THE ECONOMICS OF BUSHFIRES AND BUSHFIRE MANAGEMENT

AIMS

- Develop an assessment framework and collect economic data on all bushfire impacts.
- Examining the economics of mitigation – eg. Aerial suppression and prescribed burning.
- Develop and test methodologies.

THEMES:-

Economic efficiency – applying the principles of economics to bushfires and bushfire management. Economics is interested in the net change to the economy of a defined area.

Linkages across other projects and program areas: economic assessment is a component of C7 (evaluation); the risk modelling Program A, sub-project 4.1; and complements assessments of the effectiveness of mitigation measures in all other programs.

Resilience – economic efficiency analysis may occasionally leave areas without limited services. Examining the impact of fire on local economies and livelihoods.

ECONOMIC COSTS / BENEFITS OF THE NTH EAST VICTORIAN FIRES 02-03

ECONOMIC BENEFITS

- Government recovery plan; **$70.6 m**
- Insurance compensation payments **$18,400**
- Bushfire environmental rehabilitation **$548k**
- Ongoing assistance $?
- Agriculture advisory services **$200k**
- Weed control grants **$300k**
- Key tourist road reparation **$100k**
- Support of assessment of damaged bridges **$80k**
- Direct assistance to tourism industry **$1,9 m**
- Livestock assistance **$500k**
- Fencing assistance **$5.75m**
- Domestic assistance **up to $28,800 per household,**
- Reparations of water tanks **$900 per person**

The economy of the area affected by the fire

ECONOMIC COSTS

- **108,393** hectares of private land (including farms and **2,500** hectares of plantations)
- **659** properties affected
- **3000 km** of fences
- **13,000** head of livestock
- Large loss in tourism, (over 2 million tourists visit this area each year contributing around **$100million** to local economy)
- **110** grazing areas were affected
- **50** historic huts burnt down

Grahlmann, 2005

Carbon Accounting

The carbon accounting model for forests (CAMFor), developed by the Australian Greenhouse Office (Richards and Evans 2000) to estimate carbon fluxes, allows the modeling of carbon emissions changes from bushfires of differing severity occurring in differing vegetation types. We are carrying out this modeling at present. Once these results are known, we can estimate the value of changes in carbon fluxes arising from bushfire scenarios. We will be examining the net carbon impact (and other greenhouse cases) over different time periods for various types of fire.

Richards, G.; Evans, D. 2000. Carbon Accounting Model for Forests (CAMFor) Users Manual. National Carbon Accounting System Technical Report No. 26 (URL: http://www.greenhouse.gov.au/ncas1).

bushfire CRC
Program C – Project C5
email: bushfire@rmit.edu.au
Project Leader: Professor John Handmer
Senior Research Economist: Gaminda Ganewatta
Research Economist: Linda Grahlmann
Research Economist: Bronwyn Coate
Research Officer: James Bennett

Economic Analysis of Aerial Fire Suppression - in co-operation with Program A

Aerial fire suppression is useful to reduce property damage and human suffering from fatalities and injuries, however associated costs remain very high compared to the use of ground suppression. The project examines the following questions:

- What is the most cost effective approach to aerial suppression?
- Does the value saved from the use of aerial suppression exceed the cost of operation?
- What benefits does society receive from having an aerial suppression capability?

'The average annual costs of attempting to put out these [catastrophic] fires grew by 150 percent, from $134 million in fiscal year 1986 to $335 million in fiscal year 1994 (in constant 1994 dollars). The costs of preparedness, including the costs of maintaining a readiness force to fight the fires, also rose, from $189 million in fiscal year 1992 to $326 million in fiscal year 1997 - an increase of about 70 percent.'
U.S General Accounting Office - 1999

Outputs to date:-

The economics of interface wildfires – John Handmer & Beth Proudley

The True Cost- A Bushfire Economic Model (presentation) – John Handmer & Beth Proudley

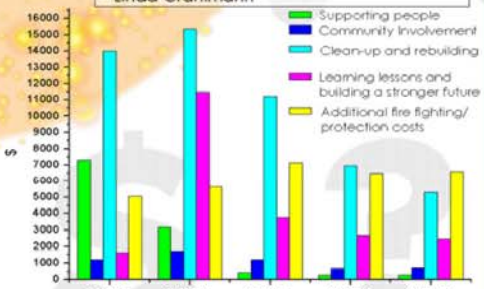
Valuing the SES: the social value volunteerism in the State Emergency Services (unpublished) – James Bennett, Oliver Percovich, John Handmer

Framework for measuring the value of Australian Bureau of Meteorology fire weather services (unpublished) – Don Gunasekera, Armando González-Cabán, Graham Mills, John Handmer & Tony Bannister

Fire Economics: the case for carbon accounting (draft) – James Bennett

Economic analysis of Aerial Fire Suppression in Australian (draft) – Bronwyn Coate, Gaminda Ganewatta & Beth Proudley

Economic impacts of the NE Victorian Fires (In preparation) – Linda Grahlmann



Costs can be ongoing – ACT Government

We are including all costs.

Tangible, intangible (e.g. biodiversity, lives), direct and indirect.

Some examples:

Informal vs. formal economy:

The formal economy is what appears in the national accounts. There is also an informal economy which may be very significant in some areas – reaching a quarter or more of all economic activity. This informal sector comprises economic activities that take place outside the framework of corporate, public and registered private sector establishments. Its activities rarely comply with established regulations governing labour practices, taxes and licensing requirements. We want to ensure that if it is significant in our case studies, that we count it.

Valuing volunteers:

We have completed work on the value of emergency services volunteers *Valuing the SES: the social value volunteerism in the State Emergency Services* and will be working on adjusting these results for volunteer fire fighters. The large numbers of fire-fighter volunteers involved makes the value very large.

Sub-Projects (not funded directly)

- **What is the economic and social value of the Bushfire CRC?**

Our initial analysis of the investment in the CRC against the expected returns shows that the CRC research program produces substantial economic benefits for Australia. For every dollar invested in the Bushfire CRC, Australian society should get more than $50 back.

Initial Draft report with Kevin O'Loughlin. Commissioned by Kevin O'Loughlin.

- **Valuing fire weather (and other intangibles).**

Proposal prepared with Bureau of Meteorology.

- **Prescribed burning** (under development)

Cost of Arson:

The total costs of dealing with bushfire and urban arson are estimated at $1.35 billion (Australian Institute of Criminology, 2003). This figure does not include the financial costs of the legal ramifications of urban/bushfire arson i.e. which are subsumed under other costs of dealing with crime. In comparison to the cost of arson, the annual cost of bushfires (regardless of their initial ignition cause) is approximately $77 million (Bureau of Transport & Regional Economics 2001).