

Climate Impacts on Australia's Natural Resources: Current and Future Challenges

*Crowne Plaza Surfers Paradise
25th to 27th November 2003*

www.climateimpacts.com.au

Invitation

On behalf of the Standing Committee of the Natural Resource Ministers Council (NRMC) I have great pleasure in inviting you to a National Conference on Climate Impacts on Australia's Natural Resources: Current and Future Challenges from 25th to 27th November 2003 at the Crowne Plaza, Surfers Paradise, Queensland.

There is a growing awareness that climate variability is an important consideration in natural resource management and that climate change will bring with it a whole suite of new challenges.

The conference will provide natural resource managers from across the country with the most up-to-date scientific knowledge regarding the challenges posed by climate change and climate variability. This will assist us in the important next step of developing adaptive and mitigative management strategies to ensure future resource sustainability.

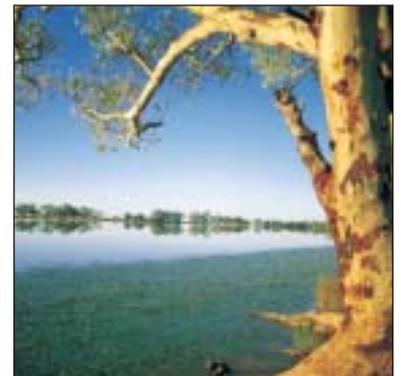
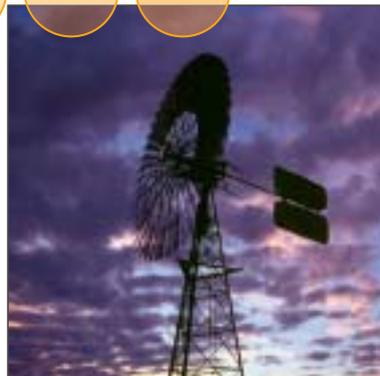
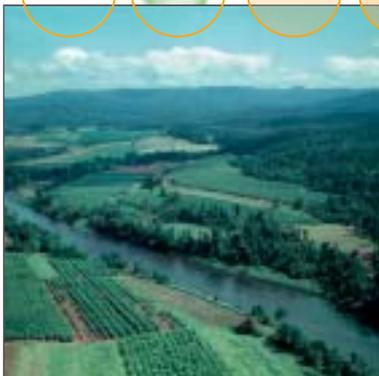
While much of what we hear regarding possible climate conditions in the future is of great concern, I believe we are being given a key opportunity to focus now on real changes needed by the next generation of resource managers. For this reason I would encourage resource users, resource allocators, community level stakeholders and policy setters who are concerned with the challenges facing Australia's natural resource base to attend this important event.

It is an opportunity for attendees to influence the direction of future policy and research directions for better managing climate impacts on natural resources, as the proceedings of this conference will be included into the national agenda of the natural resource management considerations of Ministers, Chief Executives and other senior players in both private and public sectors.

The organising Committee looks forward to your support for the conference.



Terry Hogan
Chair
Programs Committee of the NRMC Standing Committee and
Conference Host



Conference Background

Available observational evidence indicates that regional changes in climate, particularly increases in temperature, have already affected a diverse set of physical and biological systems in many parts of the world. Despite Australia's water limited environment and large year-to-year climatic variability Australian ecosystems have quite limited climate ranges/thresholds. Thus attempts to improve the strategic management of Australian ecosystems will need to consider both current and future climate conditions to ensure sustainability.

Conference Aims

The conference will provide natural resource managers from across the country with the most up-to-date scientific knowledge regarding climate change and climate variability impacts on natural and managed systems.

In addition the conference will provide delegates, from across Australia, an opportunity to begin to identify practical steps towards more adaptive natural resource management to build resilience to future climate variability and change.

Conference Outcomes

The conference has been developed in such a way as to allow both presentations and parallel workshop sessions. The workshops will provide an opportunity for scientists, resource managers, resource allocators, community level stakeholders and policy setters to discuss and possibly identify:

1. Adaptation and/or amelioration strategies to build resilience to climate variability and change,
2. Synergies and barriers that may exist with regard to improved adaptation to climate variability and change; and
3. Knowledge gaps and research priorities.

The information generated by the parallel workshop sessions will be presented to the Commonwealth Natural Resource Standing Committee for consideration.

Who Should Attend?

- Regional bodies and catchment management groups involved in natural resource management planning through national grant programs such as the National Heritage Trust (NHT) and the National Action Plan for Salinity and Water Quality (NAP);
- Local government bodies that have legislative responsibilities with regard to natural resource management;
- Industries currently involved in natural resource allocation, conservation and management;
- Federal and State agencies involved in natural resource management, protection and strategic policy planning that encompasses natural resource use; and
- Resource users, resource allocators, community level stakeholders and policy setters who are concerned with the challenges facing Australia's natural resource base in response to climate variability and climate change.

keynotes

Dr Habiba Gitay

Dr Gitay has over 15 years experience researching and teaching in many parts of the world in the fields of ecology, environmental management and impacts of climate change on ecosystems. Until recently she was based at the Australian National University. At present, she is the Capacity Building Coordinator of the Millennium Ecosystem Assessment (MA) where she has developed various activities (aimed at a range of audience – Conventions, private organisation, NGOs and the academic communities) to highlight the usefulness of assessments and the multi-scale and multiple pressure approaches taken by the MA. She has been a Coordinating Lead Author for various reports of the Intergovernmental Panel on Climate Change (IPCC) since 1992. Her other international activities in the last four years have included being a senior adviser to the World Resources Institute Reports, one of the main authors on technical reports on climate change and biodiversity/wetlands for the Convention on Biological Diversity and the Ramsar Convention. She has recently been elected as the Vice-Chair of the Scientific and Technical Advisory Panel of the Global Environment Facility.

Dr Barrie Pittock

Dr Barrie Pittock was senior scientist for CSIRO in atmospheric research from 1965 until 1999, and led the Climate Impact Group there from 1988 until his retirement. He continues research as a post-retirement fellow and is currently writing a guide (in press) to climate change science, impacts and adaptation for the Australian Greenhouse Office. He has been a major contributor to the Intergovernmental Panel on Climate Change First, Second and Third Assessment Reports and was lead author on a chapter dealing with climate change impacts, adaptation and vulnerability in Australia and New Zealand in 2001. He was awarded a Public Service Medal in 1999 and in 2003 the group he currently works with was awarded the Sherman Eureka Prize for Environmental Science.

Theme 1

Contemporary and Future Australian Climate Challenges

Dr Neville Nicholls

Commonwealth Bureau of Meteorology

Neville leads the Climate Forecasting Group at the Bureau of Meteorology Research Centre in Melbourne. Neville has been an Editor of the Journal of Climate of the American Meteorological Society, was a Convening Lead Author of the IPCC Second Assessment on Climate Change, and this year has been involved in the scoping meetings for the IPCC Fourth Assessment. His presentation will be on the influence of climate change on recent Australian droughts, climate trends and the Australian snow season.

Dr Geoffery Love

Commonwealth Bureau of Meteorology

Goeff Love has recently been appointed to the position of Director of the Commonwealth Bureau of Meteorology after being Secretary of the Intergovernmental Panel on Climate Change (IPCC) since 2002. He has served as Vice President (1996-2000) and President (2000-02) of the World Meteorological Organisation Commission for Basic Systems (CBS). He has published a large number of scientific papers on tropical meteorology, climate and various aspects of applied meteorology and has a keen scientific interest in the climate change and climate variability. His presentation will address the issue of national policy responses to climate variability and climate change.

Dr Penny Whetton

CSIRO Atmospheric Research

Penny is currently the leader of the Climate Impact Group at the CSIRO Division of Atmospheric Research. Research activities have mainly involved analysis of climate model output for enhanced greenhouse conditions and its application in impact studies. The presentation will be aimed at providing delegates with a clearer understanding of the extent of Australia's future climate change over the next 30 to 70 years.

Dr Kevin Walsh

Melbourne University

Kevin is a Senior Lecturer in the School of Earth Sciences at the University of Melbourne. His research interests include tropical cyclones, extreme events, climate change and the potential implications for the Australian coastline. His presentation will examine the potential impacts of climate change on coastal vulnerability, with particular reference to possible changes tropical cyclone intensity and occurrence.

Theme 2

Water Resources

Dr Roger Jones

CSIRO Atmospheric Research

Roger is a senior research scientist at CSIRO Atmospheric Research working in the area of climate risk and integrated assessment. He is presently undertaking risk assessments on climate change and water resources in Queensland, New South Wales and Victoria. He is also working on a risk-based approach for assessing climate change with a number of international agencies and was a lead author for the Intergovernmental Panel on Climate Change Third Assessment Report. Roger's presentation will describe continued efforts to understand the direct impact of climate change on Australian water resources and on related land-use feedbacks within catchments.

Prof. Angela Arthington

Griffith University

Angela is Professor of Freshwater Ecology in the Faculty of Environmental Sciences at Griffith University, Brisbane. She leads a research program on "Water Allocation and Environmental Flows" in the Centre for Riverine Landscapes at Griffith, and works with three of Australia's Co-operative Research Centres: Freshwater Ecology; Rainforest Ecology, and Sustainable Tourism. Her chief research interests are the ecology and flow requirements of freshwater fish, and the science and management of river ecosystems, and has developed holistic environmental flow methods used widely in Australia and internationally. Angela will discuss the effects of climate change on water resources, and the implications for river flow regimes and aquatic biodiversity. Her presentation will also deal with the issues of adaptive river flow management and provision of environmental flows under changing climate scenarios.

Dr Bryson Bates

CSIRO Land And Water

Bryson Bates is a senior principal research scientist and team leader for the Hydroclimatic Processes and Impacts Group in CSIRO Land and Water. His research interests include scaling and space-time modelling of hydroclimatic data, inter-seasonal climate forecasting using both statistical and dynamical modelling methods, and the effects of climate forcing on rivers, river health and the operation of water supply systems. Bryson's presentation will deal with the challenges of managing water resources under conditions of climate uncertainty.

Theme 3

Biodiversity

Dr Lesley Hughes

Macquarie University

Lesley Hughes is a senior lecturer in ecology in the Department of Biological Sciences at Macquarie University. Her research interests are in the field of plant-animal interactions and the impact of climate change on species and ecosystems. Lesley's presentation will include a discussion of the current and potential impacts of climate change on terrestrial species communities in Australia.

Dr Michael Dunlop

CSIRO Sustainable Ecosystems

Michael has a background in applied physics, plant and animal ecology, and analysing the long-term future of the nation's land, water and biodiversity. He recently spent six months working in Environment Australia on biodiversity and climate change policy and is now on a multi-jurisdiction task group that is developing a National Biodiversity and Climate Change Action Plan for Australia. Michael will talk about strategies for protecting biodiversity against the threats of climate change and facilitating the long-term natural adaptation of biodiversity to future climates.

Dr Dave Hilbert

CSIRO Sustainable Ecosystems

David Hilbert is a principal research scientist at CSIRO's Tropical Forest Research Centre in Atherton, Queensland. He has worked in the area of global climate change impacts on natural ecosystems since the late 1980's. David's presentation will include a comprehensive discussion of the threat of climate change to ecosystems and biodiversity in the Wet Tropics.

Dr Chris Chilcott

QLD Department Natural Resources and Mines

Chris Chilcott is a Senior Environmental in the Climate Impacts and Natural Resource Systems Group, Queensland Department of Natural Resources. His research interests cross a variety of scientific disciplines including ecosystem processes, landscape design and grazing land management. His presentation will address the role of climate variability and climate change in ecosystem function and the assessment of threshold in landscape conservation.

Theme 4

Bushfires and Associated Air Quality

Dr Geoffrey Cary

The Australian National University

Geoff Cary is a lecturer in fire science at the School of Resources, Environment and Society at The Australian National University. His research interests include modelling fire regimes at the landscape scale and understanding the impact of management (e.g. prescribed burning) and climate change on the nature of fire regimes in natural systems. He is a researcher in the recently announced Bushfire Cooperative Research Centre. Geoff's presentation will focus on the probable impacts of climate change on fire regimes in natural systems and the implications for fire management.

Dr Kevin Tolhurst

Melbourne University

Kevin is a senior lecturer at the School of Resource Management, at the University of Melbourne where he currently teaches fire ecology and fire risk management. His research interests are ecological impact of repeated low intensity prescribed burning, fire behaviour prediction, fire risk and landscape scale ecological fire management. Kevin will discuss the ecological impacts of fire as well as the development of adaptive management through risk assessment and fire prediction.

Theme 5

Land Use and Landscape Management

Dr Mark Howden

CSIRO Sustainable Ecosystems

Mark Howden is a Principal Research Scientist with CSIRO Sustainable Ecosystems. His specialist areas are the dynamics of grazed and cropped ecosystems, development of innovative and sustainable farming systems, impacts of climate variability and climate change on agro-ecosystems and urban systems and adaptations to these impacts, development of greenhouse gas inventories for the agricultural sector and investigations of sustainable methods of reducing greenhouse emissions from agriculture. He has been a significant contributor to the IPCC Second and Third Assessment reports and the IPCC Regional Impacts Report as co-Convening Lead Author, Lead Author and Review Editor. His presentation will address the implications of increases in atmospheric CO₂ and climate change on cropping systems, and landuses involving woody perennials such as horticulture, viticulture and forestry. Land management adaptations and likely land use changes will also be briefly addressed.

Dr Graham Turner

CSIRO Sustainable Ecosystems

Graham Turner is a senior analyst with the National Futures Group at CSIRO Sustainable Ecosystems. His recent research interests include: assembling national physical accounts of Australian agricultural history and fisheries; creating and implementing national, regional and mega-metropolitan physical economy frameworks; examining global resource-based models; designing, creating and analysing scenarios such as dematerialisation of the economy and the impacts of climate change; and developing an account of pollutants and toxicants. Graham will be presenting an assessment of the interactions between climate change, land-use and landscape management as well as considering the feedback effects of land use on climate.

Dr Greg McKeon

QLD Department Natural Resources and Mines

Greg McKeon is Senior Principal Climate Change Scientist in the Climate Impacts and Natural Resource Systems Group, Queensland Department of Natural Resources. His research interests cross a variety of scientific disciplines used to determine factors affecting the profitability and sustainability of natural grazing lands of Queensland (including climate change impacts; use of climate forecasting in grazing management; objective drought assessment; and calculation of risk of pasture degradation). His presentation will address the role of climate variability and land use in determining the extent and intensity of historical landscape degradation events in Australia. In addition he will discuss the issue of adaptive landscape management as a means of preventing similar degradation events in the future.

Mr Andrew Petersen

Price Waterhouse Coopers

Andrew is a Partner in both PricewaterhouseCoopers (PwC) Legal and PwC Greenhouse Councils. He is an executive member of Environment Business Australia and member of the Waste Management Association of Australia. He is widely respected for his expertise in the areas of environmental planning and assessment law, pollution prevention and control, land use planning and control, and conservation and natural resources law. Andrew has a particular interest in sustainability and Climate Change, and has attended several of the recent International Conferences of the Parties (COPs) on Climate Change.

Andrew's presentation will examine Australian and regional policy frameworks and government regulations which have a direct financial impact on the natural resources sector as well as the some of the financial and legal pressures facing the natural resources industry to assume corporate responsibility for climate change.

Theme 6

Pests, Diseases and Exotic Organisms

Dr David Cheal

Arthur Rylah Institute for Environmental Research

David is the manager for the Flora Ecology Research Group, for the Arthur Rylah Institute for Environmental Research in Victoria. His research interests include the study of invasive weeds, the study of invasive animal species, the development of recovery plans and development of management strategies to cope with and control invasive species. His presentation will address the relationship between climate variability and pest incursions and the ecological impacts of invasive species on natural ecosystems.

Dr Bob Sutherst

CSIRO Entomology

Bob Sutherst is a senior principal scientist at CSIRO Entomology's Brisbane office. He has spent his professional career developing and applying computer-modelling techniques to improve understanding and management of pest populations. Bob and his research team have developed a model to assess pest incursion risk (CLIMEX) that is currently used around the world in a variety of applications including risk analysis in relation to invasive species, pests, diseases and weeds, pest incursion management. His presentation will address the implications of global change and climate variability for vector-borne diseases: and discuss regional vulnerabilities to pest incursion resulting global climate change.

Theme 7

Marine and Coastal Ecosystems

Dr Terry Done

Australian Institute for Marine Studies

Terry is a Leading Scientist at the Australian Institute of Marine Science currently involved in a project in the Great Barrier Reef that builds scenarios of future implications of climate change for coral reefs, and seeks to understand factors that determine spatial variability in vulnerability to coral bleaching and resulting coral mortality. He will present the results of his studies that suggest that a lower rate of global warming will benefit coral reefs, and another that seeks to explain the differences in vulnerability of reefs in different places.

Dr Joanne Ellison

University of Tasmania

Joanna is a lecturer in the School of Geography and Environmental Studies, University of Tasmania. Her research interests are assess the stability of coastal sedimentary systems to human and climate pressures, and is active in broader natural resource management programs, such as the Northern Tasmania NRM Committee. Joanna's presentation will outline the potential impacts of climate change and sea-level rise on Australia's mangrove ecosystems.

Dr Max Finlayson

Supervising Scientist Division Commonwealth Department of Environment and Heritage

Max Finlayson is the Director of the Environmental Research Institute of the Supervising Scientist based in Darwin. His presentation will cover the effects of climate change and sea level rise on the wetlands in the coastal zone of northern Australia where both freshwater and saline wetlands are under the threat of change due to climate change. This information will be presented within the context of monitoring change in a holistic manner including synergistic links with other pressures such as invasive species and the consequences for the species biodiversity.

program

Day 1, Tuesday 25th November

8.30am – 9.00am	Registration
9.00am – 9.15am	Conference Welcome
9.15am – 9.30am	Opening Address
9.30am – 10.00am	Keynote Speaker
10.00am – 10.30am	Morning Tea
10.30am – 12.10am	Plenary Session
12.10am – 12.30pm	Questions
12.30pm – 1.30pm	Lunch
1.30pm – 3.30pm	Parallel Workshop Sessions
3.30pm – 4.00pm	Afternoon Tea
4.00pm – 5.00pm	Plenary Session
5.00pm – 5.15pm	Question Time
6.30pm	Official Dinner

Day 2, Wednesday 26th November

9.00am – 11.00am	Plenary Session
11.00am – 11.10am	Question Time
11.10am – 11.40am	Morning Tea
11.40am – 12.40am	Plenary Session
12.40am – 12.50am	Question Time
12.50am – 2.00pm	Lunch
2.00pm – 4.00pm	Parallel Workshop Sessions
4.00pm – 4.10pm	Question Time
4.10pm – 4.20pm	Afternoon Tea
4.20pm – 5.20pm	Plenary Session Continues
5.20pm – 5.30pm	Question Time

Day 3, Thursday 27th November

9.00am – 9.30am	Keynote Speaker
9.30am – 10.30am	Plenary Session
10.30am – 10.45am	Question Time
10.45am – 11.10am	Morning Tea
11.10am – 12.10pm	Final Synthesis
12.10pm – 1.10pm	Lunch
1.10pm – 2.10pm	Synthesis Report Back
2.10pm – 2.30pm	Resolution and official closing of the Conference

workshop format

The workshop sessions are designed to engage participants around 4 central themes namely Water Resources, Biodiversity and Invasive Species, Sustainable Land Use, and Marine Coastal & Freshwater Ecosystems. This has been done in such a way as to gain insights into:

- The climatic dependencies of each of the four themes;
- Possible adaptation and/or amelioration strategies for the four themes that will be applicable across the nation;
- Possible synergies and barriers that may exist with regard to improved adaptation to climate variability and change; and
- Knowledge gaps, research priorities and current activities that may require additional support.

registration info

Registration

Full Registration \$ 300.00 per delegate

Full Registrations include:

- Attendance at the 3 day conference
- Morning tea, lunch and afternoon tea on each day of the conference
- Conference dinner
- Conference satchel & materials
- Conference Workbook

Registration Desk

Registration for the conference will be in the Conference Foyer on level G at Crowne Plaza Surfers Paradise. Each delegate must register before they can enter the sessions.

Payment

All prices quoted in this brochure are in Australian dollars and GST inclusive. Payment can be made by cheque or credit card. Cheques must be made in Australian Currency, drawn on an Australian bank and made payable to "Eventcorp Pty Ltd Climate Impacts". Payment by credit card is acceptable by Visa, Bankcard, Mastercard, American Express or Diners Club cards.

NB. Faxed registrations are acceptable only if payment is by credit card. Please post registration forms with accompanying cheques. Registrations will not be confirmed until payment is received.

Visa

If you are travelling from another country, please ensure you have the appropriate travel and immigration documentation with you.

Confirmation of Registration and Changes

Registration forms and fees will be acknowledged and accommodation and travel bookings confirmed with a confirmation letter. Please check your confirmation letter carefully and advise Eventcorp of any changes in writing immediately.

Cancellations and Refund Policy

Cancellations must be made in writing to the Conference Secretariat. Cancellations received before Monday, 25th October 2003 will be entitled to a refund, less an administration fee of \$110.00. After this date, no refunds will apply, however substitute delegates will be welcome, provided written notice is given prior to the conference. Cancellation penalties will apply once the registration form is submitted, regardless of whether payment has been forthcoming.

general info

Accommodation

The preferred accommodation is Crowne Plaza Surfers Paradise. Discounted rates have been negotiated for delegates.

Rates are as follows (All rates listed below are per room per night):

Crowne Plaza Surfers Paradise

Gold Tower, Deluxe Club King with Spa Room	\$165.00
Eldorado Tower, Superior Room	\$135.00

To book your accommodation, simply complete the accommodation section on the registration form attached to the brochure. Please note the following:

- All rooms rates are based on a per room per night basis.
- Accommodation will not be held unless you have registered for the conference.
- Rooms will only be confirmed where credit card details are supplied to guarantee the room. These details will be passed onto the hotel for their use only and will not be processed until check in.
- Cancellations and amendments **must** be made in writing to the conference secretariat.
- A cancellation fee of one (1) nights accommodation is applicable for cancellations giving less than 7 days notice.
- Check in is 2pm and check out is 11am. If you arrive earlier, you may leave your luggage at the hotel reception, but your room may not be available.

Travel to the Gold Coast

Eventcorp are able to book any published airfare. Our in house licensed travel agent can provide you with the best available airfares on the day. Please indicate your travel requirements on the registration form. Changes or amendments after ticket issuance will incur a fee of \$55.00 per change (conditions apply). Tickets will not be issued without prior payment (a purchase order does not constitute payment).

For further information or to book your travel requirements please contact the conference secretariat on 07 3846 5858 or climateimpacts@eventcorp.com.au

Insurance

Registration fees do not include personal travel insurance of any kind. We strongly recommend that, if you are booking any travel arrangements, you should arrange a travel insurance policy to cover loss of luggage, cancellation changes, etcetera. The Climate Impacts on Australia's Natural Resources: Current and Future Challenges Conference and Eventcorp take no responsibility for any loss or damage sustained by delegates in connection with the conference. Travel insurance is available through the Conference Secretariat, please call 07 3846 5858.

Disclaimer

All information is correct at time of printing. The conference organisers reserve the right to change speakers, events and/or times slots due to unforeseen circumstances.

Conference Secretariat



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The Standing Committee on Natural Resource Management.

The Climate Variability in Agricultural Program (CVAP);

Natural Resources and Mines; and

SunWater.

