Visiting academic,
Assoc Prof Wilson Cabral

Assoc Prof Wilson Cabral is currently visiting the SRC on his 12-month sabbatical, which finishes in February 2016. Wilson is an associate professor and researcher at the Aeronautics Institute of Technology (Department of Water Resources and Environment) since 1998 working on water resources management, environmental economics and climate change adaptation.

He recently coordinated the Redelitoral Project, a researchers network that embraces 4 leading institutions in Brasil (USP, INPE, UNIFEI and ITA) and others abroad (POLITO, Stanford and USC). This project has articulated some recommendations for the Brazilian task force team on climate change adaptation, focused on the coastal zone.

During his time at SRC, Wilson has been initiating some papers on Water Management, Climate Change Adaptation and Transportation Sustainability, involving USC researchers from several disciplines. He has also been taking some interviews and films that will edited and presented by a Brazilian broadcast company (TV Band).

Wilson also leads projects on Water Management and he was (until Dec 2014) the academic representative on the Brazilian Council of Water Resources. His current interests on climate change adaptation are focused on institutional approaches, particularly on coastal areas, and also at the interface between adaptation and water and energy management.

At the end of the sabbatical period, he intends to establish a long term partnership with USC/SRC.
Dr Pedro Fidelman, together with an international research team, have developed a novel framework to help elucidate the different ways climate change can impact coral reefs and reef-dependent societies.

In a paper published in the journal *Regional Environmental Change*, the researchers propose that climate impacts on coral reefs and people are like a two-way street. That is, climate impacts operate in both directions, not only from environment to people – the focus of much of the research on climate change and coral reefs to date – but also from people to environment.

The “two-way street” framework emphasises how some climate impacts, such as severe tropical storms directly affect human societies with repercussions for how they interact with the environment. The framework underscores the diverse impacts that need to be considered to develop a more complete understanding of climate impacts.

Climate change is a major long-term threat to coral reefs, and is predicted to affect millions of people, particularly in developing countries, who depend on goods and services (for example, fisheries, coastal protection and tourism) provided by coral reefs. Understanding the different ways in which climate change affects the environment and people, as well as how societal response to these impacts affect natural resources and the environment is fundamental in developing appropriate management actions in coral reef social-ecological systems.

The paper *Framework for Understanding Climate Change Impacts on Coral Reef Social-Ecological Systems* appears in the journal *Regional Environmental Change* [http://dx.doi.org/10.1007/s10113-015-0832-z](http://dx.doi.org/10.1007/s10113-015-0832-z)

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**Fieldwork in Italy**

Prof Roy Sidle spent 10 days in Italy in late September 2015, visiting catchments in southern Italy with Prof Giueseppe Scarasci and his PhD student (Federico Moresi) from the University of Rome. The trip helped establish the location for a landslide modelling/field study in which Roy will co-supervise the PhD student. The focus will be on predicting the stabilizing effects of tree root systems, as well as the temporal and spatial attributes of shallow landslides in this managed forest catchment in Cosenza.

After this field trip Roy and Giueseppe drove to northern Italy at the invitation of the joint European Forestry Commission and FAO where Roy gave a keynote presentation at the workshop on ‘Mountain Watershed and Ecosystem Services’ in Pieve Tesino. The meeting was attended by invited participants from European nations dealing with mountain watersheds and hazards and aspects of forest industry, as well as FAO representatives and several invited international scientists.
NCCARF SEI Network hosted by the Sustainability Research Centre

The National Climate Change Adaptation Research Facility’s social, economic and institutional dimensions network (SEI Network), hosted by the Sustainability Research Centre, has been tasked with exploring the social, economic and institutional dimensions of climate change adaptation and maintaining research and adaptation initiatives to increase the capacity to use this research.

Partners include the University of Adelaide, University of Canberra, Murdoch University, Swinburne University of Technology and Girringun Aboriginal Corporation. Each of the partners represent a number of fields of research relevant to the aims of the network including: economics, business, social ecology, human geography, anthropology, adaptation planning, institutional analysis and education.

Convened by Prof Tim Smith and coordinated by Adaptation Coordinator Sarah Connor, a priority for the network is to develop online tools including a dynamic website focussed on the practical interpretation of research findings along with an informative e-newsletter and social media content. This will help facilitate interactions between researchers and stakeholders across the country. USC also leads the NGO Theme of the SEI Network (led by Dr Dana Thomsen and supported by Dr Noni Keys).

As the website is being developed researchers and stakeholders are encouraged to subscribe to the e-newsletter, a completely free service where you are able to:

- access up to date climate change information resources including tools which synthesize existing knowledge
- participate and share valuable knowledge and experience with like-minded researchers and practitioners
- link and promote your work nationally
- access expert advice and find collaborative contacts relevant to you
- be notified of various climate change initiatives, training, workshops, funding opportunities and conferences.

Prospective members just need to subscribe via the website at https://www.nccarf.edu.au/social-economic-and-institutional-dimensions/newsletters

Further information contact:
Sarah Connor, Research Network Coordinator
Email: sconnor@usc.edu.au or mobile: 0428 007 879

Exciting video presented by the CADWAGO project team

On 15 September 2015 the CADWAGO project team (Climate Adaptation and Water Governance) led by Professor Neil Powell, USC and Uppsala University, presented at the Royal Society in London - the oldest learned academy in the world. The session included a keynote by the OECD Head of Water Programmes. At the event a video was screened of the Work Packages, one led by USC (Prof Tim Smith, Dr Dana Thomsen and Dr Maria de Lourdes Melo Zurita) in partnership with UTAS, Griffith University and Oak Ridge National Lab, and the other Work Package led by colleagues at Brock University in Canada (with the University of Winnipeg). There was very positive feedback and several questions from the floor - answered through Skype. The video is focused on the project findings in relation to flooding.

The CADWAGO video is available online: https://youtu.be/54OL13PSww0

Falkenberg award

Prof Ben Preston has won the American Geophysical Union’s Falkenberg award for 2015. This prestigious award is given annually to an early– mid-career scientist who contributed to the quality of life, economic opportunities and stewardship of the planet. Ben is an Adjunct Professor with the SRC based at Oak Ridge National Lab in the USA.
Congratulations to Dr Judy Lawrence who has been awarded her PhD. Judy undertook her PhD through the Victoria University of Wellington but has been an affiliated PhD student with the SRC. Her thesis can be downloaded at: [http://tewaharoa.hosted.exlibrisgroup.com/VUW:64VUW_ALL:64VUW_INST51190027860002386](http://tewaharoa.hosted.exlibrisgroup.com/VUW:64VUW_ALL:64VUW_INST51190027860002386).

Recent achievements of HDR student, Marta Botta

HDR student, Marta Botta delivered a paper entitled *Spiritual Memes as Internal Indicators of Social Change in Sustainable Communities* ‘Futures Studies Tackling Wicked Problems’ conference in Turku, Finland from 10-13 June 2015. A journal article with the above title has been accepted to be published in the special issue of ‘Futures’ in early 2016.

Marta has also co-authored an article with Aliasghar Abbasi from the Office of Sustainability, Amirkabir University of Technology, Tehran, Iran entitled *Armed Conflict Versus Global Sustainable Development as Functions of Social Change*, listed amongst the published journal articles on page 7.

Building Research Relationships in Fiji

Prof Patrick Nunn, Dr Tristan Pearce, Rosie Kumar and Petra Nunn together with Mereoni Camailakeba from the Fiji Museum, spent two weeks in Fiji in September discussing research opportunities with community representatives. The proposed research will examine how traditional livelihoods in Fiji communities are vulnerable to climate change. The project will focus on the role of two variables in influencing how communities experience and respond to these stresses, ethnicity (Indigenous Fijians and Fijian Indians) and peripherality (core and outer islands). A complementary project will map hillforts (koronivalu) and liaise with communities to document oral traditions of the sites. Early accounts from missionaries in the late 1800s report Fijian villages perched on mountaintops like birds’ nests and settlement on the coast is only recent.

The group visited rural villages on Viti Levu, the main island. Each visit required formal offerings of kava roots to the Chief and when accepted, participating in a kava ceremony. The kava roots are pulverized, wrapped and drained in cheesecloth, creating a muddy looking liquid that has a mild relaxant effect. Everyone sits crossed-legged on woven straw mats and one by one is served a coconut shell bowl of the kava. The Arctic Geographer, Tristan, was treated to ‘tsunami’ style (full bowls) of kava to test his might in a playful welcoming. The group plans to return to Fiji in January 2016 together with USC undergraduate students funded through the New Colombo Plan.

**Marta Botta**

**Best presentations at Learning and Teaching Week**

Congratulations to Dr Noni Keys, Dr Clare Archer-Lean, Dr Lisa Ryan and Assoc Prof Claudia Baldwin as members, with FoSHEE colleagues, of the best panel presentation for ‘What’s climate change got to do with the courses I teach? Seeing the arts and science of climate change in USC classrooms’.
What’s happening in Xishuangbanna?

Prof Roy Sidle is working with an INRA (French National Institute for Agricultural Research) on a hydrology project in Xishuangbanna, southwestern Yunnan near Laos and Myanmar. This is one of the most culturally diverse regions in all of China and the city of Jinghong is rapidly expanding, placing increasing stress on the natural resources of this region. Much of the tropical mountain forests in this region have been converted to terraced rubber plantations, with rice paddies and other agriculture in the lower slopes. The study involves assessing the effects of tree root systems in various types of converted plantations and secondary forests on preferential flow in the soil. This affects erosion processes and stormflow generation.

Roy is co-supervising a PhD student, Jérôme Nespoulous, at INRA, Montpellier, France with Dr Alexia Stokes.

Community resilience and climate change adaptation

Fieldwork began in earnest in October on the Cambodian case studies for the Asia-Pacific Network Global Change Research project on community resilience and climate adaptation.

In Cambodia, the project is partnered by the University of Battambang and Ministry of Environment (MOE). USC will now join as part of the FAO-MOE Life and Nature project to integrate community resilience assessment with vulnerability impact assessment, watershed management and climate adaptation initiatives in Siem Reap province, and work in Phum Ta Hi (through Ptea Teuk Dong, a Khmer NGO) in Bavel Province, Battambang.

In October, Dr Chris Jacobson was joined by New Colombo Plan student Renee Currenti and Khmer Research Assistant Ratha Rien to refine and field-test assessment tools in Phum Ta Hi, and to meet and visit with the Lvea Krang Commune Council and Siem Reap Provincial Department of Environment. These initial visits have revealed the extent of poverty-related climate impacts in the region, and the serious secondary implications for land and food security, migration, changes in family structure and corresponding increased risk to youth safety. Vietnamese fieldwork begins in November 2015.
Mission Accomplished! Project on Institutional Adaptive Capacity to Environmental Change

The SRC recently completed a research project examining institutional adaptive capacity to environmental change in Cambodia, Vietnam and Australia. The SRC led research project examined how institutions – that is, the sets of rules (legislation, policies, decision-making procedures and property rights) and social norms that structure human interactions – support adaptive capacity to environmental change, and the underlying conditions for building and mobilising such capacity. The Earth system is experiencing social-environmental changes (overexploitation of natural resources, biodiversity loss, and climate change) at a pace that is unprecedented in human history. Adaptation is a societal response, which can minimise the adverse impacts of such changes.

Successful adaptation rely on the capacity of individuals, communities, organisations and governments to adapt to different disturbances. It involves a better understanding of relevant conditions that enable society to prevent, mitigate and adapt to impacts of social-environmental changes. One of such conditions refers to institutions. Drawing on cases of decentralised coastal resource management in the Peam Krasaop Wildlife Sanctuary (Cambodia), Tam Giang Lagoon (Vietnam) and South Australia, the project examined adaptive capacity in terms of six institutional attributes: variety, learning capacity, autonomy, leadership, resources and fair governance.

These attributes varied within and across the case studies examined; however, they have both facilitated and constrained adaptive capacity – depending on enabling and constraining conditions at play. For instance, a variety of actors, sectors and governance levels participating in resource management have entailed shared management and diverse approaches to problem-solving. On the other hand, such variety became problematic when different perspectives, interests and authority proved challenging to reconcile.

Despite the constraints, institutions have, to a certain extent, enabled actors to: organise themselves; learn and improve resource management; mobilise leadership, resources and authority; and, make progress towards improved governance. These illustrate the creation and mobilisation of adaptive capacity, which resulted in positive outcomes in responding to environmental change. In some of the case studies examined, reinforcing enabling conditions for adaptive capacity will require creating livelihood alternatives, alleviating poverty, reducing inequality, and building human and social capital.

Project team: Dr Pedro Fidelman (Sustainability Research Centre, USC, pedro.fidelman@usc.edu.au), Assoc Prof Truong Van Tuyen (Hue University of Agriculture and Forestry, Vietnam), Mr Kim Nong (Ministry of Environment, Cambodia), and Dr Melissa Nursey-Bray (University of Adelaide).

Acknowledgement: this project was funded by the Asia-Pacific Network for Global Change Research and the US National Science Foundation.
SUS302—Sustainability Problem Solving

On 19 October 2015, legendary surfboard artisan and HDR student, Tom Wegener gave a dynamic and interactive talk at Alexandra Headlands beach to the University of the Sunshine Coast’s SUS302 - Sustainability Problem Solving class. The class, led by Dr Tristan Pearce and MA student Eric Lede, focused on “leadership in sustainability” through an examination of innovation and sustainability in the surfboard making industry. Tom Wegener discussed environmental, social, and economic sustainability issues while walking through the evolution of the global surfboard industry. The students were then able to experience first-hand the surfboard evolution to better understand how chasing the ‘stoke’, or ‘aloha spirit’ has spurred rapid innovation over the last few decades.

Recent Publications

Journal articles:


Pearce, T., Ford, J., Cunsolo Willox, A. and Smit, B. (2015). Inuit Traditional ecological knowledge (TEK), subsistence hunting and adaptation to climate change in the Canadian Arctic. Arctic, 68(2). http://www.researchgate.net/profile/Ashlee_Cunsolo_Willox/publication/279225170_Inuit_Traditional_Ecological_Knowledge_(TEK)_Subsistence_Hunting_and_Adaptation_to_Climate_Change_in_the_Canadian_Arctic/links/5596e14008ae5d8f39328ede.pdf


The SRC Annual Retreat was held at the Sheraton Noosa Resort on 1 October 2015. It was a very productive day for those in attendance. Dr Bridie Scott-Parker, as one of the newest members of the SRC, gave an overview on her Adolescent Risk Research Unit (ARRU). Assoc Prof Claudia Baldwin also gave a short presentation on the new RUN Water Flagship project. These talks were followed by small group sessions focusing on domestic and international agendas, communication, and targets relating to research income, publications, HDR student numbers—with emphasis on how to achieve these outcomes. The day’s program closed with positive reflections from the Advisory Board members. General consensus amongst the Advisory Board and members of the SRC was that a two-day retreat is preferable to a one-day retreat, as there is a lot of information to gather and process over the course of one day. The Advisory Board has just completed their annual review report.