



**Centre for Disaster Studies
James Cook University to Queensland**

**Annual Report to
DepBT/TT1 1 Tf0.0006 rtmStu of Emergency Ser**



Bushfire in Thuringowa (Townsville) North Queensland 2003



Mulgrave Road, Cairns after the passage of Cyclone Steve 2000

**Annual Report of the Centre for Disaster Studies of James
Cook University to Queensland Department of Emergency**

Background and Mission of the Centre

A few years after the establishment of James Cook University, Townsville was

grants, and subsequently a PhD scholarship and Postdoctoral Fellowship.
Linda's development of research in the c

Personnel at James Cook University, Researching with the

research she has also upgraded and improved the Centre's website to make it our primary contact with the world.

Dr Sue McGinty, is the Director of Research in the School of Indigenous Australian Studies. She collaborates with the Centre as a joint supervisor of Eddie McLachlan and has contributed to hazard projects concerned with Indigenous Communities.

Scott Cunliffe, is a PhD student in the Centre and Consultant Tourism Analyst. His research project on Tourism Industry Risk Management in Tropical Coastal Areas is concerned with modelling tourism futures through the use of a web based Delphi process. He obtained a scoping study grant from the Sustainable Tourism Cooperative Research Centre working with University of Queensland.

Eddie Mclachlan, is a PhD student jointly in the Centre for Disaster Studies and School of Indigenous Australian Studies funded by the ARC and Queensland Health to examine Indigenous knowledge of hazards and community vulnerability to disaster.

Yetta Gurtner has continued work on a PhD with the Centre on impacts of human generated hazards, specifically tourism and terrorism, the Bali Bombing and the process of recovery. She has studied extensively in Indonesia.

Margaret Spillman is employed as a research officer with Alison Cottrell in the communities sub program of the Bushfire CRC.

Luke Balcombe is

Research Project Descriptions and Activities in 2002 and 2003

1. Bushfire CRC Communities Program

Dr Alison Cottrell is a social researcher who is part of the research team in the Centre for Disaster Studies at James Cook University. She has undertaken a number of related activities over the financial year.

- continued as Sub-Program leader to the Understanding Communities Subprogram, C1 in the Bushfire Cooperative Research Centre. The activities of this project for the first year (since August 2003) have mainly been to establish the research group, explore the issue with stakeholders and prepare a literature review of relevant materials.
- attracted a grant of \$ 6,500 from Emergency Management Australia's, Adding Value Project: to communicate results of previous research to local governments in areas affected by the northern wet season. This resulted in the development of a pamphlet which encourages local councils and counter disaster organisations to more actively involve women and their support networks in preparations for the wet season. (Copy attached). When we have a current version of the EMA logo the pamphlet will be released for use. Townsville City Council and Thuringowa City Council have expressed interest in contributing to further development of this product if other funding becomes available..9951 0 0 1

2. The Post-Doctoral Bureau of Meteorology ARC Linkage Project

Summary of original objectives of project

The primary aim of the post-doctoral research is to continue basic community research within the Cairns Northern Beaches community, the same community that was the focus of the primary investigators doctoral research. While the doctoral research concentrated on evaluating, understanding and changing levels of cyclone awareness and preparedness, the post doctoral research has been designed to extend that knowledge through an analysis of risk perception and tolerance. It is examining ways in which this, and other similar hazard prone communities receive, process and network hazard information. Additionally, the research will investigate more generally how hazard prone communities evaluate risk, educational effectiveness and changing awareness and preparedness

The Post-Doctoral Linkage Project commenced on June 1, 2002. Details of research project activity to date include; the preparation of and participation in four major projects, one of which is ongoing; the preparation of four papers to

3. Communicating the Tropical Cyclone Risk to Backpacker Tourists in Cairns

This project built on and completed a research project that was commenced in 2001. It was carried out with the support of Cairns City Council, the Bureau of Meteorology and Queensland Department of Emergency Services. Survey work was carried out by two international students under the direct supervision of the director and the post-doctoral researcher.

Cairns is one of Australia's primary tourist destinations. International and domestic visitors to this tropical cyclone-prone region are often unaware of the tropical cyclone risk and are therefore considered to be particularly vulnerable to the impacts of this natural hazard. Backpacker tourists are likely to be particularly vulnerable because of the characteristics and attributes of this group of travellers.

The majority of backpackers to Queensland are adventurous young adults, aged between 20 and 30 years old. They tend to be well educated with the majority having completed tertiary education at some level. Most non-domestic backpackers originate from Europe and demonstrate some competency in both written and spoken English. They are usually long-term travellers, often in the country for up to 12 months, and are therefore likely to find themselves in a cyclone prone region at some stage during their holiday. Their most popular choice of transport is bus or car and they are likely to travel either alone or in small informal groups. Commercial accommodation is usually sought in backpacker hostels, budget hotels, caravan parks and camping grounds.

A study carried out in Cairns in 2001 confirmed that while backpackers' decisions about destinations and accommodation are often based on word-of-mouth recommendations, they actively and determinedly seek additional information, primarily from travel guide books and increasing from the world wide web (internet). The study, which was carried out during the non-cyclone season, found that cyclone awareness among backpackers to Cairns was limited and that there was little information about cyclones readily available in the guide-books or at most commercial backpacker accommodation. The results of a follow-up study carried out in Cairns during the 2002-3 cyclone season confirmed the findings of the previous study and identified the primary sources of 'searched for' information and modes of communication between and among backpackers.

A report of the findings of this project has been prepared for stakeholders and recommendations are focussed on providing advice for the providers of hazard awareness information to backpacker tourists. A paper detailing the findings of the 'Cyclone Awareness and Preparedness Amongst Backpacker Accommodation Providers and Backpackers in Cairns' studies, and discussing the implications of the findings in terms of appropriate means and media for communicating cyclone awareness and risk information is to be prepared for publication in an international journal and a presentation, based on the paper will be presented at the EMA Conference in Canberra in September.

4. Disseminating Weather Forecasting Information for Indigenous Communities in Australia

Administering Organisations: Centre for Disaster Studies with the School of Indigenous Australian Studies, James Cook University.

Research Personnel: Dr David King, Dr Alison Cottrell, Dr Sue McGinty, Dr Douglas Goudie, Eddie McLachlan, Yetta Gurtner and Bureau of Meteorology staff.

Research Leader: Dr Douglas Goudie

Research

From July 1, 2003, Dr Goudie embarked on a joint Australian Research Council research consultancy with industry partner Bureau of Meteorology: Weather warnings in and through remote Indigenous communities. I lead a team of five researchers to interview key members of 18 remote Indigenous communities across northern Australia. This aimed to make clear what warnings of disruptive weather were needed for such communities, and how to make such warnings as effective as possible to trigger precautionary, safety-oriented responses. The active fieldwork from September to December 2003 formed the basis of 14 weekly reports, distributed to relevant BoM staff and communities. Two days of meetings were held with BoM staff in Melbourne in December 2003, resulting in refinement of 23 recommendations. A 250 page report, including a broad literature review, was posted to the web in May 2004 to gain Indigenous community and BoM feed back. The project is ongoing.

In June 2004 Dr Goudie held meetings with the Director of the Townsville Migrant Resource Centre and other officers, to begin the pilot of an eight month research project (to become national) of disruptive weather warnings in and through Non English Speaking Households (NESH), sharing goals with the Indigenous project.

Output

- A 250 page web-based report (currently at http://www.tesag.jcu.edu.au/CDS/reports/Gou_IWWRpt/)
- Workshop paper for Safer Sustainable Communities 2003 Australian

a) Document current practices for weather and warning information for

5. Natural Hazard Vulnerability, Awareness and Mitigation Strategies for Remote and Indigenous Communities.

Eddie P. McLachlan. APAI. Award. Research Partner Queensland Health.

Remote communities in Northern Australia regularly experience the impact of tropical cyclones and floods, but because of their smallness and remoteness must deal with the crisis with the minimum of external support. This study will improve our knowledge of how remote communities cope with cyclone and flood impact and has measured levels of awareness and preparedness, and social and community vulnerability. The study has developed a model of how predominantly indigenous communities deal with and prepare for cyclones and it will give guide the preparation of educational material and information oriented towards indigenous and remote communities.

Summary of original objectives of project

There were six main aims to this research project:

- the creation of a history of cyclones in each community, recording the positive virtues of this experience alongside the description of the events, the impact and recovery, and through these accounts provide a reminder to the community of the danger and power of these events;
- the measurement of vulnerability, based on census and building characteristics, indexed against coastal cities for comparative purposes;
- the measurement of household awareness and preparedness, with special attention towards cultural values;
- collection of community strategies for protection, evacuation and recovery related to the vulnerability, awareness and preparedness surveys;
- to promptly return to the community the results of the surveys in order to assist that community in assessing its strengths and weaknesses in dealing with future cyclone threats, thereby improving its ability to mitigate against disaster and reduce or control vulnerability;
- to develop a methodology for awareness and preparedness planning and education that may be offered as a template to other remote and indigenous communities.

Milestones reached by mid 2004

At final stages of thesis write up.

6. Tourism and Terrorism. Bali: A Case Study in Crisis Management: Yetta Gurtner

As an industry, successful tourism relies on the perpetuation of images and perceptions of peace, tranquillity and safety (Pizam and Mansfield 1996). Risk and fear – whether real or imagined - are strong determinants in the decision making process of the travelling public. In a volatile and unpredictable world climate however, it is increasingly apparent that no destination is immune from hazards and/or disaster. It is within the community's capacity to adequately prepare and respond that an adverse event can escalate to enduring crisis conditions.

The World Tourism Organisation (2003) defines a crisis as “any unexpected event that affects traveller confidence in a destination and interferes with the ability to continue operating normally”. More specifically Sonmez, Backman and Allen (1994) use the term “tourism crisis” to describe circumstances;

“which can threaten the normal operation and conduct of tourism related businesses: damage a tourist destination's overall reputation for safety, attractiveness, and comfort by negatively affecting visitor's perceptions of that destination; and, in turn, cause a downturn in the local travel and tourism economy and interrupt the continuity of business operations for the local travel and tourism industry, by the reduction in tourist arrivals and expenditures.”

Given the fickle nature of media and public attention it would take relatively little to precipitate a tourism crisis for a destination. Academics and industry authorities recommend the development and institution of an integrated crisis management plan to help insulate the tourism sector and associated stakeholders from any potential adversity (PATA 2003, WTO 2003). Reality demonstrates that relatively few destinations or communities have implemented any such planning (Beirman 2003). ckle nature of m 10Tm(the local travelj11in

7. Tourism Industry Risk Management In Tropical Coastal Areas

Scott Cunliffe

This project is in the final stages of write up as a PhD thesis, and incorporates funding and commitments to the CRC for Sustainable Tourism.

The overall aim of the research is to investigate expert opinion on the future development of, and risk management scenarios for, tourism in tropical coastal areas by examining the likely hazards, vulnerability and exposure to various risks. The focus of the project is on forecasting the risks and hazards that the tourism industry will face in the next twenty-five years and fifty years. This will require a qualitative analysis using the Delphi technique as a survey method. By compiling a panel of experts from around the world, forecasts will be developed by achieving a general consensus on the survey results amongst all panellists.

The objective will be to forecast quantitative and qualitative factors of growth and development of the tourism industry in tropical coastal areas relating to total risk. Hazards and the risks those hazards pose for tourism development, will be assessed independently and cumulatively, which may generate a means of indexing risks and risk management for tourism. The hazards included in the analysis include both natural and anthropogenic hazards.

Expert Delphi panellists were drawn from 22 different countries and from a variety of disciplines. Consensus amongst the panellists was largely achieved through the iterative process of the Delphi technique. Preliminary results from the survey offer insights into likely long term planning and risk management needs of the tourism industry for such issues as likely key factors affecting destination choice, likelihood the occurrence of major catastrophic events (natural and man-made), future transportation preferences, likely future insurance and risk sharing mechanisms for hazards having and impact on the tourism industry, and a number of other futures forecasts for hazards and tourism in tropical coastal areas. A full analysis of the primary research will be completed in July.

8. Tourism Risk Management for the Asia Pacific Region

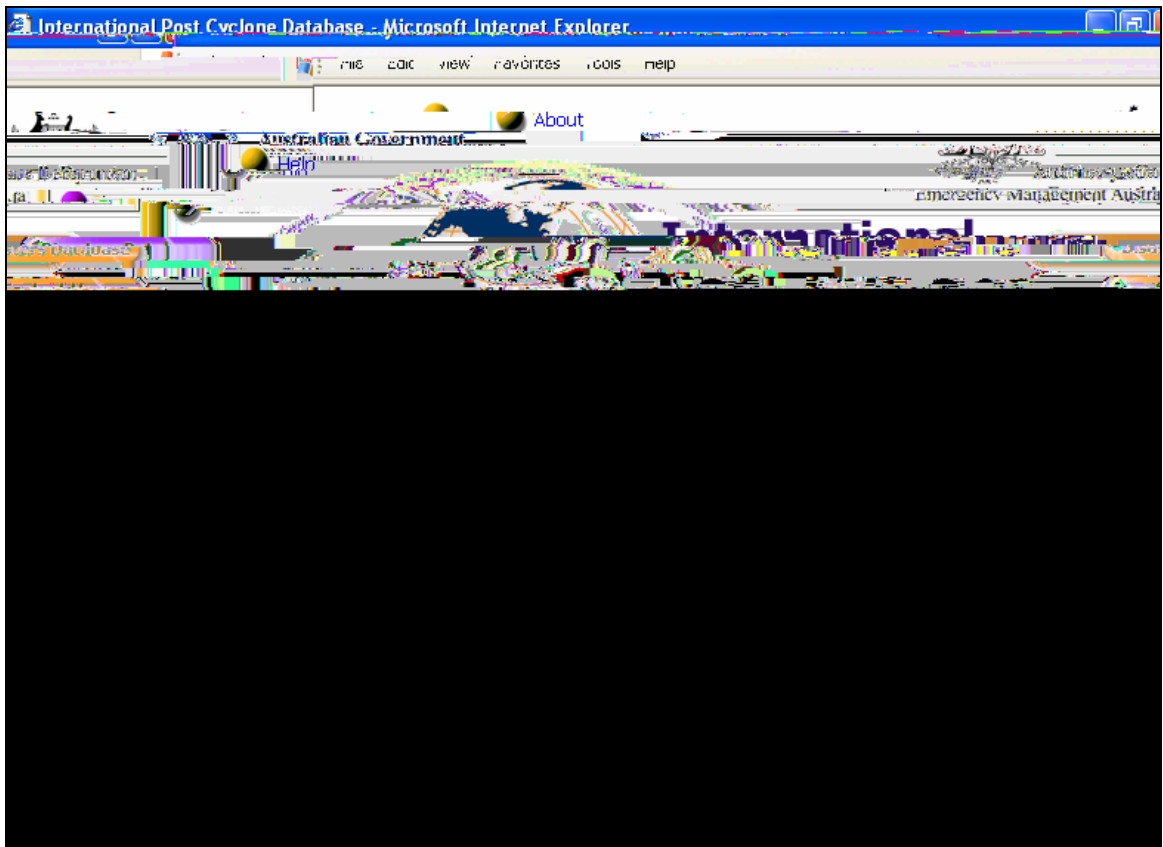
A Crisis management manual was prepared for the Tourism Working Group of Asia Pacific Economic Cooperation (APEC). The Centre for Disaster Studies researchers contributed to the manual, titled "Tourism Risk Management in the APEC Region", in close collaboration with partners from the University of Queensland (CRC Sustainable Tourism), Hong Kong Polytechnic and the University of Hawaii. This project was completed in September.

9. Construction of a website listing current and previous post cyclone surveys from within Australia and around the world.

Jordahna Haig, with D.King, & J.Nott

Project Background

In July of 2003, Jordahna Haig, the CDS coordinator, was awarded a research grant from Emergency Management Australia through their 2003-2004 projects program. The aim of this project was to collate and summarise post cyclone surveys from within Australia and around the world; which study the physical, psychological, environmental, response, meteorological, social and economic impact of tropical cyclones. This information is provided in a database, available via the Centre for Disaster Studies (CDS) website and accessible to the world. This database aims to act as a primary research and information centre for hazard professionals and practitioners.



physical, psychological, environmental, response, meteorological, social and economic impact of tropical cyclones. Records are summarized into the following searchable fields: Event, Location, Country, Title, Survey Type, Survey Aim, Keywords, Study Area, Methodology, Key Findings, Commissioned By, Funded By and Links to the full text where available.

We hope that by the end of its first year, the database will be able to update itself. We hope by then that the database would have developed a reputation amongst researchers and other organizations which conduct Post Cyclone Surveys to the point where all articles and related materials are automatically forwarded to Jordahna for entry into the database.

10. Research Infrastructure and Capacity

2001 Census

Successful ARC applications attract research infrastructure block grants which are distributed to schools and to research groups. During 2002/2003 the centre obtained the full 2001 census of Australia through its contribution to ARC funding. Disaster vulnerability analysis of the census has been a core research area. Additionally many other researchers use the census, thereby enhancing the centres role as a research facilitator, and it is widely used in teaching especially in demography, planning and disaster studies.

The Centre occupies research offices and resource space on the Townsville campus along with items of equipment. The main office complex, resource space and computer laboratory of the centre is at the Cairns campus. Most of the centre's computers and office equipment are concentrated in the centre complex.

11. Cooperative Research Centres

Involvement in two CRC's has developed soundly during late 2003 and 2004. The involvement of the centre in these programs promises to generate significant research activity over the next 5 to 7 years.

12. Book. Communities and Disasters (working title)

Chapter Content. Approximate Status of where they are at

1. Introduction: Physical Framework Natural Hazards

The introductory chapter outlines the physical characteristics of the major natural hazards of the Australasian region, with an emphasis on the human environment interface, climate change and extreme events.

2. What Is This Thing Called 'Community': An Example In Far North Queensland

Research on the awareness and preparedness for natural hazards of remote communities in Far North Queensland has resulted in a questioning of how we use the term 'community' in the context of planning for natural hazard mitigation. In this particular remote community, an immediate response by outsiders is not possible. The community themselves must respond. Therefore, the question arises as to how we define the community under consideration and how relevant this is to the reality of hazard planning. Are we describing what is really there, or what we want to be in place? Is the physical locality of importance or not?

3. Gender Culture and family

We know from previous research that presenting inform

vulnerability to cyclones and capacity to deal with the hazard. This has been developed as a community vulnerability and capacity model that may be applied to diverse communities in order to assess levels of capability to mitigate and deal with the cyclone hazard.

5. Transport and Evacuation Planning

This chapter focuses on how to get out of the way of disaster impacts. At the conceptual level, disasters can be divided up into those with warning of more than a few hours, and those with warning of less than a few minutes. This chapter considers disasters with sufficient warning periods to be able to evacuate the vulnerable away from the worst impact areas. A JCU Centre for Disaster Studies 'Warned Disaster Matrix' is presented, indicating patterns of preferred evacuation independent of persons, threats and locations. This chapter also develops lessons and recommendations based on actual preparation for a major cyclone surge in Cairns¹, developing planning recommendations and conclusions based on ESD and good sense. All the case studies explored in this chapter on evacuations come back to community safety and capacity building: involve and provide effective information and early warning to the community at risk.

Mine-related disasters have been included in this chapter because there are industrial threats which may have a lead-time sufficient to effect precautionary evacuations. In all disaster risk reduction work, the core goal is to minimise loss of life and injury. Reducing loss of expensive or highly

6. Exceptional Disasters

This chapter examines the experiences of the more severe disasters that have occurred, especially events such as the Brisbane Floods, Cyclone Tracy and the Newcastle earthquake

7. Tourism Crisis: Management And Recovery In Tourist-Reliant Destinations

The core case study in this chapter is of crisis recovery in Bali following the bombing, discussed within the broader context of tourism and terrorism and crisis recovery.

8. Tourism and Natural Disasters

The future of the tourist industry and tourism in relation to natural and human induced hazards, as viewed by stakeholders and leaders within the tourist industry. Tourists are a dependent community within the host community, which in many instances is economically dependent upon that industry.

9. Organisations in Disasters

In the event of a disaster, communities become the targets of specialist organizations and a concentration of activities. The complex unstructured activities and routines of daily life are disrupted and even totally overwhelmed by a single catastrophic event that requires a redirection of priorities, resources and people, to deal with all aspects of the disaster impact as rapidly as possible. The whole community must be mobilised to restore functions and

meet needs, to return to the normality of the pre disaster state. This latter purpose is least likely to be achieved, as the destroyed community can seldom rebuild to the same complex, but randomly haphazard state that existed before the disaster. To mobilise the whole community to a single purpose of recovery,

that require armies of fire fighters to control. When major fires do occur, they easily jump from burning vegetation to nearby homes. Obviously this causes major concerns, especially when there are many homeowners who move to the scenic wildland-urban interface not fully aware that they are living with increased risks from fire.

Community Activities

Membership of Queensland Tropical Cyclone Coordinating Committee

Jordahna Haig is representative on Cairns Local Disaster Management Group.

Douglas Goudie was a delegate to the EMA Flood Management Workshop held at Mount Macedon in July 2004.

Disaster Management for Environmental Health training course in August of 2003, Cairns, Supported by Queensland Tropical Public Health Unit, Preparation and delivery of training materials and coursework subject in the Environment Health Managers Disaster Management Training Course.

Disaster Management Act 2003 training session held in Cairns on the 5th march 2004.

D.King & A.Cottrell attended the Queensland Government Department of Emergency Services Severe Weather and Flood Seminar for the 2003/2004 Season. Wednesday 5 November 2003 at the Townsville Golf Club, Benson Street.

D.King & A.Cottrell took part in Channel 7 documentary Life Up North.

D.Goudie - Training sessions – 2x 3rd year lectures in urban site planning for sustainability.

Media stories in the Central and Northern Burnett Times in late 2003 relating to allied Disaster Risk Management studies for the Eidsvold Shire, Queensland, 20 minute interview on ABC Radio National 24/5/4 and NQ ABC radio, 10 minutes, 25/5/4.

Meetings of North Queensland Chapter of the Planning Institute of Australia, - King, Cottrell & Goudie.

S.Cunliffe - World Futures Society Annual Conference – August 2003, San Francisco, California, USA

-

Disaster Education

Staff of the Centre offer two university subjects that relate to hazards and disasters.

GE2454:03. Natural Hazards

Staff: Dr J Nott. Cairns. Semester 2.

The subject examines the physical characteristics and causes of various natural hazards as well as the social consequences of these events. Emphasis is placed on planning for and managing these events in tropical urban environments.

Major topics: characteristics, causes, planning for and managing the consequences of the following: tropical cyclones (wind and marine inundation), earthquakes, tsunamis, storms and tornado, lightning, landslip, flood and drought, disease.

Learning Objectives:

1. to develop an understanding of the causes and characteristics of various forms of natural hazards affecting human society;
2. to recognise those areas within a region most prone to a particular type of natural hazard;
3. to learn effective planning strategies to mitigate the effects of hazards;
4. to learn management strategies in dealing with the consequences of a disaster.

GE3606:03. Disasters: Vuln0 11.V6063 Tm(rl2i a/Tp:98 Tw 11.9951 0 0.88 411.57959 Tw

Selected Publications

- COTTRELL, A. 2003 Community Action for Community Safety: A Residents' Flood Mitigation Committee in Townsville. Paper presented at the Safer Sustainable Communities Conference September 10-12, Canberra.
- COTTRELL, A., forthcoming (2004) 'What is this thing called 'Community': issues for hazard studies.' In: D. King and A. Cottrell (eds) Communities and Disasters. Centre for Disaster Studies, James Cook University, Townsville.
- COTTRELL, A., forthcoming (2004) 'Quiet achievers: women's preparations for seasonal hazards in northern Australia.' In: D. King and A. Cottrell (eds). Communities and Disasters. Centre for Disaster Studies, James Cook University, Townsville.
- Cunliffe S, - July 200. 3"Risk, Tourism and Future Management Needs". Hazards Conference Boulder Colorado USA
- Cunliffe S 2004. "Of the past, for the future: archaeology and tourism, a viable partnership?" World Archaeological Congress. Washington DC
- Cunliffe S. 2003. "Tourism and Cultural Risk Management"
- Cunliffe, S. K. (June 2003 - In Press). Tourism and Cultural Risk Management.

- King, D. 2004. "Community Recovery and NGO Policy in the Developing World: A Case Study of Post Civil War Reconstruction in Sierra Leone." Paper presented at TIEMS Conference, Melbourne
- King D. 2004. "Understanding the Message: Social and Cultural Constraints to Interpreting Weather Generated Natural Hazards". International Journal of Mass Emergencies and Disasters
- Hoogenraad, Wouter, van Eden Ronald & King David. 2004. "Cyclone Awareness Amongst Backpackers in Northern Australia." Accepted by AJEM
- Anderson-Berry L. and King D. 2004. ."Mitigation of the Impact of Tropical Cyclones in Northern Australia through Community Capacity Enhancement". Special issue of Mitigation and Adaptation Strategies for Global Change ed. E.Haque.
- Anderson-Berry L, Keenan T, Bally J., Pielke jr R, Leigh R. & King D. 2004. "Societal, Social and Economic Impacts of WWRP S2000 FDP". Weather & Forecasting: Journal of the American Meteorological Society. Issue 19 No.1
- King D. & Gurtner Y. 2003. "Community Participation in Disaster Response and Recovery." Proceedings of Safer Sustainable Communities, 2003 Australian Disaster Conference, EMA, Canberra
- Gurtner Y. 2004. Article "Bali – the long road to recovery" submitted to "The Australian Journal of Emergency Management" (under consideration-for publication November 2004)
- Gurtner Y. 2004. Book Chapter –"Tourism Crisis: Management and Recovery in Tourist-reliant Destinations" in Communities and Disasters: Mitigation, Endurance and Recovery. Australasian Perspectives (in production) – February 2005

Cunliffe S. BOOK REVIEWS:

Review for the European Union. Enterprise Directorate-General. Innovation Policy and Networks

EU supported tourism sector project:

Book title: "Coastal tourism, environment, and sustainable local development"

Editors: Noronha, L., Lourenço, N., et al

Publisher: TERI, New Delhi

Date: 2003, 468 pp.

ISBN: 81-7993-017-3

Review completed: 24 April 2004

Review for Routledge Economics Books (London)

Taylor & Francis Group

Pre-publication manuscript review

Book title: "NO BLANK CHEQUE"

(crisis management in the European Union)

Author: Marc Houben

Review completed: 24 October 2003

Review for Tourism - An International Interdisciplinary Journal (Croatia)

Theme: "Cultural differences in tourism". Pre-publication manuscript review

Article title: "The use of a Delphi study to identify implementation procedures for an urban cultural tourism initiative: The case of Indianapolis, Indiana, USA." Author: blind review. Review completed: 24 September 2003

Cunliffe S. 2004. Review for Environmental Management (ENM-03-0136), USA, Theme: "Cultural differences in tourism"

Article title: "Determining expert consensus as to the need for inclusion of ecosystem goods and services in the market system using the Delphi Technique."

Author: blind review

Review completed: 4 October 2003