fruit and vegetable stores across Murrumbidgee, Western NSW, Far West Local Health Districts and the New England section of the Hunter New England Local Health District.

“We surveyed the stores for the availability and cost of basic items from the Victorian Healthy Food Basket and the top 10 selling vegetable and fruit varieties in Australia,” says Jackie.

“The research found people could buy on average 29 different loose and bagged choices of the top 10 selling fruit varieties in Australia and 50 choices of the top 10 selling vegetable varieties in Australia. Grocery stores were open an average of 6.8 days per week and had on average 2.4 items missing from the 44 items in the Victorian Healthy Food Basket.

“This basket of healthy food for a family of four for two weeks cost an average of $466.79, equal to 34 per cent of Centrelink Income Support Payments for the family.”

Jackie says it may also point to why some low income households might need to buy cheap foods and may have less healthy diets.

“These issues need to be tackled to help reduce rates of chronic diseases like diabetes and cardiovascular disease,” she says. “We hope that this research will raise awareness and encourage people to consider ways to help people in their own family and community to eat a healthy diet.”

Results for the Murrumbidgee, Western and Far West have been released, with a summary of the results for each of the districts available here

*The project was undertaken with support from the NSW Ministry of Health Grant $66,000 and in-kind donations from 22 organisations that assisted in data collection.

Research Activities

Reporting back to Aboriginal study participants

With funding support from ILWS, 2016 SES Honours Student, Catherine Conroy has gone back to her study participants to report the findings of her thesis titled ‘Aboriginal Australians, plants and water’.

For her research project Catherine used maps of seven ‘culturally significant’ wetland species to start conversations around the importance of wetlands and their vegetation with the Mutthi Mutthi and Wiradjuri peoples in their traditional lands within the Murrumbidgee catchment.

Conversation was also had around contemporary connections with water and the opportunity presented under current water management reforms for cultural renewal through watering programs.

“Having a feedback session with Aboriginal research participants in a format that is easy to understand is regarded as an essential step in the research process,” says Catherine.

With this in mind, after submitting her thesis, Catherine updated the maps used at interview to include information cited as useful by participants such as publicly accessible crown land eg: TSR, National Parks, roads, floodplain zones on top of the cultural plant distribution; developed a summary results brochure (http://www.csu.edu.au/__data/assets/pdf_file/0011/2659736/Final-Aboriginal-water-plantsbsm.pdf); and held feedback meetings with some of the participants. A copy of the summary brochure was emailed also to all participants.

In December, 2016, two feedback meetings were held in Wagga Wagga and Balranald.

“The feedback sessions confirmed traditional owners and Local Aboriginal communities wish to build on this initial study and be involved in more research which addresses their needs and supports their unique role in environmental management,” says Catherine.

Two important lessons learned from the feedback sessions for researchers working with Aboriginal people were:

- Researchers should not assume that participant’s identity needs to be hidden, the default position should be that Aboriginal people want to be credited with their words and ideas. This also helps others who read the research to contact people for further information.
- Researcher should be cognisant of the gender roles within Aboriginal society and that this may at times require separate sessions with male and female groups.

“Overall, feedback was positive with Mutthi Mutthi and Wiradjuri people living in the Murrumbidgee catchment wanting to establish greater ties with ILWS and Charles Sturt University to have their voices represented in research and teaching outcomes,” says Catherine.
Opinion

Wes Ward is currently a Media Officer with CSU, with experience working with multicultural teams in developing countries in SE Asia and the Pacific. He graduated with his PhD from CSU in December 2016.

Lasagne, chopsticks and selecting ICTs for research projects

Imagine this. You are visiting another country for the first time, and you visit an Italian restaurant. Lasagne is on the menu, you remember your nona’s amazing food, and you order it.

Steaming, hot lasagne arrives at the table, smelling fantastic. To eat it, your waiter presents you with a set of chopsticks. You have never used chopsticks, the lasagne is soft and runny, not made for chopsticks, but you battle on and finish the dish. The dish is familiar but the eating tools are not, and they are hard to learn and use.

Welcome to the world of inexperienced computer users trying to communicate with their overseas counterparts in international research projects. They see the project problems, they see the need, but the communication tools are not ideal for the job.

International research teams usually include members from developed and developing countries, with variable levels of education and international experience, but who are endowed with either access to greater economic resources and skills, or access to the land and people with whom the research will be carried out. My research shows nearly all members of international research teams prefer face-to-face communication. But this may not be possible where members live in different regions, countries and time zones. So team members have come to rely on information and computer technologies (ICTs) to allow communication between members of teams collaborating in developing countries.

There are, however, a number of barriers to effective communication between team members. Language stands out as number one problem for researchers for whom English might be their second or third language, particularly where technical terms are used and spoken in an Australian accent!

On the other hand, researchers from Western countries, including Australia, believed developing mutual trust and respect are most important. Interestingly, while Australians I have interviewed consider language differences important, especially fluency in English, this issue was not their number one concern, and they saw little need to learn their counterpart’s language.

Time and geographic distance between team members and cultural groups also presented difficulties for communication, especially in developing professional relations and trust. Research shows close proximity increases effective communication, but funding may preclude this particularly where travel is expensive. This is where ICTs can play an important role.

Cultural differences were another major barrier. Team members from Eastern and Western cultures often have differing attitudes to ‘face’, or the perceived ‘public worth’ of a person, and to professional relations, where Eastern team members often desire personal as well as professional relations with their Western counterparts. For Easterners, personal relationships helps develop trust in teams, but such personal relationships can be a barrier for Western team members who do not appreciate the importance of a beer and game of petanque after work each Friday.

Team members can also assist communication by developing a personal sense of ‘cultural intelligence’. This includes empathy for other cultures, willingness to learn about others, and listening skills. Team members with high cultural intelligence are held in high regard by others.

Other communication barriers include differences in organisational structures, national political systems and access to funds; amount of broadband and infrastructure available to run various ICTs; and the importance of non-verbal cues such as a nod or a grunt for effective communication.

These barriers are apparent in all communication, both face-to-face and via ICTs. This has important implications for ICTs used in multicultural communication as each varies in its ability to account for cultural differences while completing a task in a research project.

So, back to the ‘lasagne and chopsticks’ story. My research shows no one ICT overcomes all these barriers. No one ICT can make an inexperienced researcher a better team member.

But I did find that email was by far the most preferred medium, especially by non-native English speakers. Why? Because it gave them time - better than instant messaging, Skype or even face-to-face - to...
craft their messages and get advice as required, especially where they wanted to preserve their face and maintain good relations. They want to understand and be understood. This flies in the face of traditional theory which decries email for not transmitting non-verbal cues, particularly for Eastern cultures.

Other ICTs have their pros and cons. Skype has been hailed recently as a replacement for face-to-face meetings. But within international research teams, non-native English speakers in particular are concerned at the lack of understanding, trust and so poor communication engendered when using it, while limited access to sufficient broadband and infrastructure is also limits its use in developing countries.

“Wes’ thesis is titled “Exploring in-person & technologically-mediated communication within international agricultural research teams” and is available at http://trove.nla.gov.au/version/235880785. His study was based on work in Australia and Lao PDR.

Engagement

Meeting with High Commissioner

On October 6, 2016 members of the research team for the project Improving groundwater management to enhance farming livelihoods in Pakistan team met with Her Excellency, High Commissioner of Pakistan, Naela Chohan.

Over lunch at the High Commission in Canberra Dr Michael Mitchell, Professor Jay Punthakey and Associate Professor Catherine Allan (CSU/ILWS) and Dr Evan Christen (ACIAR) explained the project aims and noted its emphasis on increasing the participation of women in groundwater management and decision making.

“The High Commissioner is embarking on PhD research in this area, and the common ground between our interests was explored, and her advice sought,” says Catherine. “This was a very positive meeting, and we hope information sharing information between the Project team and the High Commissioner will continue.”

Community Event

On Friday, November 4, 2016 the Woolshed Thurgoona Landcare Group held a spotlighting night at the Hume Dam Wall Reserve picnic area with Drs Wayne Robinson and Alison Matthews.

Public lecture

Associate Professor Dr Branka Krivokapic-Skoko gave a public lecture on “Regional Australia: a place to call home for immigrants” in Port Macquarie on Monday, Nov 21.

Fall of the Derwent

Fall of the Derwent (2016), is an ongoing public artwork by the Institute’s Associate Professor Margaret Woodward and Justy Phillips (UTas) presented by GASP (Glenorchy Art & Sculpture Park) Tasmania, as part of Swimmable: Reading the River.

Fall of the Derwent is an experiment in hydrographic publishing installed at Wilkinson’s Point, Elwick Bay, Tasmania. Visitors to the park can experience Fall of the Derwent – a 96 page written text-artwork – by scanning the artwork’s permanently installed QR code. A single scan of the QR code will trigger a digital download of this hydrographic score onto a smartphone or tablet. The downloadable artwork uses coded html to ‘read’ the River Derwent’s current Energy in Storage Levels (as made public by Hydro Tasmania).

By connecting their own river of creative writing, prose and historical research to this dynamic data, each download of Fall of the Derwent publishes a completely unique hydrographic score – reflecting exactly the percentage of energy stored that day in the River Derwent system. The score is also available to download from the project website: www.fallofthederwent.net

The artists undertook a year-long process of creative practice research that included in-depth archival research, walking, writing, making, recording and publishing. Over two recent summers, they walked from the sea to the source of two Rivers Derwent. First, they walked from the seaport of Workington to the valley of Borrowdale in the Lake District National Park (UK) and then from Blackmans Bay to Leeawuleena/ Lake St Clair (Tasmania).

During this research phase the artists collaborated with many individuals, agencies and stakeholders including Tasmanian Aboriginal people, Hydro Tasmania, Derwent Estuary Program, Inland Fisheries Service, Parks and Wildlife Service, Telstra, Hop Producers Australia, Sall tas, The State Library of Tasmania, Mineral Resources Tasmania and LISTMAP.

Fall of the Derwent was launched at a public event on 26 November 2016. This project is supported by Arts Tasmania, Ian Potter Foundation, Australia Council and Glenorchy City Council and Telstra.

* Margaret Woodward is leader of the Creative Regions Lab at CSU.

Director’s Activities

Institute Director Professor Max Finalyson continues to engage with a wide variety of the Institute’s stakeholders, both externally and internally. Go to http://www.csu.edu.au/research/ilws/team/profiles/members/max-finalyson for details.
Post-graduates

2016 PhD graduates

Congratulations to all our PhD students who graduated last year. They include:

In Wagga Wagga, Dr Jamin Forbes, (above) Principal supervisor Professor Robyn Watts, topic: Population dynamics and implications for management of a Murray cod and golden perch fishery in south-eastern Australia.

In Bathurst, Dr Jenni Greig, (above) Principal supervisor Professor Mark Morrison, topic: Predicting the social impacts of change: Exploring a psychological approach to capturing social impact data for cost-benefit analysis.

In Albury, Dr Paul Amoateng, Principal supervisor Professor Max Finlayson, topic: The changing spatial extent of rivers and floodplains and its implications for flooding. The case of Kumasi.

Dr Chaka Chirozva, Principal supervisor Associate Professor Rosemary Black, topic: Community engagement in the governance of Transfrontier Conservation Areas: An analysis of the implementation of Sengwe Tshipise Wilderness Corridor, Zimbabwe.

Dr Saideepa Kumar, Principal supervisor Professor Allan Curtis, topic: Establishing more acceptable and achievable environmental watering targets in a complex changing world.

Dr Luisa Perez-Mujica, Principal supervisor Professor Max Finlayson, topic: Development of a sustainability assessment tool in the context of social-ecological systems using system simulation and participatory modelling: The case of the Winton Wetlands.

Poudel, Principal supervisor Dr Alison Matthews, topic: The effects of pastoralism on the behaviour of the Himalayan marmot (Marmota Himalayana) in high altitude range-lands in Nepal.

Dr Karma Tenzing, Principal supervisor Associate Professor Rosemary Black, topic: The role of property rights in Natural Resource Management: the case of high altitude range-land of Bhutan.

Graduating earlier in the year in Sydney was Dr Michelle Olivier, Principal supervisor Associate Professor Jonathon Howard, topic: The advantages of localisation as a strategy for sustainability and global carbon reduction.

Dr Eak Rana, Principal supervisor, Dr Rik Thwaites, topic: REDD+ and ecosystem services trade-offs and synergies in community forests of central Himalaya, Nepal.

Dr Wes Ward, Principal supervisor Professor Lisa Given, Exploring communication within international agricultural research teams.

In absentia, Dr Buddi
New ILWS PhD student Matt O’Connell (above) will have the perfect excuse to stop for a beer or two at pubs throughout the Murray-Darling Basin when he does his field work.

Matt, the newest ILWS PhD scholarship holder, has begun work on his research project titled “Trophy Murray Cod: taxidermied Murray Cod and environmental change in the Murray-Darling Basin” in January this year and, as trophy Murray cod are often found in pubs, he’ll need to visit many a pub over the next couple of years.

The project has received a top-up scholarship from the Murray-Darling Basin Authority- Stuffed Murray Cod in Pubs. (2017-2020) Humphries, P., McCasker, N., Kopf, R. & O’Connell, M. (PhD student), MDBA Scholarship grant, $45,000 - and builds on the initial work by Matt’s supervisors Drs Paul Humphries, Keller Kopf and Nicole McCasker, fish ecologists with an interest in historical ecology.

Matt is no stranger to CSU having done his Parks and Recreation Honours Degree (specialising in aquatic sciences) here about 20 years ago.

“Trophy Murray Cod are the biggest fish in Australia’s inland waterways, they have a public appeal and a lot of people are interested in fish.

“They are one of a very few Australian icons that has been turned into a trophy. This angle also attracts me, as I am a fisherman as well.”

Preliminary research has already identified where some 100 or so trophy Murray cod could be in the Basin. Matt plans to build on that knowledge with a citizen science aspect of his research. The research will also collect information from and about the trophy cod, including samples for DNA, 3D scans and as much information as possible about the size, when it was caught, who caught it, where it was caught and what people think about it being a trophy.

“The citizen science aspect of the project will hopefully help me organise where I’ll go and why, but there will still be a significant amount of travel visiting a lot of regional and remote communities,” says Matt.

Once the data about the cod has been collected, Matt says he would be correlating it with other information i.e. water quality “to come up with some trends on how big Murray cod have been travelling in the Murray-Darling Basin.”

The project already has a public group Facebook Page “Stuffed Murray Cod in Pubs” with over 200 interested members.

“We welcome Vu Vi An, a new PhD student who started in February this year.

More next page
An is currently a Director with the Vietnamese Research Institute for Aquaculture in Ho Chi Minh City. He is an expert in freshwater fish and in charge of commissioning research to help the Vietnamese government protect a resource which is an important source of nutrition and income to the Vietnamese people.

An was successful in securing an Australia Award, which is a full-fee-paying scholarship which was awarded by the Australian Department of Foreign Affairs and trade.

"Only limited Australia Awards are granted each year, so it is a phenomenal achievement for An, and a fantastic outcome for ILWS," says his Principal supervisor Dr Lee Baumgartner.

An will be working on a project titled "In search of the Mekong Salmon". He will spend the next four years trying to understand the complex ecology of migratory fish in the Mekong Delta.

It is thought that many species of fish spend many years in the South China Sea, and then migrate upstream, thousands of kilometres to spawn. The young then move downstream to the ocean and the cycle repeats. Mainstem dam development in the Mekong threatens the ability for these fish, some which grow to over 1m long, to complete essential life history stages.

"An will be unlocking the secrets of these long distance migrants, using a range of scientific techniques to try and locate spawning grounds, and to also determine how long these fish actually spend in the ocean," says Lee.

An’s other supervisors are Dr Martin Mallen-Cooper (Fishway Consulting Services), Professor Ian Cowx (University of Hull, UK) and Dr Wayne Robinson (ILWS).

**PhD News**

**Philip Groves** submitted his PhD thesis, Workplace bullying and the NSW workers compensation commission: A Foucauldian qualitative content analysis of the medico-legal response to a complex social problem. His supervisors, Angela Ragusa and Andrea Crampton, wish him the best of luck as he awaits reviewers’ feedback!

ILWS PhD student **Liz Znidersic** has been appointed a member of the Federal Government Threatened species Cocos Buff-banded Rail Advisory Panel. A story on her presentation to the AGM of the NE Tasmanian Field Naturalists Club at its AGM in August 2016 was published in the club’s newsletter, The North Eastern Naturalist, No. 195, December 2016.

**Sam Strong** was invited to and gave three presentations in November last year to Melbourne University fire ecology staff and students in Creswick on November 11; at the Newstead community fire forum on November 12; and at the Department of Environment, Land, Water & Planning (DELWP) on November 29 in Melbourne.

Sam presented an overview of her thesis to three different audiences, explaining her exploration of the paradoxes of native vegetation management in the context of two major 21st century bushfires in SE Australia.

Her research centres on the prevalence of retelling key myths following catastrophic bushfires to repeatedly influence policy and shape cultural understandings of the environment.

"In turn, how we live in and make sense of fire-prone environments is shaped by myth," says Sam. She says her findings were well received and stimulated some healthy discussion and questioning of current ways of managing native vegetation and living with bushfire, in terms of how the key myths are retold, including the influences of language used in myth telling.

"It was also a wonderful set of opportunities to give back to people who are living and working with bushfire management issues in the broader community," says Sam.

She is hopeful that ongoing conversations with a range of people as a result of these sessions may enable the research to be usefully applied; from helping managers and communities confront challenges with bushfire risk communication and engagement, to policy development.

New PhD graduate **Dr Chaka Chirozva** was appointed the new Executive Officer of World Heritage at the Naracoorte Caves National Park, SA, last November. Chaka is doing the role on a part-time basis as he also holds a regional landcare facilitator role with the Department of Environment, Water and Natural Resources.

**Buyani Thomy** (above, pic CSU media) who has almost completed his PhD studies as part of the research project The value of river health to the residential community of the Georges and Cook River catchments has found that many people enjoy living near healthy natural rivers but real estate valuers, town planners and economists find it difficult to place an economic value on this desire.

"After accounting for multiple factors that affect selling prices, my research showed that improving the condition of both river channels and vegetation along rivers also leads to higher prices than when only vegetation was improved," says Buyani. Read more

The results of recent PhD graduate **Dr Jenni Greig** has featured in a CSU Media Release and in various media outlets. Her study has looked how an individual’s personal attributes and community dynamics were related to personal well-being, and how these can be measured. It represented a major first step in including social impacts in cost benefit analysis (CBA). Her research was conducted in the small and diverse NSW communities of of Bulahdelah, Hillston, Nyngan and Warren.
**Publications**

**Journal Papers**


**Research Notes**


Farewell

We said good-bye in January this year to ILWS post-doc Dr Manu Saunders and ILWS technical officer James (Jim) Abell (pictured right).

Manu has spent seven years with the Institute commencing in March 2010 as an ILWS PhD scholarship recipient with Professor Gary Luck. Her research looked at wild pollinator communities in almond orchards and nearby mallee vegetation. She then had a three-year postdoc position working with Gary on the ARC Discovery project, Predicting the delivery of ecosystem services in agriculture landscapes, during which she co-supervised an Honours student and a PhD student Rebecca Peisley, and published 14 peer-reviewed journal articles, one book chapter and nine articles in The Conversation. Manu is taking up a three year Postdoctoral Fellowship with the University of New England, Armidale on a project which aims to use a spatially explicit network approach to quantify and value ecosystem services in agricultural systems.

Jim first started working with CSU and ILWS in 2012 as a technical officer on environmental flow projects monitoring the ecological outcomes of Commonwealth environmental flows in the Edward-Wakool River system.


Books

Book Chapters


Conference Presentations


Reports