

Urban & Regional Planning

University of Canberra

Annual Report 2010-11: First year of the Urban and Regional Planning for Risk and Uncertainty project

Integrating spatial planning, bushfire risk and emergency
management in the context of climate change

October 2011

Kate Sullivan, University of Canberra

Barbara Norman, University of Canberra

Contents

SECTION 1: INTRODUCTION

Summary of key activities.....	1
Lead end user report.....	2

SECTION 2: BACKGROUND

Project overview.....	3
-----------------------	---

SECTION 3: PERFORMANCE REVIEW

Objective.....	5
Strategies.....	5
Key research activities.....	5
Key research themes.....	6
Literature reviews.....	7
Conference papers and research posters.....	10
Journal articles.....	10
Case studies.....	11
Key engagement activities.....	12

SECTION 4: PERFORMANCE SUMMARY

Key outputs.....	14
------------------	----

SECTION 5: YEAR AHEAD

Projected key activities and outputs 2011-12.....	16
---	----

SECTION 6: CONTACTS

Research team.....	17
--------------------	----

Section 1: Introduction

This annual report on the Urban and Regional Planning for Risk and Uncertainty project provides an overview of key activities from the first year of the research project, from its commencement on 30 September 2010 through to 31 October 2011.

Summary of key activities

Date	Activity
Sept 2010	Research project commenced
Oct 2011	Establishment of primary end user network
Nov 2010	Keynote presentation on project at 19th NSW Coastal Conference, Bateman's Bay, NSW, and publication of conference paper
Dec 2011	Key project milestones agreed with CRC and lead end user
March 2011	Key project research themes agreed with end users
May 2011	Presentation on project at Bushfire CRC Research Advisory Forum, Brisbane
June 2011	Scoping of case studies with end users and other stakeholders
Aug 2011	Guest lectures on project at University of Canberra and Australian National University
Sept 2011	Presentation on project at 2011 AFAC & Bushfire CRC National Conference, Sydney, NSW, and publication of conference paper
Sept 2011	Project poster presented at 2011 AFAC & Bushfire CRC National Conference, Sydney, NSW
Oct 2011	Literature review completed for distribution to end users and other stakeholders, and made available from Bushfire CRC website
Oct/Nov 2011	Manuscript on research to date submitted to international journal

Lead end user report

This project, part of the Understanding Risk and Uncertainty research theme, shows significant promise in eventually delivering high quality outcomes which will assist emergency management agencies to become integrally involved in the development and land use planning process for improved public safety outcomes.

This area of research covers a multi-disciplinary approach in a complex legislative and policy environment, further complicated by incomplete understanding of the potential impacts of climate change and the adaptation strategies yet to be adopted by government.

There are currently significant areas of discord between land use planning and consequent development in many areas of Australia that result in natural hazard threat not being adequately addressed and mitigated. This project aims to study the barriers in order to improve the integration of land use policy in urban and regional areas to also incorporate relevant and achievable emergency management outcomes, based on significantly greater engagement of all stakeholders and in particular the emergency management organisations that traditionally have been principally involved only in the response and recovery phase in the aftermath of natural hazard giving rise to an emergency.

As Lead End User for this project, I believe that the research program has been well developed under a collaborative and consultative approach and that the end users will gain significant benefits from the research outcomes, and which will be structured and tailored to facilitate adoption by the end users quickly and effectively.

Mick Ayre
Acting Director Development and Strategy
Northern Territory Fire and Rescue Service

Section 2: Background

Project overview

The Urban and Regional Planning for Risk and Uncertainty project is a three-year research project that commenced in September 2010. It is part of the 'Understanding risk' research program of the Bushfire Cooperative Research Centre (CRC) and forms one of three research streams within the Bushfire CRC's 'Community expectations – mainstreaming fire and emergency management across policy sectors' project (see <http://www.bushfirecrc.com/category/projectgroup/1-community-expectations>):

- University of Canberra – urban and regional planning for risk and uncertainty
- RMIT University – shared responsibility
- Australian National University – mainstreaming fire and emergency management across legal and policy sectors

Key project researchers are Professor Barbara Norman (Project Leader) and Dr Kate Sullivan (Senior Research Fellow) from Urban and Regional Planning at the University of Canberra.

The primary focus of the University of Canberra project is on the integration of urban and regional planning, bushfire risk and emergency management in the context of climate change.

The objective of the research project is to identify leading practice in spatial planning for bushfire risk and emergency management in the context of climate change, as well as barriers to integrating spatial planning, bushfire risk and emergency management. The project involves collaboration and interdisciplinary research and aims to develop an integrated planning approach to bushfire risk and emergency management, to inform policy and practice. The research process aims to be highly inclusive of stakeholders across planning, bushfire and emergency management sectors, to ensure relevance and practicality of outcomes.

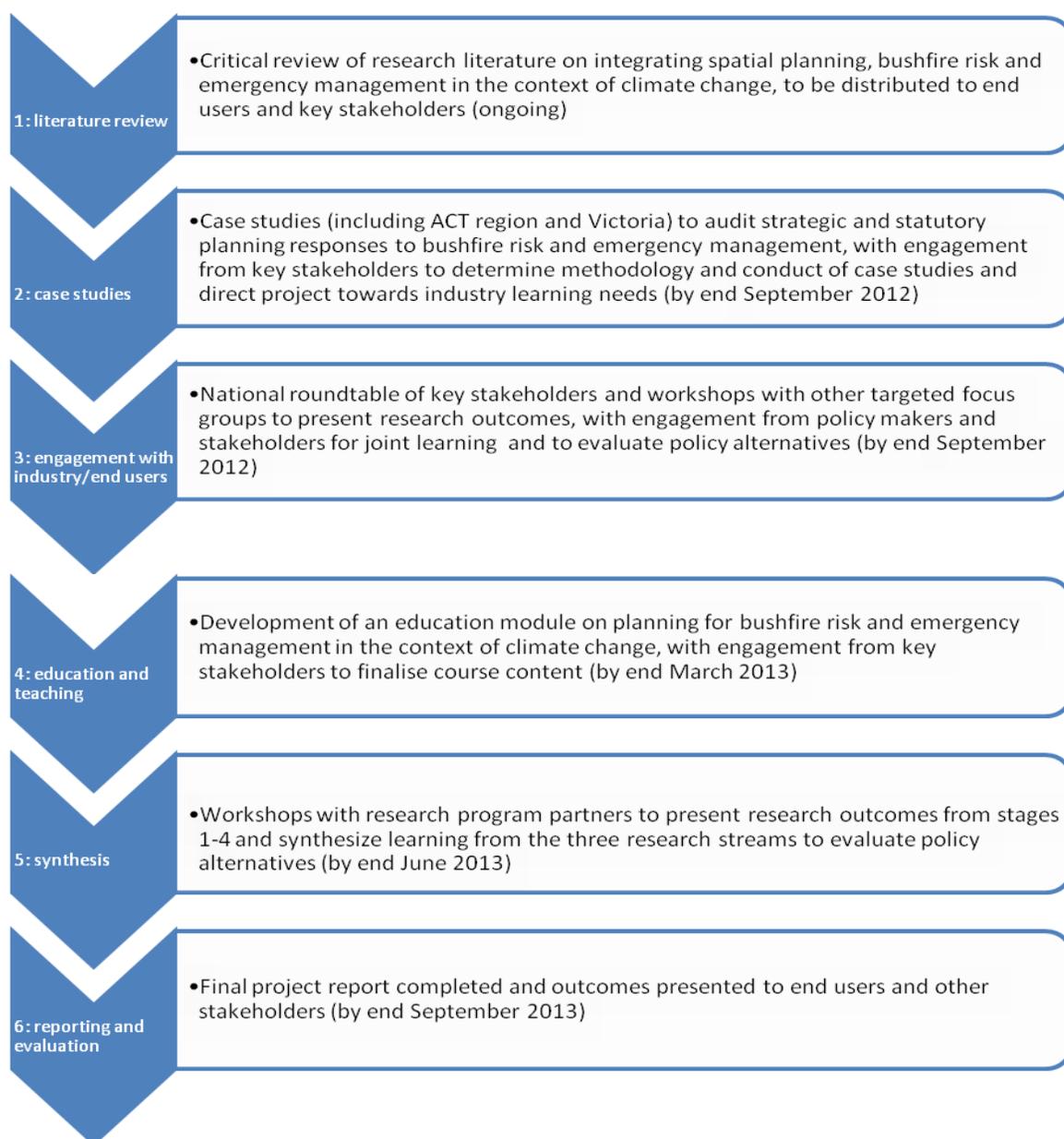
The research methodology has involved a comprehensive literature review on integrating spatial planning, bushfire risk and emergency management in the context of climate change. This will be followed by an audit of current strategic and statutory planning responses, drawing on geographically based case studies. A national roundtable of key stakeholders involved in planning for bushfire risk and emergency management will then be held. This will be in association with the national Planning Institute of Australia and the Victorian Municipal Association of

Australia. More targeted focus groups will also be conducted, depending the outcomes of the research findings.

This research will form the basis of an education module for professional and ongoing training on planning and bushfire risk, with application more broadly for emergency management in the context of climate change.

The project has six key stages, as outlined in Figure 2.1.

Figure 2.1: Overview of research project



Section 3: Performance review

Objective

To identify leading practice in spatial planning for bushfire risk and emergency management in the context of climate change, and barriers to integrating spatial planning, bushfire risk and emergency management.

Strategies

Research: The research methodology includes a comprehensive literature review on integrating spatial planning, bushfire risk and emergency management in the context of climate change; an audit of current strategic and statutory planning responses, drawing on geographically based case studies; and a national roundtable of key stakeholders and targeted focus groups.

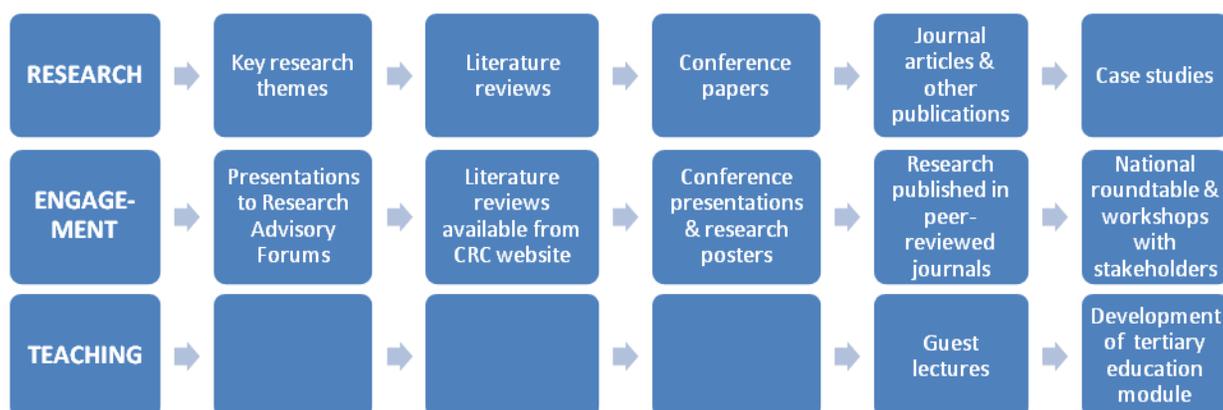
Engagement: The project will be highly inclusive of stakeholders across planning, bushfire and emergency management sectors to ensure relevance and practicality of outcomes.

Teaching: The research will form the basis of a tertiary education module on planning and bushfire risk, with application more broadly for emergency management in the context of climate change.

Key research activities

Figure 3.1 outlines five key activities undertaken in the first year of the project, across the key themes of research, engagement and teaching. These key activities are discussed below.

Figure 3.1: Key research activities 2010-11



Key research themes

Establishing the key research themes was an important ‘first step’ in the project, in helping to identify research gaps and steer the scope of the literature reviews. The key research themes were agreed with end users, and may be modified as the project progresses.

Twelve key research themes have been identified to date, as follows:

1. **Integrating spatial planning, bushfire risk and emergency management in the context of climate change:** defining policy integration (‘mainstreaming’) and why it is important, and identifying barriers to policy integration and possible examples of leading practice
2. **Identifying critical areas of planning risk:** urban growth, climate change and disaster risk
3. **Emergence of land use planning as an issue in bushfire risk and emergency management:** identifying the ‘planning turn’
4. **Auditing the planning system to identify gaps, connections and leading practice:** current state of state/territory, regional and local planning systems to incorporate planning for bushfire risk and emergency management, with a particular focus on the role of bushfire risk management in strategic and statutory planning processes
5. **Bushfire risk, emergency management and climate adaptation through the ‘planning lens’:** gaps, connections and leading practice
6. **Risk management and planning:** urban resilience, new approaches to planning for risk and possibility of a more risk management approach to planning for bushfire risk and emergency management in the context of climate change
7. **Identifying leading practice:** leading practice in spatial planning for bushfire risk and emergency management in the context of climate change, and identifying barriers to leading practice
8. **Extent of integration of national planning principles with bushfire risk, emergency management and climate change**
9. **Bushfire risk, emergency management and climate change issues at the urban-rural interface**
10. **Integrating bushfire risk, emergency management and climate adaptation**

11. **Planning education and capacity building:** building professional capacity in the planning sector to respond to projected extreme weather events in the context of climate change and establishment of a tertiary education module on planning for bushfire risk, with application more broadly for emergency management in the context of climate change
12. **Community engagement and communication on planning:** engagement in and ownership of initiatives to integrate urban and regional planning, and fire risk and emergency management, and improved communication on urban and regional planning, and fire risk and emergency management in the context of climate change

These research themes are most likely to provide the best leverage points and opportunities for intervention across the relevant levels of government and end users.

A presentation on research to date, based around the key research themes, was made by the researchers at the Bushfire CRC Research Advisory Forum in Brisbane, Queensland, on 27 May 2011 – a copy of the presentation is available from the CRC website. Positive feedback was received from the Research Advisory Forum presentation, as forwarded by the Bushfire CRC on 10 June 2011, including many useful contacts to follow up, from those expressing interest in the project.

Work on the literature reviews will see further refining of these research themes so that, at the conclusion of the project, a full set of literature reviews will have been conducted across a comprehensive set of research themes.

Literature reviews

A major milestone document during the year was the completion of the first in a three-part series of literature reviews on integrating spatial planning, bushfire risk and emergency management in the context of climate change. The literature reviews are based around the 12 key research themes discussed earlier.

The literature reviews are an important component of the overall research project, to provide context and a critical foundation, particularly given the complexity and cross-sectoral nature of the project.

A preliminary draft literature review covering all three stages was initially prepared, including a comprehensive list of key sources. This literature review took a broad approach, which was considered important for establishing the scope of the project as a whole, and also reflects the broad policy and governance space in which spatial planning is situated. However, because of the volume of material being

reviewed, it was found more practical to divide up the literature reviews into three stages, to enable more critical analysis and to coincide with various stages of the project. The following sets out the content of the three literature reviews, against the key research themes, and identifies the scope of the literature reviewed:

❖ Preliminary – stage 1

- **Integrating spatial planning, bushfire risk and emergency management in the context of climate change:** defining policy integration ('mainstreaming') and why it is important, and identifying barriers to policy integration and possible examples of leading practice
 - Literature review scope: policy integration research
- **Emergence of land use planning as an issue in bushfire risk and emergency management:** identifying the 'planning turn'
 - Literature review scope: Australian bushfire inquiry reports
- **Planning education and capacity building:** building professional capacity in the planning sector to respond to projected extreme weather events in the context of climate change and establishment of a tertiary education module on planning for bushfire risk, with application more broadly for emergency management in the context of climate change
 - Literature review scope: planning education research

❖ Practical (to coincide with the case studies) – stage 2

- **Auditing the planning system to identify gaps, connections and leading practice:** current state of state/territory, regional and local planning systems to incorporate planning for bushfire risk and emergency management, with a particular focus on the role of bushfire risk management in strategic and statutory planning processes
 - Literature review scope: Australian state/territory strategic planning documents relating to bushfire risk and relationship to statutory planning – based on case study states and territories
- **Bushfire risk, emergency management and climate adaptation through the 'planning lens':** gaps, connections and leading practice
 - Literature review scope: research on spatial planning and bushfire risk, emergency management and climate adaptation, relevant research in *Australian Planner*, and Planning Institute of Australia policy statements and submissions relating to bushfire risk, emergency management and climate change

- **Extent of integration of national planning principles with bushfire risk, emergency management and climate change**
 - Literature review scope: national policy documents relating to spatial planning, bushfire risk, emergency management and climate change
 - **Bushfire risk, emergency management and climate change issues at the urban-rural interface**
 - Literature review scope: planning research on the urban-rural interface
 - **Integrating bushfire risk, emergency management and climate adaptation**
 - Literature review scope: research on emergency management and climate adaptation integration
- ❖ Theoretical – stage 3
- **Risk management and planning:** urban resilience, new approaches to planning for risk, and possibility of a more risk management approach to planning for bushfire risk and emergency management in the context of climate change
 - Literature review scope: research on scenario planning, and on spatial planning theory, and risk and resilience theory
 - **Identifying critical areas of planning risk:** urban growth, climate change and disaster risk
 - Literature review scope: planning research on managing urban growth and climate change mitigation and adaptation
 - **Community engagement and communication on planning:** engagement in and ownership of initiatives to integrate urban and regional planning, and fire risk and emergency management, and improved communication on urban and regional planning, and fire risk and emergency management in the context of climate change
 - Literature review scope: planning theory research

The first literature review in the series is entitled ‘Integrating spatial planning, bushfire risk and emergency management: critical literature review – stage 1’. Stage 1 of the literature review has been important in understanding a series of key concepts across the spatial planning, bushfire risk, emergency management and climate change disciplines. It looks at how policy integration (‘mainstreaming’) is defined in the literature and why it is important, and identifies barriers to policy integration and possible examples of leading practice. It then traces the emergence of land use planning as an issue in bushfire risk management, drawing on a significant body of literature on Australian bushfire research – bushfire inquiry

reports. The review concludes by looking at the literature on planning education and capacity building.

The literature review takes a critical (systematic) approach and a detailed methodology is outlined in the document. The review will be distributed to end users and other stakeholders and also made available on the Bushfire CRC website.

The literature review series will provide an important foundation for reports, conference papers and journal articles completed over the three years of the project, reflecting research findings to date around specific themes and concepts.

Conference papers and research posters

The researchers presented a conference paper on project research to date at the 2011 AFAC and Bushfire CRC conference in Sydney on 31 August 2011. The conference paper was entitled 'Planning for risk and uncertainty: new approaches for managing urban growth'. The paper will be published as part of the conference proceedings and made available on the Bushfire CRC website. It will also form the basis for a future journal article.

The conference presentation looked at current connections and gaps between urban planning and emergency management, and possible new pathways forward to reduce risk to urban communities. The presentation resulted in a number of follow-up contacts for further engagement with stakeholders.

Following the presentation at the conference, the researchers participated in a 'Research Wrap' on land use planning. This provided an excellent opportunity to engage with researchers and stakeholders. The wrap resulted in a series of useful contacts with stakeholders and plans for follow-up meetings and presentations. The researchers also presented a research poster at the 2011 AFAC and Bushfire CRC conference, entitled 'Mind the policy gap: planning for fire risk and emergency management in the context of climate change'. A copy of the research poster is available from the CRC website.

Journal articles

A major piece of work for the year was the completion of a research article on work to date, to be published in an international peer-reviewed planning journal. Work on the key research themes, literature reviews and conference papers provided a good foundation for publishing in this area on research outcomes to date. The article is entitled:

- "Spatial planning, risk and resilience: the urban edge and the Australian bush in a changing climate"

The article has been submitted to the Bushfire CRC for approval. A copy of the published article will be made available on the CRC website.

Case studies

The purpose of the case studies is to undertake an audit of current strategic and statutory planning responses to bushfire risk and emergency management, and identify examples of leading practice. The case studies will involve extensive engagement with agencies, groups and individuals from bushfire, emergency management and planning sectors.

Most of the case study work will occur in 2011-12, but the first year of the project saw the development of the case studies rationale and scope, in consultation with end users. A proposal on the case studies rationale and scope was circulated for comment to secondary end users, the lead end user and the Bushfire CRC, to seek feedback so as to direct the project towards industry learning needs.

The case studies will focus on Victoria and the Canberra region (ACT and NSW), and another state or territory. This will provide for a variety of geographic regions for analysis and a variety of state/territory, regional and local strategic and statutory planning responses – both larger and smaller scale, and across different landscapes. The ACT and Victoria have both recently undertaken significant reviews of their bushfire and planning regimes, as a result of major bushfires (2003 and 2009), and are continuing to implement revised practice.

The significant differences between Victorian, ACT and NSW urban-rural interface characteristics and planning legislative frameworks will enable exploration of a range of different planning approaches and provide the broadest possible consideration of issues relating to the research project within available resources. As it is critical that similar case studies be undertaken for the other states and the Northern Territory, this project will look for opportunities to engage with stakeholders in the other states and the Northern Territory, and encourage possible parallel studies.

There are significant differences in fire ecology between and within each state/territory, as well as planning systems and processes. However, the proposed case studies will have broader relevance for the other states and territory in proposing general principles underpinning an integrated planning framework for bushfire risk and emergency management.

Key engagement activities

The research process seeks to be highly inclusive of stakeholders across planning, bushfire and emergency management sectors. Engagement with industry end users and the research community is critical to the project, to ensure relevance and practicality of outcomes and encourage shared learning.

Over the year, the researchers established partnership and engaged with the following key stakeholder groups:

- the lead end user
- end users from the Bushfire CRC
- key secondary end users from planning, bushfire and emergency management sectors across case study areas
- the Australasian Fire and Emergency Service Authorities Council industry groups
- the fire and emergency management community, including through the Bushfire CRC
- the planning community
- research colleagues from the 'Community expectations' project group

Key engagement activities for the year are outlined in Figure 3.2.

Figure 3.2: Key engagement activities 2010-11

Activity	Stakeholder group
Joint project meeting with researchers across three Bushfire CRC projects being conducted on 'Understanding Risk', to coordinate projects and identify synergies and opportunities for collaboration, 25 November 2010	Research colleagues from the 'Community expectations' project group
Project team meeting by teleconference with lead end user and Bushfire CRC end user, 4 May 2011	Lead end user Bushfire CRC end user
Briefing AFAC Bushfire Reference Group, 18 May 2011	AFAC industry groups Key secondary end users
Guest lecture, Coastal Planning course, Canberra University, 1 August 2011	Urban and regional planning research students
Guest lecture, Disaster Law Masters course, ANU, 4 August 2011	Masters law research students
Presentation at Bushfire CRC Research Advisory Forum, Brisbane, QLD, 27 May 2011	Lead end user Bushfire CRC end user Secondary end users Industry groups Research community
Discussion of research project at the Canberra Urban and Regional Futures Regional Symposium, organised by Urban and Regional Planning, Canberra University, and held over two days in Canberra and Bateman's Bay, 25-26 August 2011	Policy makers Local government groups Industry groups Research community
Presentation, research wrap and research poster at AFAC & Bushfire CRC conference, Sydney, NSW, 31 August-1 September, 2011	Lead end user Bushfire CRC end user Industry groups Research community
Proposal on case studies rationale and scope provided to end users for comment	Secondary end users Lead end user Bushfire CRC end user

Section 4: Performance summary

Key outputs

Presentations

- Norman B, 2010, *Sustainable coastal planning for urban growth and climate change*. Keynote presentation to the 19th NSW Coastal Conference, Bateman's Bay, NSW, 10 November 2010
- Norman B, Sullivan K, 2011, *Understanding risk: mainstreaming fire and emergency management across urban and regional planning systems*. Presentation to the Bushfire CRC Research Advisory Forum, Brisbane, Queensland, 26 May 2011
- Sullivan K, 2011, *Engaging communities about coastal planning: collaborative action to build resilience*. Guest lecture, Coastal Planning, Urban and Regional Planning, Canberra University, 1 August 2011
- Sullivan K, 2011, *Integrating land use planning and emergency management in the context of climate change*. Guest lecture, Disaster Law Masters course, ANU, 4 August 2011
- Norman B, Sullivan K, 2011, *Planning for risk and uncertainty: new approaches for managing urban growth*. Presentation to the 2011 AFAC/Bushfire CRC Conference, Sydney, NSW, 31 August 2011

Conference papers

- Norman B, 2010, *Sustainable coastal planning for urban growth and climate change*. Proceedings of the 19th NSW Coastal Conference, Bateman's Bay, NSW, 10-12 November 2010 – available at <http://www.coastalconference.com/2010/default.asp>
- Norman B, Sullivan K, 2011, *Planning for risk and uncertainty: new approaches for managing urban growth*. Proceedings of the 2011 AFAC/Bushfire CRC Conference, Sydney, NSW, 31 August-1 September 2011 – to be available at <http://www.bushfirecrc.com>

Posters and other publications

- Norman B, Sullivan K, 2011, *Mind the policy gap: planning for fire risk and emergency management in the context of climate change*. Poster presented at the 2011 AFAC/Bushfire CRC conference, Sydney, NSW, 31 August-1 September 2011 – available at <http://www.bushfirecrc.com/projects/1-2/urban-and-regional-planning-systems-component-mainstreaming-fire-and-emergency-manageme>.
- Sullivan K, Norman B, 2011, *Annual Report 2010-2011: First Year of the Urban and Regional Planning for Risk and Uncertainty Project*. Urban and Regional Planning, University of Canberra – available at <http://www.bushfirecrc.com/projects/1-2/urban-and-regional-planning-systems-component-mainstreaming-fire-and-emergency-manageme>.

Literature reviews

- Sullivan K, Norman B, 2011, *Integrating spatial planning, bushfire risk and emergency management: critical literature review – stage 1*, Urban and Regional Planning, University of Canberra – available at <http://www.bushfirecrc.com/projects/1-2/urban-and-regional-planning-systems-component-mainstreaming-fire-and-emergency-manageme>.

Manuscripts for publication

- Sullivan K, Norman B (forthcoming), 'Spatial planning, risk and resilience: the urban edge and the Australian bush in a changing climate'

Manuscripts in preparation

- Sullivan K, Norman B, 'Bushfire risk, emergency management and climate adaptation through the planning lens: new directions in spatial planning'
- Norman B, Sullivan K, 2011, 'Planning for risk and uncertainty: new approaches for managing urban growth'

Section 5: Year ahead

Projected key activities and outputs 2011-12

The second year of the project will see a change in emphasis, with a major focus on industry engagement through the case studies. Projected key activities and outputs include:

Fieldwork and reporting on results of case studies

- Identification of key issues to be addressed in field visits and interviews in case study areas, for discussion with end users
- Outline of case studies methodology and investigative tools to address issues in the relationship between spatial planning and bushfire risk management
- Agreement on investigative scope of case studies with end users
- Development, testing and finalisation of case study methodology, in consultation with end users
- Preliminary analysis and sorting of fieldwork data, with review of emerging themes with end users
- Draft report on leading practice in strategic and statutory planning for bushfire risk and emergency management, as a result of the field visits and case studies, provided to lead end user
- Final report on field visits and case studies provided to end users
- Presentation of report findings to forum of practitioners and end users

Journal articles, discussion papers and Bushfire CRC Fire notes

- Fire note on Y1 outcomes
- Discussion paper on commonalities and inconsistencies across jurisdictions within planning and land use policies
- Discussion paper on barriers to incorporation of better practice into urban and regional planning
- Second journal article submitted for Bushfire CRC approval
- Third journal article submitted for Bushfire CRC approval
- Fire note on Y2 outcomes

Section 6: Contacts

Research team

Project leader

Professor Barbara Norman
Foundation Chair
Urban and Regional Planning
University of Canberra
Bruce ACT 2617
Australia
Tel: +61-2-6201-5644
Email: barbara.norman@canberra.edu.au

Project researcher

Dr Kate Sullivan
Senior Research Fellow
Urban and Regional Planning
University of Canberra
Bruce ACT 2617
Australia
Tel: +61-2-6206-3991
Email: kate.sullivan@canberra.edu.au

Lead end user

Mr Mick Ayre
Acting Director Development and Strategy
Northern Territory Fire and Rescue Service
Winnellie NT 0821
Australia
Tel: +61-8-8946-4143
Email: mick.ayre@nt.gov.au

Further information and project documents are available from the Bushfire CRC website: www.bushfirecrc.com