

Faculty of Computing Health and Science

Research Unit Annual Report

RESEARCH UNIT NAME: Consortium for Health and Ecology

RESEARCH UNIT LEVEL (tick): X Level I Research Group

YEAR: 2010

BRIEF OVERVIEW

The University's Research and Research Training Functional Plan identifies *Environment and Sustainability* as one of its eight areas of research activity, encompassing biological and environmental areas and *the interaction between ecology and human health*. The Consortium for Health and Ecology is the University's principal Research Group involved in investigating this interaction.

The Consortium for Health and Ecology continued to be involved in a global consortium to support a professional international association and publish an international journal. The journal, published by Springer, is ISI listed with an impact factor of over 2.2 in 2010. Dr Pierre Horwitz continued in his role as Vice-President of the International Association for Ecology and Health and at the Biennial Conference in London, in September 2010 was elected as a Board member of the Association.

Dr Horwitz also collaborated with researchers from the Ramsar Convention in Switzerland, and the World Health Organisation in Switzerland and North America, leading several projects, listed below.

The School and University has benefitted from these collaborations. As a direct result of involvement with the Ramsar Convention as leader of the research area of 'Wetlands and Health', Dr Horwitz was invited to help develop a programme of research for the Lake MacLeod complex in Northwestern Australia. This led to a Research partnership between the University and Rio Tinto Dampier Salt, and research funds in excess of \$1.2 m over the period 2011-2014 (see below).

MEMBERSHIP (Full Title of Researchers, including staff, research students, adjuncts in the past year)

As outlined in previous reports the Consortium does not have membership *per se*. Rather it contributes projects to, and to projects in, Research Centres in the School and elsewhere in the University.

Some of the staff involved in Consortium activities in 2010 reported herein included:

Associate Professor Pierre Horwitz, Dr Pascal Scherrer (Postdoctoral Fellow), Dr May Carter.

Research students included Mr David Blake, Mr Chatchai Intatha, Ms Marian Patrick (FBL), Ms Katesuda, Ms Kelly Chapman, Ms Zoe Car, Ms Tamara Murdoch, Ms Lisa Edwards.

Lake MacLeod research team (in 2010):

Associate Professor Ray Froend, Associate Professor Glenn Hyndes, Dr Rob Davis, Dr Kathryn McMahon, Ms Neisha McLure.

Associate Professor Andrea Hinwood's research activities are successful and extensive and overlap with the themes of the Consortium (but they have not been reported here).

NEW GRANTS

1. Lake MacLeod Biodiversity Project. Dampier Salt Ltd \$430000. 2010-2014. (involves Drs Pierre Horwitz, Kathryn McMahon, Ray Froend, Glenn Hyndes as supervisors, Hugh Dunn for OSH)
2. Feeding Ecology of Shorebirds. Dampier Salt Ltd. Dr Pierre Horwitz, Dr Robert Davis. \$445000. 2010-2014.
3. Guidelines for inland brine discharge from desalination plants. National Centre for Excellence in Desalination. With Associate Professor Ray Froend. \$300000. 2010-2013.
4. Useability index for recreational areas along foreshores. Dr May Carter Dr Pierre Horwitz. Swan River Trust. \$60000. 2010-2011.
5. Data Audit and research Framework for Lake Macleod. Dampier Salt Ltd. \$25000. 2009-2010.

PUBLICATIONS, REFERRED BOOKS, CHAPTERS, JOURNAL ARTICLES, CONFERENCE PAPERS, REPORTS 2010+

Scholarly Books

Finlayson, Horwitz and Weinstein – Contract signed with publisher (Springer) for book “Wetlands and Human Health”. Anticipated publication 2012.

Scholarly Book Chapters

Horwitz, P. and Carter, M. (2011 in press). Access to Inland Waters for Tourism: Ecosystem Services and Trade-offs. Chapter 4 In *Running on Empty: Water Policy, Tourism and Recreation in Australia*, Eds. L. Crase and S. O’Keefe. Earthscan.

Refereed Journal Publications (submitted/in review, in press, or published)

Kumar, R., Horwitz, P., Milton, R., Sellamuttu, S., Buckton, S., Davidson, N., Baker, C., Zavagli, M. (submitted 2010, revised, in review). Assessing wetland ecosystem services and poverty interlinkages: a general framework and case study. *Hydrological Sciences Journal*.

Burnham, Q., Koenders, A. and Horwitz, P. (submitted 2010) Status of the critically endangered freshwater crayfish *Engaewa pseudoreducta* from Margaret River, south-western Australia. *Records of the Western Australian Museum*.

Horwitz, P., Sommer, B., Thomas, R. (submitted, in revision 2010). Sustainability of ecological and economic costs and benefits in the restoration of a wetland in a water resource, drought-affected, catchment. *Restoration Ecology*.

Horwitz, P. and Finlayson, C.M. (in press). Wetlands as settings: using ecosystem services and health impact assessment for water resource management. *BioScience*.

Blake, D., Horwitz, P. Boyce, M. (submitted 2010, revised, in review) Fire retardant impacts on water quality in wetlands. *International Wildland Fire Journal*.

Cromie, R., Davidson, N., Galbraith, C., Hagemeyer, W., Horwitz, P., Lee, R., Mundkur, T. & Stroud, D.A. (in press). Responding to emerging challenges: Highly Pathogenic Avian Influenza H5N1, and the response of the Ramsar Convention and other MEAs. Submitted to *Journal of International Wildlife Law & Policy*.

Boschetti, F., Yves-Hardy, P., Grigg, N. and Horwitz, P. (in press 2011). Can we learn how systems work? *Emergence: Complexity and Organisation*.

McCullough, C. and Horwitz, P. (2010). Vulnerability of organic acid adapted wetland biota to the effects of acid sulfate soil acidification: a mesocosm study. *Science of the Total Environment*.

Refereed Conference Proceedings

Horwitz, P. (2010). Freshwater crayfish, conservation lists and passionate associations. Submitted to *Freshwater Crayfish 17*.

Monographs

Horwitz, P., Finlayson, M. and Weinstein, P. (2011). Healthy wetlands, healthy people. A review of wetlands and human health interactions. Secretariat of the Ramsar Convention on Wetlands and the World Health Organisation, Gland Switzerland. Ramsar Technical Report No. Xx. 145 pages.

Crise, L., O’Keefe, S. Horwitz, P. Carter, M., Duncan, R., Hatton-MacDonald, D., Haslam McKenzie, F. and Gawne, B. (2010). *Australian tourism in a water constrained economy: research agenda*. Published by the CRC for Sustainable Tourism Pty Ltd. Gold Coast, Australia.

HIGHER DEGREE BY RESEARCH LOAD (list name of candidate and degree type)

PhD (Research)

Student	Thesis topic	Enrolment status
Kelly Chapman	Social ecology of tourism along the Ningaloo coastline.	In progress. FT
Pat Karatna	A social ecology and participatory action research for Mangrove forest management in Thailand	In progress. (Writing) 25%
Zoe Car	Marine turtles, dugongs, and Indigenous interests – cross-cultural knowledge construction	In progress (thesis mostly written). 25% Semester 1. Deferred semester 2.
David Blake	Impact of fire in organic soils on groundwater quality	In progress (writing). 50%
Chatchai Intatha	Community capacity to adapt to coastal erosion	Candidature Confirmed 2010. In progress. FT
Katesuda	Sense of place and meaning of water	Candidature Confirmed 2010. In progress. FT
Marian Patrick	Scales of justice and water	In progress. FT

Masters (Research)

Student	Thesis topic	Enrolment status
Robert Campbell	Soil health, participation and the Bremer Catchment	In progress. (Writing) 25%
Marie Raphael	Community perceptions of landfill site	FT

Honours

Student	Thesis topic	Enrolment status
Tamara Murdoch	Meaning of springs	FT
Lisa Edwards	Star Swamp story	FT

Postgraduate theses examined (PhD, MSc) 2010 (Relevant to Consortium)

Examiner	Year	University	Title of thesis
PhD			
P.Horwitz	2010	Murdoch University	Cultural values of wetlands
P.Horwitz	2010	James Cook University	Can well-being analyses influence regional policy making?
MSc			
P.Horwitz	2010	University of New England	Linking science and management of invasive native macrophytes: Typha spp. River Murray, SA

HIGHER DEGREE BY RESEARCH COMPLETIONS (List name, degree, title of thesis)

Masters (Research)

Marie Raphael	Community perceptions of landfill site	Completed 2010
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Honours

Tamara Murdoch	Meaning of springs	Completed 2010
Lisa Edwards	Star Swamp story	Completed 2010

VISITORS AND COLLABORATIONS

International

Dr Horwitz was invited to lead a team to accomplish a review of the topic “*Water, health and global environmental change: science-policy mapping within Multilateral Environmental Agreements (MEAs)*”. The review is due for publication in the journal *Current Opinions in Sustainability*. The team consists of four colleagues (Dr Richard Thomas and Dr Lucilla Spini from the United Nations University in Canada, Dr Jo Mulongoy from the Convention for Biological Diversity in Canada, and Dr Francesca Bernardini from the European Convention on Water in Italy) and Dr Horwitz, and the paper is due for submission in June 2011.

Dr Horwitz is leading a writing team for the World Health Organisation, to prepare its background document on “*Biodiversity and Human Health*”, destined for presentation at the “Rio plus 20” (the Conference of Parties for the Rio Conventions 20 years after they were initially ratified in 1992). The work involves colleagues in Switzerland, USA and Mexico: Professor Jonathan Patz, University of Wisconsin; Dr Diarmid Campbell-Lendrum World Health Organisation, Switzerland; Dr Carlos Corvalan, Pan American Health Organization, Washington.

State

Associate Professor Pierre Horwitz and Associate Professor Ray Froend have been involved in a collaboration with researchers from Murdoch University, State Government departments which commenced in 2010 to develop a project on Adaptations for Climate Change for Freshwater Biodiversity.

COMMUNITY ENGAGEMENT ACTIVITIES AND LINKAGES

Active Participation in National/State Professional and Community activities 2005

- Blackwood River Foundation (Horwitz Board Member, Koenders Proxy)
- WA Threatened Species Scientific Committee (Horwitz Member)
- Wetland Coordinating Committee – Universities representative (Froend Member, Horwitz Proxy)

International Activity

1. Scientific and Technical Review Panel of the Ramsar Convention for Wetlands (Horwitz)
2. Board member, International Association for Ecology and Health (Horwitz)
3. IDRC/AusAid Scientific Officer for Technical Review Committee (Horwitz)

Dr Horwitz presented the following international presentations in the latter half of 2010:

Month Year	Conference	Paper details
31 st October – 2 November 2010.	Global Environmental Change and Human Health – UNU INWEH international symposium: protecting water quality. Hamilton Canada	Plenary presentation and panel discussant.

Other Invited Talks (2010)

Date	Event/Group	Nature of invitation
August 24 th 2010	WWT, Slimbridge, UK: Wetlands, ecosystem services and human health.	Invited seminar
September 2010	Swiss Tropical and Public Health Institute. University of Basel. Wetlands, ecosystem services and human health	Invited seminar
December 2010	Italian Institute for Ecosystems Studies. Verbania Pallanza, Italy. “The Ramsar Convention and Wetlands and Human Health”	Invited seminar
December 2010	IUCN “Ramsar Wetlands and Human Health”	Lunch seminar (at IUCN headquarters)

Other presentations 2010

EcoHealth – a history. Roundtable discussion. University of Northern British Columbia, Canada.
Pierre Horwitz and Dr Margot Parkes.

Water, Ecology and Health. Pierre Horwitz and Margot Parkes. IUHPE conference Geneva 11th-15th
July.

Integrating Ecohealth and Watershed Management Approaches: Potential and Progress.
Ecohealth2010 Symposium presentation. An integrated framework for linking wetland management
and poverty eradication. Ritesh Kumar, Pierre Horwitz, Randy Milton, Seb Buckton, Sonali
Senaratna Sellamuttu. 18th – 20th August 2010

Wetlands, ecosystem services and human health. P. Horwitz. Ecohealth2010 Paper presentation.
18th-20th August 2010.

FUTURE PLANS AND DIRECTION

Staff and research students involved with the Consortium for Health and Ecology believe the Consortium has a genuine contribution to make within the University. It has developed strategies for the next triennium, with an emphasis on the postgraduate experience, learning capacities, and research opportunities, all dealing with interdisciplinary studies at the intersections of society, health and ecology. This reconfiguration will be presented at a forthcoming Faculty Research and Higher Degree Committee meeting after consultation with the Associate Dean.

DATE OF NEXT FORMAL REVIEW

To be determined.