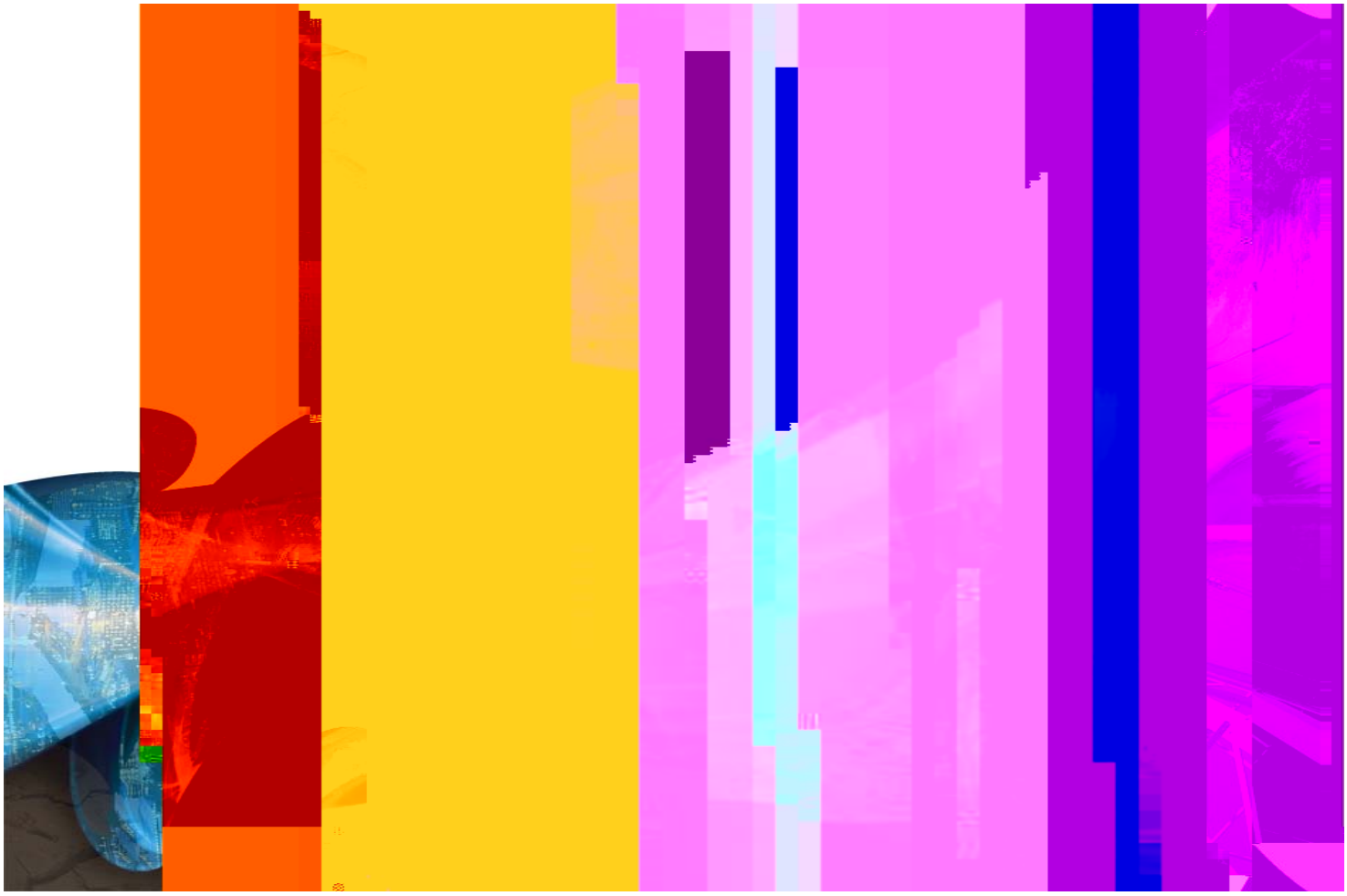

Day 1: Monday 21 November 2011

9.45	TEA AND COFFEE ON ARRIVAL
10.00	Forum Welcome: ACCARNSI Network Convenor Associate Professor Ron Cox
10.15	GUEST SPEAKER Professor Tim Smith, Director, Sustainability Research Centre, University of the Sunshine Coast, Qld
10.45	MORNING TEA
11.15	Population Ageing, Adaptation to Climate Change and the Built Environment Tracie Harvison, University of New South Wales, NSW
11.30	Australian Suburbia: Understanding Everyday Practices of Sharing for Climate Adaptation Millie Rooney, University of Tasmania, TAS
11.45	Past, Present and Future Landscapes: Understanding Alternative Futures for Climate Change Adaptation of Coastal Settlements and Communities Jamie Trammell, University of New England, NSW
12.00	Discussion lead by Professor Tim Smith
12.30	LUNCH
1.15	Climate Change Adaptation: Developing Metrics to Evaluate Effective Adaptation Alianne Rance, EcoLogical Water Solutions, VIC
1.30	Institutional, Legislative and Policy Frameworks for Environmental Planning in NSW: Help or Hindrance to Effective Adaptation? Nadine White, Southern Cross University, NSW
1.45	The Role and Capacity of Developers and the Financial Sector in Climate Change Adaptation Zsuzsa Banhalmi Zakar, Griffith University, QLD
2.00	Discussion lead by Associate Professor

Day 2: Tuesday 22 November 2011

9.15 TEA AND COFFEE ON ARRIVAL

Secular variation in rainfall and temperature in Eastern Australia
9.30 Yi Ru (Lily) Chen, Griffith University, QLD

Impacts of climate change on water resources in South Australia
9.45 Matt Gibbs, South Australian Department of Water, SA

Investigating techniques to reduce evaporation from reservoirs in Australia under climate change threat
10.00 Fernanda Helfer, Griffith University, QLD

Fill the dams? Feasibility of evaporation mitigation methods in dams
10.15 Simon Meares, University of New South Wales, NSW

10.30 Discussion lead by Associate Professor Bill Peirson

10.45 MORNING TEA

Greenhouse Gas Emissions Reduction Strategies for Water Distribution Systems
11.15 Chris Stokes, University of Adelaide, SA

Emissions Reduction
11.30 evaporation

Day 3: Wednesday 23 November 2011

9.00	TEA AND COFFEE ON ARRIVAL
9.15	GUEST SPEAKER TBC Key Engineering issues for Sunshine Coast Council
9.45	GUEST SPEAKER Associate Professor Ron Cox, ACCARNSI Network Convenor Coastal Engineering Guidelines Update
10.15	SESSION TO BE ADVISED
10.45	MORNING TEA
11.15	Changing policies to fit the future: climate adaptation as policy change in South East Queensland, Australia Johanna Mustelin, Griffith University, QLD
11.30	Claiming the coastlines Louise Gates , University of New South Wales, NSW
11.45	How mush is our coast worth? A review of environmental valuation approaches to natural coastal environments Sally Kirkpatrick , Griffith University , QLD
12.00	Uncertainty analysis in planning adaptation for climate change Razieh Mosadeghi , Griffith University , QLD
12.15	GUEST SPEAKER Professor Rodger Tomlinson, ACCARNSI Node 1 Convenor Coastal Adaptation Issues
12.45	LUNCH
1.30	WORKSHOP Participatory Planning using the Sunshine Coast as a case study Sarah Adams, University of the Sunshine Coast, QLD
3.15	AFTERNOON TEA
3.45	Forum Close: ACCARNSI Network Convenor Associate Professor Ron Cox
4.00	AIRPORT SHUTTLE to Brisbane Domestic Airport for return flights home (leaves from USC Sippy Downs campus)

Tracie Harvison, Rachelle Newman and Dr Bruce Judd Newman

BUILT ENVIRONMENT

Millie ROONEY
University of Tasmania, TAS

millie.rooney@utas.edu.au

AUSTRALIAN SUBURBIA: UNDERSTANDING EVERYDAY PRACTICES OF SHARING FOR CLIMATE ADAPTATION

Millie Rooney

Abstract:

Tackling such a large and complex problems as climate change requires an understanding of not just the immediate, but the fundamental factors shaping human æ environment relationships. In this paper I argue the need for further explorations into what Elizabeth Shove terms 'the barely visible gridlines of everyday life'; an understanding of what it is that drives us to live in our cities, our built en(vă ôSPDÀ
Bf2 1k, tmíÀ<0003>Tj/TT1

COASTAL SETTLEMENTS

Jamie TRAMMELL
University of New England, NSW

jamie.trammell@une.edu.au

PAST, PRESENT AND FUTURE LANDSCAPES: UNDERSTANDING ALTERNATIVE FUTURES FOR CLIMATE CHANGE ADAPTATION IN COASTAL SETTLEMENTS AND COMMUNITIES

Jamie Trammell, Phil Morley and David Brunckhorst

Abstract:
Current climate change vulnerability and adaptation studies tend to focus their impacts on present day landscapes, which compounds uncertainty associated with future landscape change. History has shown that, although landscapes are shaped by past elements, future landscape patterns will likely be very different than past landscapes: particularly due to rapidly changing human settlement areas and communities. How those landscapes will be different from today is examined in the Past, Present and Future Landscapes: Understanding Alternative Futures for Climate Change Adaptation of Coastal Settlements and Communities project funded by a Climate Change Adaptation Research Grants Program.

Although still underway, the project has built upon methods of mapping past and current land use trends in order to predict future settlement patterns. Scenarios describing lands(ds)]TJ /TT1 2 1 Tf (2s) 735 0 TD 0 Tc 0 Tw 12 0 0 12 areas 735 0 TD 0 Tc areas

PLANNING & POLICY

Alianne RANCE
EcoLogical Water Solutions, VIC

alianner@elws.com.au

CLIMATE CHANGE ADAPTATION: DEVELOPING METRICS TO EVALUATE EFFECTIVE ADAPTATION

Alianne Rance

Abstract:
With climate change and its impacts accepted by the scientific community and majority of society alike (Clark 2011; Mummery 2011; Philp et al. 2011; Nelson et al. 2007), focus is now shifting towards response mechanisms (Hedger et al. 2008). One approach to attenuating the impacts of climatic change is through 'adaptation' and the development of policies that facilitate this. With awareness of our vulnerability to climate change impacts increasing, Australian coastal communities are attempting to take action through various adaptation strategies and management plans. Yet means to evaluate effectiveness of adaptation action is not yet present on any scale; a significant gap in knowledge has been identified (Preston et al. 2010; Preston & Kay 2010). A tool for establishing a baseline of adaptation compliance and as an ongoing auditing tool will allow the quantification of adaptation within Australian coastal communities and avoid maladaptation.

This paper/presentation discusses findings from an honours thesis (Rance 2011) entitled, 'Climate Change Adaptation: Measuring Individual Community Response in Coastal Australia', a first pass attempt at quantifying adaptation compliance at a coastal community scale. The next step in research is what we can learn and how to move forward in effectively evaluating adaptation to climate change impacts. Research under a PhD is proposed to develop further an evaluation matrix to act as a baseline, and further as an auditing tool to effectively monitor adaptation progress throughout coastal Australia.

PLANNING & POLICY

Nadine WHITE
Southern Cross University, NSW

nadine.white@scu.edu.au

INSTITUTIONAL, LEGISLATIVE AND POLICY FRAMEWORKS FOR ENVIRONMENTAL PLANNING IN NSW: HELP OR HINDRANCE TO EFFECTIVE ADAPTATION?

Nadine White

Abstract:
Parts of New South Wales (NSW) have experienced warming of 1.5 to 2.0 degrees Celsius in the period 1960 to 2009, indicating that the impacts of climate change are already being felt. There is an urgent need for environmental planning and policy that can aid in reducing the negative physical impacts of climate change. Environmental planning by local government in NSW is regulated by state institutions and legislative and policy frameworks. This paper presents a review of these frameworks in the context of tourism (one of the most vulnerable industries to climate change) and climate change adaptation planning.

The study investigates NSW policy documents and legislation in order to identify local government responsibilities for planning for tourism (including strategic and development assessment planning) and for climate change adaptation. Additionally, relevant judicial decisions made in the NSW Land and Environment Court are also analysed. This research is timely in light of the current review of the NSW planning system, and the pace and scale of climatic impacts in areas with high tourism value.

The results indicate that, whilst the NSW planning system appears to be making some progress due to recent legislative changes, the progress is not substantive. Significant improvements, particularly to the Environmental Planning and Assessment Act 1979, need to be made. These changes need to occur as a matter of urgency in order for local governments to plan effectively for the impacts of climate change, thereby reducing the negative impacts of climate change on tourism infrastructure and industries.

PLANNING & POLICY

Zsuzsa BANHALMI-ZAKAR
Griffith University, QLD

z.banhalmi-zakar@griffith.edu.au

THE ROLE AND CAPACTITY OF DEVELOPERS AND THE FINANCIAL SECTOR IN CLIMATE CHANGE ADAPTATION

Zsuzsa Banhalmi-Zakar

Abstract:
The private development sector is one of Australia's largest economic sectors and the recipient of large investment flows. In 2010, new construction finance by the bank sector totalled nearly $3.3 billion, adding to an outstanding credit of $28 billion (RBA 2011). Loans for owner occupied and investment housing from all types of lenders, including banks, totalled $2.7 billion (RBA 2011). Not only is the urban development sector substantial in terms of size, but how the type of developments that materialise, will strongly shape our towns and cities and how they are able to respond and adapt to climate change impacts is a key question.

This working paper is an extension to a research on the role of environment and bank lending practices, and also part of a NCCARF funded larger project that seeks to investigate the institutional capacity of the private urban development sector to respond to the tasks and challenges of climate change adaptation in Australian cities and investigate the role of private financial mechanisims used to finance climate adaptive urban development. This project is appropriate because land use planning and the development, finance and banking sectors were all identified in the SEIDNARP Plan (p. 17 and 18) as stakeholders that need to be engaged in climate adaptation matters.

This presentation will report on the rationale and context for our research project and describes the key issues that we seek to investigate, opening up discussion on how insitutional capacities of the urban development and private financial sector can be studied, measured and evaluated.

Reserve Bank of Australia (RBA) (2011), Lending Commitments - All Lenders, Bank Lending to Business, Money and Credit Statistics,
http://www.rba.gov.au/statistics/tables/index.html

BUILT ENVIRONMENT

Anumitra CHAND
University of New South Wales, NSW

a.chand@unsw.edu.au

INVESTIGATING HOSPITAL FACILITIES RESILIENCE TO CLIMATE RELATED EXTREME WEATHER EVENTS: AN APPLICATION OF RESILIENCE THEORY

Anumitra Chand

Abstract:
The growing incidence of extreme weather events (EWEs) anticipated by climate change such as severe tropical cyclones, major flooding, storms and heatwaves has been widely recognised ((IPCC), 2007). This places a unique challenge for built infrastructure especially hospitals. These provide critical facilities and fundamental service that have to be operational even during disasters. However, research has demonstrated that hospitals services continuity has been compromised by extreme weather during the past recent events (Carthey et al., 2010, Loosemore et al., (Carthey, Chand, t r a

BUILT ENVIRONMENT

Abbie WHITE
University of New South Wales, NSW

abbie.white@unsw.edu.au

A SYSTEMS APPROACH TO ASSESSING THE ADAPTIVE CAPACITY OF HOSPITALS TO COPE WITH CLIMATE CHANGE RELATED EXTREME WEATHER EVENTS

Abbie White

Abstract:
This research is a part of the ARC Linkage Grant "Assessing the adaptive capacity of hospital facilities to cope with climate change related extreme weather events: a risk

INFRASTRUCTURE

Chris STOKES
University of Adelaide, SA

cstokes@civeng.adelaide.edu.au

GREENHOUSE GAS EMISSIONS REDUCTION STRATEGIES FOR WATER DISTRIBUTION SYSTEMS

Chris Stokes

Abstract:
For Australian water utilities, climate change represents a major challenge in the coming decades, both financially and in terms of reliability. Water utilities will need to ensure that their infrastructure can perform within stricter environmental regulations, helping ensure financial security and an ability to maintain viability in an ever increasingly environmentally focussed industry. Water distribution is an energy intensive industry, with the majority of a water utility's electricity consumption being used for pumping. As a large emitter of greenhouse gases (GHG), water utilities have a responsibility to reduce their emissions. In addition to this, reducing GHG emissions will help water utilities to maintain a viable commodity with increasingly stricter climate change policies and financial charges.

To help achieve GHG reductions within the water distribution industry, an accurate model representing the GHG emissions associated with a WDS is required. In order to develop this, a water distribution and electricity consumption (WDEC) framework is presented. The WDEC framework represents the processes required to achieve an optimal WDS design for the objectives of both GHG emission

INFRASTRUCTURE

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INFRASTRUCTURE

Fernanda HELFER
Griffith University, QLD

f.helfer@griffith.edu.au

INVESTIGATING TECHNIQUES TO REDUCE EVAPORATION FROM RESERVOIRS IN AUSTRALIA UNDER CLIMATE CHANGE THREAT

Fernanda Helfer

Abstract:
Climate change is projected to have significant impacts on conditions affecting water supply, such as evaporation. In Australia, research suggests that increased evaporation rates will occur throughout all seasons, with a 0 to 10% increase by 2030 and a 0 to 32% by 2070. The threat of reduced water availability and increased water demand due to growing population and industry is leading the country to research new strategies to reduce evaporation from existent water supply dams. This study investigated the use of destratification by air bubble plumes and suspended covers to reduce evaporation from reservoirs in Australia using modelling. Air bubble plume systems may reduce evaporation by lifting the dam's cold bottom water to the surface and lowering surface temperatures. Suspended covers may reduce evaporation by blocking the incoming solar radiation onto the water surface and also by decreasing the wind speed over the water. When applied to a large farm dam in Queensland, the modelling results showed a great potential for suspended covers to reduce evaporation. For the 300 day period of simulation, the reduction in evaporation with suspended covers was 60%. Destratification, on the other hand, showed not to be an effective technique. The method would reduce evaporation only in spring, when the surface temperatures of the lake would be lowered and kept low. In summer, however, the cold water lifted to the surface would be heated at such a rapid rate, that the surface temperatures would not be kept cold, increasing both the heat stored in the water body and evaporation rates.

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COASTAL SETTLEMENTS

Johanna MUSTELIN
Griffith University, QLD

j.mustelin@griffith.edu.au

CHANGING POLICIES TO FIT THE FUTURE: CLIMATE ADAPTATION AS POLICY CHANGE IN SOUTH EAST QUEENSLAND, AUSTRALIA

Johanna Mustelin

Abstract:
Climate change adaptation has become one of the key policy fields in recent years. The call for urgent adaptation has seen multiple new policies, and the development of risk and vulnerability assessments at Federal, state and local levels in trying to tackle the projected impacts in time. This has increased the responsibilities particularly for local governments and introduced new requirements for policy change. Many local governments in Australia are now in the process of changing their planning schemes to accommodate climate change impacts. This process of policy change however is not as straightforward as we often assume. This presentation outlines some of these intricacies faced by policy and decision makers in South East Queensland in their efforts to adapt to climate

COASTAL SETTLEMENTS

Louise GATES
University of New South Wales, UNSW

louise_gates@hotmail.com

CLAIMING THE COASTLINES

Louise Gates

Abstract:
With the combined effects of development pressures and sea level rise, the coastlines and foreshore areas that we currently take for granted look set to become scarce resources. Australians have a strong affinity with the coast, as evidenced by the escalating value of waterfront properties. Coastal land is subject to a variety of uses, including swimming, surfing and other recreational pursuits, that provide intrinsic and economic benefits to coastal communities. These uses have long formed part of the Australian culture and identity, kindling expectations that they will continue to exist in perpetuity.

Yet, current laws and strategic policies in NSW do not afford adequate recognition or protection to many of the most valuable attributes and uses of coastal areas. In the absence of statutory protection, those common law principles continue to operate which grant private landowners rights to ensure their interests are maintained, potentially at the expense of coastal ecosystem migration and beach amenity. This presentation aims to expose the disparities between the expectations, and the current legal rights, of private landowners, public beach users, and other interested stakeholders under future sea level rise scenarios.

It is argued that common law principles that have traditionally favoured the protection of private property rights are unsuited to future climates. Legislative changes are required to re prioritise and ensure that those characteristics of coastal places that are afforded protection from the rising seas are those that are most highly valued by the greater community.

Babie, Paul, 'Idea, Sovereignty, Eco colonialism and the Future: Four Reflections on Private Property and Climate Change' (2010) 19 Griffith Law Review 527
Coleman, Karen, 'Coastal Protection and Climate Change' (2010) 84 Australian Law Journal
Lipman, Zada and Robert Stokes, 'That sinking feeling: A legal assessment of the coastal planning system in New South Wales' (2011) 28 Environmental Planning and Law Journal 182
McDonald, Jan, 'The role of law in adapting to climate change' (2011) 2 WIREs Climate Change 283
Titus, James, 'Rising Seas, Coastal Erosion and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners' (1998) 57(4) Maryland Law Review 1279
Walrut, Bernard, 'The public right to use the sea and rivers' (2003) 20 Environmental Planning and Law Journal 423

COASTAL SETTLEMENTS

Sally KIRKPATRICK
Griffith University, QLD

s.kirkpatrick@griffith.edu.au

HOW MUCH IS

COASTAL SETTLEMENTS

Sarah ADAMS
University of the Sunshine Coast, QLD

sarahadams2611@gmail.com

UNDERSTANDING ADAPTATION TO CLIMATE CHANGE ON QUEENSLAND'S SUNSHINE COAST

Sarah Adams

Climate change is a complex, multi dimensional problem that is embedded in the way global industrialized societies operate on a daily basis. Climate change is one of several 'wicked problems', characterized by interdependencies, circularities, and conflicts between stakeholders.[1] Defining goals, understanding the scope, and identifying solutions are obstinately difficult tasks for these tricky and aggressive problems.[2]

Research to date on climate change adaptation has focused on objective determinants of adaptive capacity, such as resource constraints.[3,4] However, subjective aspects of adaptive capacity – values, ethics, and risk perceptions – play an equally important role in adaptation decision making.[3,5] The goals of adaptation are rarely discussed or stated explicitly, but differences in goals and priorities among individuals, groups, and institutions can limit adaptation decision making and subsequent action.[4]

Spatial planning at the local scale can act as a "switchboard"[6] for integrating climate change with issues such as population growth, transportation,

The low lying geography is naturally vulnerable to storm surges and flooding, which will likely be exacerbated by climate change, and its dispersed and automobile dependent climate naturally is storm exacerba