



Climate change adaptation research in Australia

An overview of research funded by the
National Climate Change Adaptation
Research Facility



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An overview of research projects funded by the National Climate Change Adaptation Research Facility

Climate change will impact all areas of Australian life – the economy, society and the environment.

The National Climate Change Adaptation Research Facility (NCCARF) was established in 2008 to lead the national interdisciplinary effort to generate the knowledge needed to develop adaptation solutions to manage these impacts.

Since then, NCCARF has developed nine research plans for key sectors of Australian society that identify priorities for research to ensure Australian decision-makers have the knowledge needed to adapt to our changing climate.

NCCARF has commissioned, and now manages, a \$40 million multi-disciplinary research portfolio comprising more than 100 projects. These include projects that address the priorities in the Research Plans, as well as a program of cross-cutting research designed to synthesise and integrate current and emerging climate change adaptation research.

This document provides a summary of NCCARF research currently being undertaken by researchers in universities, government and non-government organisations across all of Australia's state and territories.

For more information on NCCARF's Thematic and Synthesis and Integrative Research Programs visit www.nccarf.edu.au

NCCARF is working to generate the knowledge to guide effective, economic and robust strategies to respond to the impacts of climate change.



Image: FlickrSquared

Primary Industries

Climate change will affect Australia's primary industries in different ways, depending on the type and location of climate impacts and primary production activities. Individual producers and industries will respond in line with their circumstances, awareness, knowledge and capacity, in light of emerging government policies and programs. NCCARF has funded almost \$1 million worth of projects to meet the priorities in the National Climate Change Adaptation Research Plan for Primary Industries, as well as other cross-cutting projects that address priorities for primary industries, terrestrial and freshwater biodiversity. These projects are:

Adaptive capacity and adaptive strategies of broadacre farms experiencing climate change.

Principal Investigator: Ross Kingwell, University of Western Australia

EverFarm® - Design of climate adapted perennial-based farming systems for dryland agriculture in southern Australia.

Principal Investigator: Amir Abadi, Future Farming Cooperative Research Centre

Will primary producers continue to adjust practices and technologies, change production systems or transform their industry? An application of 'Real Options'.

Principal Investigator: Gregory Hertzler, University of Sydney

Climate change adaptation research will build on past and current research, particularly that concerned with climate variability or other external changes.



Potatoes, Atherton Queensland. Image: Rae Allen

Human Health

Climate change poses direct and indirect risks to human health, including injury and death arising from extreme events, shifts in the range of infectious disease, and mental and physical health consequences from social and economic disruption. NCCARF has, through the National Health and Medical Research Council, to date funded projects to the value of almost \$2.8 million, with a target of \$6 million. These projects address the research topics identified in the National Climate Change Adaptation Research Plan for Human Health.

Changing Heat: direct impacts of temperature on health and productivity - current risks and climate change projections.

Principal Investigator: Keith Dear, Australian National University

Climate change and rural communities: Integrated study of physical and social impacts, health risks and adaptive options.

Principal Investigator: Tony McMichael, Australian National University

Dengue transmission under climate change in Northern Australia: linking ecological and population based models to develop adaptive strategies.

Principal Investigator: David Harley, Australian National University

Projection of the impact of climate change on the transmission of Ross River virus disease.

Principal Investigator: Shilu Tong, Queensland University of Technology

Health impacts of climate change on Indigenous Australians: identifying climate thresholds to enable the development of informed adaptation strategies.

Principal Investigator: Donna Green, University of New South Wales

Climate change impacts on workplace heat extremes: Health risk estimates and adaptive options.

Principal Investigator: Elizabeth Hanna, Australian National University

Displaced twice? Investigating the impact of Queensland floods on the wellbeing and settlement of a cohort of men from refugee backgrounds living in Brisbane and Toowoomba.

Principal Investigator: Ignacio Correa-Velez, La Trobe University

Terrestrial Biodiversity

Adaptation is needed to minimise negative impacts on biodiversity and realise potential opportunities. It will involve modifications to current management practices, including the networking of protected areas, restoration of essential habitats and in some cases, engineered strategies to increase the resilience of species or systems to change. NCCARF has funded almost \$3 million worth of research to address the priorities identified in the National Climate Change Adaptation Research Plan for Terrestrial Biodiversity. These projects are:

The architecture of resilient landscapes: scenario modelling to reveal best-practice design principles for climate adaptation.

Principal Investigator: Veronica Doerr, CSIRO

Optimal habitat protection and restoration for climate adaptation.

Principal Investigator: Richard Fuller, University of Queensland

Climate-resilient vegetation of multi-use landscapes: exploiting genetic variability in widespread species.

Principal Investigator: Margaret Byrne, Department of Environment and Conservation, Western Australia

Adaptation strategies for Australian birds.

Principal Investigator: Stephen Garnett, Charles Darwin University

Determining future invasive plant threats under climate change: a decision tool for managers.

Principal Investigator: Lesley Hughes, Macquarie University

Developing management strategies to mitigate increased coextinction rates of plant-dwelling insects through global climate change.

Principal Investigator: Melinda Moir, University of Melbourne

Determining high risk vegetation communities and plants species in relation to climate change in the Australian alpine region.

Principal Investigator: Catherine Pickering, Griffith University

The role of refugia in ecosystem resilience and maintenance of terrestrial biodiversity in the face of global climate change.

Principal Investigator: Stephen Williams, James Cook University

Adapted future landscapes – from aspiration to implementation.

Principal Investigator: Wayne Meyer, University of Adelaide

Planned adaptation will involve modifications to current biodiversity management practices.



Cradle Mountain, Tasmania. Image: Ann Penny

Emergency Management

Climate change is expected to increase the frequency and intensity of natural disasters, especially those associated with warmer conditions such as heat waves and bushfires. The occurrence of storms, droughts and flooding may also increase. NCCARF has funded research to the value of \$1.8 million to address the research priorities detailed in the National Climate Change Adaptation Research Plan for Emergency Management. These projects are:

A spatial vulnerability analysis of urban populations to extreme heat events in Australian capital cities.

Principal Investigator: Margaret Loughnan, Monash University

Recovery from disaster experience: its effect on perceptions of climate change risk and on adaptive behaviours to prevent, prepare, and respond to future climate contingencies.

Principal Investigator: Helen Boon, James Cook University

Agent based simulation framework for improved understanding and enhancement of community and organisational resilience to extreme events.

Principal Investigator: Lin Padgham, RMIT University

Exploring the adaptive capacity of emergency management using agent-based modelling.

Principal Investigator: Lin Padgham, RMIT University

Harnessing private sector logistics for emergency food and water supplies in flood prone areas.

Principal Investigator: Leo Dobes, Australian National University

Public understandings, risk perceptions, and responses to climate change and associated natural disasters.

Principal Investigator: Joseph Reser, Griffith University

Changing perceptions about climate change.

Principal Investigator: Joseph Reser, Griffith University

The Right Tool for the Job: Achieving climate change adaptation outcomes through improved disaster management policies, planning and risk management strategies.

Principal Investigator: Michael Howes, Griffith University

Developing an Excel spread sheet tool for local governments to compare and prioritise investment in climate adaptation.

Principal Investigator: Stefan Trueck, Macquarie University

Understanding the Pacific's adaptive capacity to emergencies in the context of climate change.

Principal Investigator: Juliet Willetts, University of Technology, Sydney

Adaptation of the built environment to climate change induced increased intensity of natural hazards.

Principal Investigator: David King, James Cook University



Climate change is expected to increase the frequency and intensity of natural disasters.

Image: NSW SES

Indigenous Communities

The National Climate Change Adaptation Research Plan for Indigenous Communities takes a cross-sectoral approach to consider the risks, vulnerability and adaptive capacity of Aboriginal and Torres Strait Islander Communities living in remote, regional or urban locations. NCCARF has funded research valued at more than \$2 million to meet the priorities identified in the Plan. These projects are:

Learning from the past, adapting in the future: identifying pathways to successful adaptation in Indigenous communities.

Principal investigator: Meg Parsons, University of Melbourne

Living Change: Adaptive housing responses to climate change in the town camps of Alice Springs.

Principal investigator: Ralph Horne, RMIT University

Indigenous voices in climate change adaptation: Addressing the challenges of diverse knowledge systems in the Barmah-Millewa.

Principal investigator: Dave Griggs, Monash University

Aboriginal responses to climate change in arid zone Australia – Regional understandings and capacity building for adaptation.

Principal investigator: Paul Memmott, University of Queensland

Understanding how the use of intertidal marine resources by Indigenous women in the Northern Territory will be affected by climate change and their referred adaptation options.

Principal investigators: Ann Fleming, Northern Territory Government; Andrew Campbell, Charles Darwin University

Towards a framework and process to identify Indigenous vulnerability and adaptive capacity to climate change.

Principal investigator: Daryl Low Choy, Griffith University

Future change in ancient worlds: Indigenous adaptation in northern Australia.

Principal investigator: Steve Larkin, Charles Darwin University

Community based adaptation to climate change: the Arabunna, South Australia.

Principal investigator: Melissa Nursey-Bray, University of Adelaide

Few studies have explored the vulnerability and adaptive capacity of Indigenous individuals, households, communities, businesses and institutions.



High tide, Torres Strait. Image: Annabel Jones

Settlements and Infrastructure

Climate change poses significant threats to the social fabric of our towns and cities, and to our urban and strategic infrastructure. Developing adaptation options will be critical in reducing these impacts. NCCARF has funded more than \$5.2 million in research to meet the priorities identified in the National Climate Change Adaptation Research Plan for Settlements and Infrastructure. These projects are:

Past, present and future landscapes: Understanding alternative futures for climate change adaptation of coastal settlements and communities.

Principal Investigator: Phil Morley, University of New England

Reforming planning processes trial: Rockhampton 2050.

Principal Investigator: Penelope Fry, Rockhampton Regional Council

Development of tools that allow local governments to translate climate change impacts on assets into strategic and operational financial and asset management plans.

Principal Investigator: Jacqueline Balston, University of South Australia

A model framework for assessing risk and adaptation to climate change on Australian coasts.

Principal Investigator: Colin Woodroffe, University of Wollongong

Enhancing the resilience of seaports to a changing climate.

Principal Investigator: Darryn McEvoy, RMIT University

Limp, leap or learn?: Developing a legal framework for adaptation planning in Australia.

Principal Investigator: Jan McDonald, University of Tasmania

Australia's Country Towns 2050: What will a climate adapted settlement pattern look like?

Principal Investigator: Andrew Beer, University of Adelaide

Strata Title in a world of climate change: Managing greater uncertainty in forecasting and funding common property capital expenditure.

Principal Investigator: Chris Guilding, Griffith University

A Framework for adaptation of Australian households to heat waves.

Principal Investigator: Wasim Saman, University of South Australia

Robust optimisation of urban drought security for an uncertain climate.

Principal Investigator: George Kuczera, University of Newcastle

Analysis of institutional adaptability to redress electricity infrastructure vulnerability due to climate change.

Principal Investigators: John Foster, Uniquist University of Queensland; Deepak Sharma, University of Technology, Sydney.

Climate change and the community welfare sector – Risks and adaptation

Principal Investigator: Karl Mallon, Australian Council of Social Service

Coastal urban climate futures in SE Australia: from Wollongong to Lakes Entrance

Principal Investigator: Barbara Norman, University of Canberra

What would a climate-adapted Australian settlement look like?

Principal Investigator: Dave Griggs, Monash University

Pathways to climate adapted and healthy low-income housing.

Principal Investigator: Guy Barnett, CSIRO

Marine Biodiversity and Resources

Climate change is already impacting marine biodiversity, resources and important coastal habitats through changes in the physical and chemical features of the marine environment, ocean warming and changes in currents. NCCARF, in conjunction with the Fisheries Research Development Corporation, has allocated close to \$6 million for research to meet the priorities detailed in the National Climate Change Adaptation Research Plan for Marine Biodiversity and Resources. Projects underway are:

Adaptive management of temperate reefs to minimise effects of climate change: developing effective approaches for ecological monitoring and predictive modelling.

Principal Investigator: Neville Barrett, University of Tasmania

Adapting to the effects of climate change on Australia's deep marine reserves.

Principal Investigator: Ron Thresher, CSIRO

Vulnerability of an iconic Australian finfish (Barramundi, *Lates calcarifer*) and related industries to altered climate across tropical Australia.

Principal Investigator: Dean Jerry, James Cook University

Identification of climate-driven species shifts and adaptation options for recreational fishers: learning general lessons from a data rich case.

Principal Investigator: Daniel Gledhill, CSIRO

Management implications of climate change impacts on fisheries resources of northern Australia.

Principal Investigator: David Welch, James Cook University

Changing currents in marine biodiversity governance and management responding to climate change.

Principal Investigator: Michael Lockwood, University of Tasmania

Ensuring that the Australian oyster industry adapts to a changing climate: a natural resource and industry spatial information portal for knowledge action and informed adaptation frameworks.

Principal Investigator: Andrew Davis, University of Wollongong

Human adaptation options to increase resilience of conservation-dependent seabirds and marine mammals impacted by climate change.

Principal Investigator: Alistair Hobday, CSIRO

Management implications of climate change effects on fisheries in Western Australia.

Principal Investigator: Nick Caputi, Western Australian Fisheries and Marine Research Laboratories

Beach and surf tourism and recreation in Australia: vulnerability and adaptation.

Principal Investigator: Mike Raybould, Bond University

Effects of climate change on reproduction, larval development and population growth of coral trout.

Principal Investigator: Morgan Pratchett, James Cook University

Pre-adapting a Tasmanian coastal ecosystem to ongoing climate change through reintroduction of a locally extinct species.

Principal Investigator: Nicholas Bax, University of Tasmania

A climate change adaptation blueprint for coastal regional communities.

Principal Investigators: Stewart Frusher, University of Tasmania; Nadine Marshall, CSIRO

Climate change adaptation - building community and industry knowledge.

Principal Investigator: Jenny Shaw, Western Australian Marine Science Institute

Preparing fisheries for climate change: identifying adaptation options for four key fisheries in South Eastern Australia.

Principal Investigator: Gretta Pecl, University of Tasmania

Estuarine and nearshore ecosystems – assessing alternative adaptive management strategies for the management of estuarine and coastal ecosystems.

Principal Investigator: Marcus Sheaves, James Cook University

Growth opportunities and critical elements in the value chain for wild fisheries and aquaculture in a changing climate.

Principal Investigator: Alistair Hobday, CSIRO

Climate change may have serious implications for the communities and industries that depend on the resources and services provided by marine ecosystems.



Eden Pier. Image: Harry Kontos

Freshwater Biodiversity

Climate change will alter the structure and composition of freshwater ecological communities, they way these ecosystems function and the services they provide. Research is needed to support governments, conservation agencies, landowners, communities and individuals to implement effective adaptation strategies. NCCARF, together with the National Water Commission, has funded \$2.5 million in research to meet the priority research questions identified in the National Climate Change Adaptation Research Plan for Freshwater Biodiversity.

Novel methods for managing freshwater refuges against climate change in southern Australia.

Principal Investigator: Belinda Robson, Murdoch University

Predicting water quality and ecological responses to a changing climate: informing adaptation initiatives.

Principal Investigator: Fiona Dyer, University of Canberra

Joining the dots: integrating climate and hydrological projections with freshwater ecosystem values to develop adaptation options for conserving freshwater biodiversity.

Principal Investigator: Leon Barmuta and Peter Davies, University of Tasmania

Adaptive management of Ramsar wetlands.

Principal Investigator: Richard Kingsford, University of New South Wales

Impacts of elevated temperature and CO₂ on the critical processes underpinning resilience of aquatic ecosystems.

Principal Investigator: Ross Thompson, Monash University

Building the climate resilience of arid zone freshwater biota: identifying and prioritising processes and scales for management.

Principal Investigator: Jenny Davis, Monash University

Identification and characterisation of freshwater refugia in the face of climate change.

Principal Investigator: Jeremy Van Der Wal, James Cook University

Adapting to climate change: a risk assessment and decision framework for managing groundwater dependent ecosystems with declining water levels.

Principal Investigator: Jane Chambers, Murdoch University

Contributing to a sustainable future for Australia's biodiversity under climate change: conservation goals for dynamic management of ecosystems.

Principal Investigator: Michael Dunlop, CSIRO

Climate change will alter the basic physical and chemical environment underpinning all life.

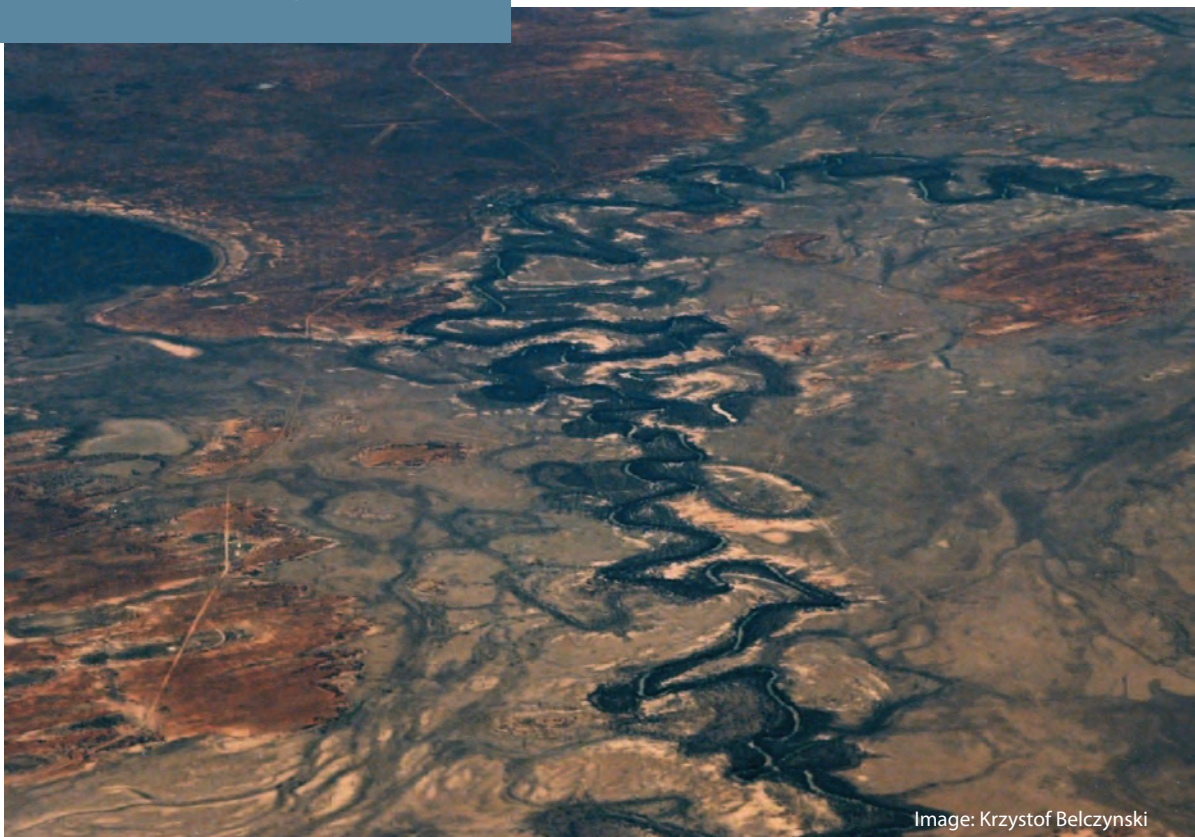


Image: Krzysztof Belczynski

Social, Economic and Institutional Dimensions

Past climate change research and policy has largely focussed on the biophysical dimensions of climate change. The National Climate Change Adaptation Research Plan for Social, Economic and Institutional Dimensions instead prioritises research that will generate information on the risks posed to, and opportunities generated for, social and economic systems. It considers how social, economic and institutional factors can contribute to, or hinder effective adaptation. NCCARF has funded more than \$4.5 million in research to address the priorities detailed in this Plan.

Extreme heat and climate change: adaptation in culturally and linguistically diverse (CALD) communities.

Principal Investigator: Peng Bi, University of Adelaide

What about me? Factors affecting individual adaptive coping capacity across different population groups.

Principal Investigator: Kerrie Unsworth, University of Western Australia

Impact of climate change on disadvantaged groups: Issues and interventions.

Principal Investigator: Graeme Hugo, University of Adelaide

The Legal, Institutional and Cultural Barriers to Adaptation to Sea-Level Rise in Australia.

Principal Investigator: Jon Barnett, University of Melbourne

Changes to country and culture, changes to climate: Strengthening institutions for Indigenous resilience and adaptation.

Principal Investigator: Jessica Weir, Australian Institute of Aboriginal and Torres Strait Islander Studies

Heat-ready: Adapting aged care facilities to prevent premature death in elderly Australians.

Principal Investigator: Deborah Black, University of Sydney

Every state for themselves? Learning from cross-border regulatory instruments to support and promote climate change adaptation in Australia.

Principal Investigator: Wendy Steele, Griffith University

An assessment of Australia's existing statutory frameworks, associated institutions, and policy processes: do they support or impede national adaptation planning and practice?

Principal Investigator: Karen Hussey, Australian National University

Social networks analysis: bridging degrees of separation to enhance climate change adaptation.

Principal Investigator: Susan Kinnear, Central Queensland University

Costs and coasts: an empirical assessment of physical and institutional climate adaptation pathways.

Principal Investigator: Ryan McAllister, CSIRO

Valuing adaptation under rapid change: anticipatory adjustments, maladaptation and transformation.

Principal Investigator: Roger Jones, Victoria University

Rental housing, climate change and adaptive capacity: a case study of Newcastle, NSW.

Principal Investigator: Lesley Instone, University of Newcastle

Enhancing the adaptive capacity of small-to-medium enterprises (SMEs) to climate change and variability.

Principal Investigator: Natasha Kuruppu, University of Technology, Sydney

Cognitive and affective barriers to climate change adaptation: Exploring the risk and adaptation appraisals of South Australians to different climate risks.

Principal Investigator: Peng Bi, University of Adelaide

Water Trade, Climate Change and Irrigator Adaptability in the Murray-Darling Basin.

Principal Investigator: Sarah Wheeler, University of South Australia

Assessing the potential for, and limits to, insurance and market-based mechanisms for encouraging climate change adaptation.

Principal Investigator: John McAneney, Macquarie University

Developing adaptively: The role and capacities of private sector development institutions in urban climate change adaptation.

Principal Investigator: Jago Dodson, Griffith University

There is a need for research that can develop a theoretical and empirical basis to inform decision making about adaptation by individuals, households, communities, businesses and governments.



Image: Cain Doherty

NCCARF Synthesis and Integrative Research Program

A core function of NCCARF is to conduct a program of cross-cutting research that synthesises and integrates current and emerging national and international climate change adaptation knowledge. NCCARF has funded more than \$5 million worth of projects that include case studies focussing on specific regions, industries and climate events, and cross-sectoral projects that tackle specific aspects of the adaptation challenge.

Stage I projects:

An assessment of the nature and utility of adaptive capacity research.

Principal Investigator: Tim Smith, University of the Sunshine Coast

Historical Case Studies of Extreme Events

Historical Case Studies: Adaptation lessons from Cyclone Tracy.

Principal Investigator: John McAneney, Macquarie University

Historical Case Studies: Adaptation lessons from Cyclone Tracy Part II - The institutional response and Indigenous experience of Cyclone Tracy.

Principal Investigator: Katharine Haynes, Macquarie University

Historical Case Studies: East Coast Lows and the Newcastle-Central Coast Pasha Bulker storm.

Principal Investigator: Garry Willgoose, University of Newcastle

Historical Case Studies: Storm tides.

Principal Investigator: Rodger Tomlinson, Griffith University

The 2008 floods in Queensland: A case study of vulnerability, resilience and adaptive capacity.

Principal Investigator: Armando Apan, University of Southern Queensland

Historical Case Studies: Drought and the future of small inland towns.

Principal Investigator: Anthony Kiem, University of Newcastle

Historical Case Studies: Resilience and water security in two outback cities.

Principal Investigator: Glen Albrecht, Murdoch University

Historical Case Studies: Impacts and adaptation response of infrastructure and communities to heat waves - the southern Australian experience of 2009.

Principal Investigator: Jim Reeves, Queensland University of Technology

Learning from experience: Historical Case Studies and Climate Change Adaptation (Synthesis Report).

Principal Investigator: Anthony Kiem, University of Newcastle

A suite of case studies explores lessons learned from the management of past extreme events.



Gold Coast storm tide. Image: Michael Mitchell

Synthesis and Integrative Research Stage I projects continued

An assessment of the vulnerability of Australian forests to climate change

Forest Vulnerability Assessment Part I : Establish needs and consult with key stakeholders.

Principal Investigator: Helen Wallace, University of the Sunshine Coast

Forest Vulnerability Assessment Part II: Scene setting and biophysical impacts review.

Principal Investigator: Belinda Medlyn, Macquarie University

Forest Vulnerability Assessment Part III: Socio-economic impacts review.

Principal Investigator: Geoff Cockfield, University of Southern Queensland

Forest Vulnerability Assessment Part IV: Adaptive capacity, barriers to adaptation and vulnerability.

Principal Investigator: Steve Turton, James Cook University

Forest Vulnerability Assessment Part V: Synthesis and final report.

Principal Investigator: Roger Kitching, Griffith University

A suite of five projects examines impacts and adaptation options for Australian forests.



Huon River Tasmania, Image Ann Penny

Synthesis and Integrative Research

Stage II projects

Coastal ecosystems responses to climate change - adapting to climate change in the coastal zone.

Principal Investigator: Wade Hadwen, Griffith University

Limits to adaptation

Limits to Adaptation: Limits to adaptation and conflict management in the Great Barrier Reef.

Principal Investigator: Louise Evans, James Cook University

Limits to Adaptation: Limits to adaptation of Australian alpine areas.

Principal Investigator: Catherine Pickering, Griffith University

Limits to Adaptation: Limits to adaptation in the Coorong Wetlands.

Principal Investigator: Catherine Gross, Australian National University

Limits to Adaptation: Limits to climate change adaptation in floodplain wetlands: the Macquarie Marshes.

Principal Investigator: Richard Kingsford, University of New South Wales

Limits to Adaptation: Limits to climate change adaptation for two low-lying communities in the Torres Strait.

Principal Investigator: Scott Smithers, James Cook University

Limits to Adaptation: Limits to climate change adaptation for small inland communities affected by drought.

Principal Investigator: Anthony Kiem, University of Newcastle

Synthesis and Integrative Research Stage II projects continued

Investigating factors that inhibit and enable adaptation strategies following the 2010/11 floods.

Principal Investigator: David King, James Cook University

Literature review: impacts of climate change:

iClimate Project - a searchable database on climate change impacts and adaptation in Australia.

Principal Investigator: Elvira Poloczanska, CSIRO

Learning from regional climate analogues.

Principal Investigator: Jon Kellett, University of South Australia

A suite of NCCARF projects examines the management of flooding in Australia.



Brisbane, January 2011. Image: Erik K Veland

Synthesis and Integrative Research Stage III projects

Flooding in Australia

Flooding in Australia: Living with floods - key lessons from Australia and abroad.

Principal Investigator: Karen Hussey, Australian National University

Flooding in Australia: Extractive resource development in a changing climate - learning the lessons from recent weather events in Queensland, Australia.

Principal Investigator: Vigya Sharma, University of Queensland

Flooding in Australia: Damage to buildings during the 2010-2011 Eastern Australia flooding events.

Principal Investigator: Matthew Mason, Macquarie University

Dealing with uncertainty in climate scenarios for adaptation

Uncertainty: Bridging the gap between end user needs and science capability - dealing with uncertainty in future scenarios.

Principal Investigator: Danielle Verdon-Kidd, University of Newcastle

Uncertainty: Understanding end-user decisions and the value of climate information under the risks and uncertainties of future climates.

Principal Investigator: Alan Randall, University of Sydney

Web-based tools for adaptation in Australia

Web based tools for adaptation in Australia – an international and Australian review.

Principal Investigator: Bob Webb, Australian National University

Synthesis and Integrative Research Stage III projects continued

Adaptation and mitigation

Adaptation and Mitigation: Identifying low risk climate change mitigation and adaptation in catchment management while avoiding unintended consequences.

Principal Investigator: Max Finlayson, Charles Sturt University

Ensuring secure food supplies for Australia under climate change

Food Security: Impact of climate change for risk management: How prepared are food industry leaders?

Principal Investigator: David Michael, Wondur Business and Technology Services

Food Security: Creating a climate for food security: the business, people and landscapes in food production.

Principal Investigator: Angela Wardell-Johnson, University of the Sunshine Coast

Food Security: Urban food security, urban resilience and climate change.

Principal Investigator: Paul Burton, Griffith University

Communication and adapting to climate change

Communication: Enhancing climate change communication: strategies for profiling and targeting Australian interpretive communities.

Principal Investigator: Donald Hine, University of New England

Communication: Climate change adaptation in the boardroom.

Principal Investigator: Gareth Johnston, Future Ready Pty Ltd

Barriers to adaptation

Overcoming Barriers: Cross-scale barriers to adaptation in local government, Australia.

Principal Investigator: Natasha Kuruppu, University of Technology, Sydney

Adaptation in industry and business

Industry and Business: Climate change adaptation for Australian minerals industry professionals: Best practice guidelines.

Principal Investigator: Damian Giurco, University of Technology, Sydney

Industry and Business: Climate change adaptation: A framework for best practice in financial risk assessment, governance and disclosure.

Principal Investigator: Jason West, Griffith University

Overcoming challenges for decision making about climate change adaptation

Systems Thinking: Adapt Between the Flags - Enhancing the capacity of Surf Life Saving Australia to cope with climate change and to leverage adaptation within coastal communities.

Principal Investigator: Marcello Sano, Griffith University

Systems Thinking: Overcoming challenges for decision making about climate change adaptation.

Principal Investigator: Kambiz Maani, University of Queensland

Economics of climate change adaptation

Economics: Leading gifted horses to water: the economics of climate adaptation in government-sponsored irrigation in Victoria.

Principal Investigator: Lin Crase, La Trobe University

Economics: Economics of government as insurer of last resort for climate change adaptation.

Principal Investigator: Leo Dobes, Australian National University



NCCARF projects examine the economics of climate change adaptation.



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