

A Report on the Socio-Economic Impact of Bushfires on Rural Communities and Local Government in Gippsland and North East Victoria

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A Local Government Association

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EXECUTIVE SUMMARY

This study has focussed on assessing the significant social and economic costs of the 2003 bushfires across the Gippsland and North East Regions for both the short and medium terms. The study has also revealed that the bushfires are expected to have considerable direct and indirect effects on these regions for the long term (i.e. the next two to five years). In total, we estimate that the loss of income and production in the Shires of Alpine, East Gippsland, Indigo and Towong from the time of the fires to the present (May 2003) to be **\$121.1 million**.

Our assessment of the social and economic impacts are summarised below.

The Social Impacts of the Bushfires

The psychosocial effects of the fires varied within each region depending on the locations and proximity to the fires.

The lengthy time that communities in the vicinity of the fires had to stay alert, to prepare for possible fires, and be ready to protect their properties from the fires (up to 20 nights) was a marked drain on the physical, social and psychological health of people in those communities.

Residents' health was harmed by, or certainly at risk from, the smoke and haze produced by the fires. Certainly, respiratory conditions were exacerbated by these conditions. Moreover, individuals involved in fire fighting activities had to cope with the prospect of their homes being threatened, and in some cases, burned by the fires during their absence.

There was considerable disruption to family life and social links. Children were often sent away during the duration of the fires while their parents protected their homes and/or fought the fires.

Local communities and families felt isolated and sometimes assistance was regarded by locals as inappropriate. For example, they were provided with cheques rather than cash by government authorities. Road access closures, loss of schooling, mobile library and other community services, and broken communication/telephone lines exacerbated the feelings of isolation within local communities in the region, especially in areas directly impacted by the fires, but to varying degrees by communities threatened by or involved in fighting the fires.

Families also suffered financially because of their involvement in fighting the fires. Many people lost income, not just for the duration of the fires, but also in the weeks following.

While the threat of the fires in many ways had the effect of marshalling the resources of communities, the fires also had the effect of creating divisions within communities where it was perceived that some families/properties were given priority service by fire crews. Similarly some businesses were perceived by some to be treated more favorably by fire fighters seeking sustenance and short term accommodation (local business operator).

People also experienced disruption to their family lives and social links – with some local CFA volunteers having been involved in fighting fires in the State since November 2002. Children were often separated from their parents for the duration of the fires, partly because they were evacuated to relatives in safer locations.

People celebrated the way their communities worked together. There is a strong sense of voluntarism associated with the CFA, Red Cross and St John's Ambulance in rural communities, and this was crucial to enabling communities to mount an immediate response to the threat posed by the fires as they broke out.

In the medium term, the fires have heightened divisions between rural volunteers and City professionals, although this does not seem to have dented people's commitment to the principles of voluntarism.

Similarly, the fires brought out a perceived antipathy towards green politics and conservationism, even though these sorts of policies have the potential to help secure a sustainable future for regional agriculture and tourism.

People's personal financial security has been threatened because fire-fighters sometimes lost their second jobs when they did not attend their workplace, and because farmers and other business operators lost income and incurred expenses as a result of their absence from their workplaces. As well, some farms have sustained damage that has rendered them largely unviable in their current state.

Non-government industry and tourism associations have played a significant role in surveying their members about the impact which the fires have had on their businesses and advocating to governments for recovery assistance.

The media has had a negative impact on communities, in the short term, by heightening people's sense of panic as a result of sensationalist reporting of the fires. On the other hand, people acknowledged that media outlets (press and electronic) had provided assistance (sometimes free of charge) to help promote their regions as attractive destinations for tourism and investment since the fires – notwithstanding that some communities feel that their areas have received insufficient coverage (eg Central Gippsland which was not directly burned).

The fires have revealed how Shire Councils assist rural communities to respond to and recover from calamities such as bushfires. In the immediate term, local governments helped by organising communications and logistical support for fire-fighters and by providing information to residents about the scale of the threat posed by the fires. In the medium term, we found that local councils have worked effectively with community members to:

- Prepare submissions to federal and state inquiries for recovery assistance;
- Identify key economic and social impacts;
- Ensure local physical infrastructure (eg roads, bridges) is reinstated and social infrastructure (eg community building) is strengthened; and,

- Develop improved fire prevention education and fire fighting and recovery organisational structures.

State government agencies as well as non-government organisations also received considerable praise for the many and varied ways they helped to manage and implement fire-fighting and recovery efforts in local communities. Feedback also suggested, however, a number of improvements that could be made to future organisation and support activities.

The Economic Effect of the Bushfires

The RMIT Research Team estimated the economic effects of the bushfires by examining their impact on Gross Shire Products (GShPs). GShP is the Shire equivalent of a national economy's Gross Domestic Product (GDP). GDP is the market value of all final goods and services produced in an economy over a period of time (usually one year).

Table 1: Estimated Gross Shire Products by Industry (\$ Million)

Industry	Alpine LGA	East Gippsland LGA	Indigo LGA	Towong LGA
Agriculture, Forestry and Fishing	\$90.7	\$140.0	\$67.3	\$62.1
Mining	\$4.2	\$9.3	\$1.1	\$0.0
Manufacturing	\$117.7	\$92.1	\$88.6	\$15.2
Electricity, Gas and Water Supply	\$16.7	\$8.0	\$3.9	\$4.5
Construction	\$56.0	\$64.4	\$30.6	\$10.6
Wholesale Trade	\$38.7	\$41.1	\$16.3	\$8.9
Retail Trade	\$115.5	\$159.1	\$56.3	\$18.8
Accommodation, Cafes and Restaurants	\$129.6	\$72.7	\$24.6	\$9.7
Transport and Storage	\$36.2	\$34.6	\$13.9	\$6.0
Communication Services	\$15.3	\$12.3	\$5.6	\$2.1
Finance and Insurance	\$36.4	\$21.4	\$8.7	\$3.8
Property and Business Services	\$103.3	\$49.7	\$27.4	\$5.7
Government Administration and Defense	\$48.7	\$38.7	\$27.6	\$8.2
Education	\$52.7	\$85.6	\$41.8	\$16.1
Health and Community Services	\$96.3	\$108.9	\$66.2	\$19.6
Cultural and Recreational Services	\$49.1	\$13.8	\$5.6	\$2.9
Personal and Other Services	\$36.2	\$34.9	\$13.4	\$3.8
Non-classifiable economic units	\$11.2	\$12.2	\$5.2	\$3.2
Not stated	\$12.0	\$22.4	\$10.5	\$2.6
Total	\$1,066.6	\$1,021.2	\$514.7	\$203.8

Source: Australian Bureau of Statistics

Note: Excludes Wellington Shire which was not directly burned, but as the report shows, was directly affected.

It is measured either by using the expenditure approach, or the income approach. The expenditure approach involves aggregating all spending on final goods and services across the economy, while the income approach requires all income to be summed. These two methods are equivalent as that act of production always generates an equivalent amount of income.

Table 1 shows our estimates of GShPs across the various industrial sectors for the four Shire in our study.

The effect of the bushfires on Gross Shire Product (GShP).

The economic effects of the bushfires on GShPs were examined both in the short term and the medium term. The short term was defined as the period when the threat of the bushfires first appeared until after the threat had passed. Given that most communities reported fighting bushfires continuously for a period of around one month in January and February, we have used four weeks to be the short-term period when economic activity was affected.

The medium term was defined as the period after the threat of the bushfires had passed (some time in February) until the time of our investigation (the end of May). Therefore, we have used 12 weeks to be the medium term period when economic activity was affected by the consequences of the fires. Although we recognise that the economic effects of the fires are likely to last for some time into the future, the model we are using is not designed for forecasting, therefore we did not attempt to look beyond the present in terms of the effects of the fires on economic activity.

Our approach involved looking at the effects of the bushfires in isolation from other factors likely to have affected economic activity in the Shires in recent times. That is, we were trying to abstract from the effects of such things as the drought and the general tourism downturn due to security concerns. Using economic jargon, we are trying to look at the effects of the fires 'with all other things constant'. To do this we used the 2001-2002 financial year as our point of comparison. Therefore, we are assuming that economic activity in January to May 2002-2003 would have been the same as it was in 2001-2002 if it were not for the fires, and we are trying to quantify this difference.

The GShPs, which are our measure of the economic activity, are flow variables. That is, GShP is the dollar value of either spending or income earned in a Shire over a period of time (usually one year). Although the fires caused substantial damage to both publicly and privately owned infrastructure as well as the natural environment, for the purposes of this part of the analysis this is not included. This is because infrastructure is a stock variable. The fire damage to infrastructure is still important, but for this section of the study its relevance is confined to the extent to which fire damage has affected the flow variable of GShP. Clearly the loss of infrastructure has had a dramatic effect on many communities, and there have been various estimates as to the worth of this loss (by the State government as well as the various Shire councils). However, in this section of the report we are only looking at GShP.

The next step involved estimating the effects of the bushfires on the production levels in the various industries across the four Shires. This was done both for the short and medium term (as defined above). Even though, in the short term, many people may not have been fighting fires for the entire four weeks, we believe it is a reasonable assumption that economic activity in the regions was severely affected for this length of time, as almost all of the people we obtained information from said that all of the efforts of the local communities were devoted to the bushfires over this period. If this were the case it is difficult to see how normal economic activity could have occurred over this time.

We have estimated broad-brush changes to economic activity across the different sectors within each Shire. These estimates have been derived from information already

described in the earlier parts of this report and from our survey results (Appendix 7). That is, the information has been obtained from:

- Focus group meetings and interviews conducted by our researchers in the North East and Gippsland regions, see sections 4 and 5 of this report.
- Information collected by the Victorian Government's Ministerial Taskforce on Bushfire Recovery.
- Information from the submissions to the Government Inquiries from the Shires of Alpine, East Gippsland, Indigo and Towong.
- Responses to the surveys that we distributed.

In summary, in the short term we estimated that the effects of the bushfires on output levels were as follows:

- 90% reductions in output levels in Agriculture, Forestry and Fishing in Alpine, Indigo and Towong,
- 80% reduction in the output level in Agriculture, Forestry and Fishing in East Gippsland,
- 90% reductions in output levels in Construction in Alpine, Indigo and Towong,
- 80% reduction in the output level in Construction in East Gippsland,
- 50% reduction in output levels in Retail in Alpine, Indigo and Towong,
- 40% reduction in the output level in Retail in East Gippsland,
- 90% reductions in output levels in Accommodation, Cafes and Restaurants in Alpine, Indigo and Towong,
- 80% reductions in the output levels in Accommodation, Cafes and Restaurants in East Gippsland,
- 90% reductions in output levels in Cultural and Recreation Services in Alpine, Indigo and Towong,
- 80% reductions in the output levels in Cultural and Recreation Services in East Gippsland, and
- 20% reductions in the output levels in all other industries in all four Shires, with the exception of the predominantly public sector and essential services industries of Government, Administration and Defence, Education, Electricity, Gas and Water Supply and Health. In these industries output levels were held constant.

Table 2: Estimated Short Term Effect on GShP

Shire	GShP (\$million)	Effect (\$million)
Alpine LGA	\$1,066.6	-\$33.3
East Gippsland LGA	\$1,021.2	-\$27.9
Indigo LGA	\$514.7	-\$14.0
Towong LGA	\$203.8	-\$7.4
Total	\$2,806.3	-\$82.6

The data in the Table 2 shows a total reduction in output across all four Shires of \$82.6 million during this four-week period. Although it is true that much of this loss may be made up in the subsequent months, for example, there would have been a lot of construction activity and tree harvesting that that would have simply been delayed; a sizable proportion of the loss would never be made up. Examples of lost income and output that is probably gone forever would include the lost revenue associated with tourists and the loss and damage to agriculture (grapes, timber, livestock, feed and crops).

As regards the medium term, we estimate that the effects of the bushfires on output levels were as follows:

- 25% reductions in output levels in Agriculture, Forestry and Fishing in all four Shires,
- 25% reductions in output levels in Accommodation, Cafes and Restaurants in all four Shires, and
- 25% reductions in output levels in Cultural and Recreation Services in all four Shires.

The next step was to add both the short term and medium term effects of the bushfires together to obtain the total effects.

Table 3: Estimated Total Effect on GShP

Shire	GShP (\$million)	Effect (\$million)
Alpine LGA	\$1,066.6	-\$48.8
East Gippsland LGA	\$1,021.2	-\$40.9
Indigo LGA	\$514.7	-\$19.6
Towong LGA	\$203.8	-\$11.7
TOTAL	\$2,806.3	-\$121.1

Table 3 shows Total Effects and tells us that our estimate of the total effect of the bushfires on the level of economic activity for the period when the threat arose (some time in January) until the present (the end of May), across the Shires of Alpine, East Gippsland, Indigo and Towong is lost production and income of **\$121.1 million**.

The key points about this lost output are that:

- It would also have further spillover effects to other industries, both within the Shires examined in this study and in other industries right across Australia. An estimate of this additional spillover loss to other industries goes beyond the scope of the present study, as it would require more complicated economic modelling.
- The negative effects of the bushfires are likely to be felt for some time into the future. But as we have not developed a forecasting model we have not attempted to quantify any effects that go beyond the present.
- This figure does not include any of the damage or loss to infrastructure, property and the natural environment. Fire damage to infrastructure is only relevant in so far as it affects GShP. Nor does our total economic effects figure include social costs (family breakdown, health impacts, social links and so on).

RECOMMENDATIONS

The RMIT research team has made ten specific recommendations that we believe will address the many issues identified in our report. We also believe that if each of these recommendations is acted upon in good time, and in good faith, it will go a long way to reduce the social and economic impact of bushfires in Victoria in the future.

The RMIT research team recommends that:

1. An immediate study be undertaken into the financial viability of local businesses ravaged by the fires, including the development of strategies to rejuvenate the local farming economies and/or to cushion the effects of local economic restructuring as a result of the bushfires on those communities, businesses and landowners affected.
2. A review of the organisation, coordination and recovery processes associated with fighting bushfires be carried out.
3. A study of the capacity of the community to simultaneously fight fires while undertaking recovery operations, especially during extended periods of fires, be undertaken.
4. The Department of Infrastructure embarks on a complete assessment of the impact of the fires on local government infrastructure and facilities in the affected areas.
5. The State Government commissions ethnographic research into the social and cultural impact of the bushfires such that personal accounts can be presented to the wider Victorian community.
6. The State Government commits to research both the short and long-term environmental implications of the bushfire.
7. The Department of Sustainability and Environment undertakes research into effective bush fire management of public land adjacent to private land.
8. A strategic plan for a collective public policy response in the event of future bushfires be developed, and annually revised.
9. A comparative study of firefighting practices and recovery efforts in Victoria and Canberra (especially in relation to the resourcing of recovery efforts) be undertaken.
10. A follow-up socio-economic study be carried out in twelve months in order to document and evaluate steps taken to address the longer-term implications of the fires.

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1 INTRODUCTION

Timber Towns Victoria (TTV), a local government association, commissioned a team of researchers from RMIT University in May 2003 to undertake an assessment of the socio-economic impact of the recent bushfires on communities in the North East and Gippsland areas of the State¹. This report presents the findings from the study.

2 BACKGROUND²

In January and February 2003 the North East of the State of Victoria was engulfed by wildfires. Over a million hectares of forests, parks and private land burned. The areas most affected by the fires were the North East and Gippsland regions.

2.1 State Government Responses

In response, the Victorian Government established a Ministerial Taskforce on Bushfire Recovery, whose role it was to assess the impact of the fires and quickly put in place a range of recovery measures. The Final Report of the Ministerial Taskforce on Bushfire Recovery outlined spending by the Victorian State Government totalling \$201 million in response to the bushfires. This was made up of a \$13.9 million package to provide immediate recovery support to fire affected communities, \$115 million in fire suppression costs, \$3 million in financing support for concession loans through the Rural Finance Corporation, and other initiatives totalling \$69.4 million. These other initiatives in three key support areas: financial assistance, social support assistance, and the promotion of volunteer input from the wider community.

2.2 Community Recovery Initiatives

A number of initiatives have been implemented by the Victorian Government to assist affected communities in their recovery from the bushfires. One initiative has been the provision of grants, including temporary living expenses and re-establishment grants, and utility relief grants.

Community Recovery Committees (CRCs) have also been established in response to the bushfires. These CRCs oversee the recovery process and provide formal means for consultation, advice, planning and coordination to assist affected communities. CRCs include representatives from local government, State Government, and non-government agencies, community groups, businesses and health and welfare agencies. The State Government has also established an inter-departmental committee to work with CRCs to assist community recovery and to ensure implementation of initiatives.

The Department of Human Services (DHS) has funded community development officers in each of the affected local government areas, and councils are appointing officers for a period of 12 months who promote and support local community recovery. Additionally, the State Government has established the volunteer register to help people and communities affected by fire.

¹ The Terms of Reference for this research project, and the related Proposal prepared by the team, are reproduced in Appendix 1.

² This background information is drawn extensively from Victorian Government (2003) *Final Report from the Ministerial Taskforce on Bushfire Recovery*, Victorian Government (2003), *Bushfire Recovery 2003 Information Sheet - Recreational Fisheries* as well as www.parkweb.vic.gov.au (accessed 30 May 2003).

In January of this year the Victorian Government announced the establishment of a Bushfire Recovery Appeal Fund, for the collection and distribution of aid for bushfire relief. The Appeal Fund is chaired by Sir Gustav Nossal and supported by an independent advisory board. Those eligible for assistance include individuals and households whose primary place of residence is within bushfire affected areas, small businesses and farms located or operating in a bushfire affected area, and communities and volunteer organisations seeking to undertake community recovery and rebuilding activities.

Assistance with low-interest loans is available to primary producers and small businesses that suffered property loss or damage as a result of the bushfires. These concession loans, administered through the Rural Finance Corporation of Victoria, bear interest at 4% per annum for an initial period not exceeding five years. In addition to the loans, financial assistance is available for replacing lost or damaged structures, livestock, fodder and water and personal property.

2.3 Environmental Recovery Initiatives

The 2003 bushfires burned 1.1 million hectares of public land in northeast Victoria and Gippsland. The fires had a significant impact on Victoria's State forests, the Alpine, Mt Buffalo and Snowy River National Parks, and Mt Hotham and Falls Creek alpine resorts. All but 60,000 hectares of the fire occurred on public land. The consequences of such extensive fire damage included reduction in water quality and supply, destruction of habitat for significant plant and wild life, burned commercial timber stands, destroyed recreation, tourism and cultural sites, and affected farms next to public land.

Much of the land burned by the bushfires is part of the water supply catchments for towns in northeast Victoria and east Gippsland. As a consequence of these fires, in the short to medium term, river water quality is expected to be affected following significant rain, due to the potential for increased overland runoff.

Up to 9,000km of fire containment lines were constructed during the fire suppression efforts, with approximately 7,000km on public land and 1,700km on private land. These containment lines are now being progressively rehabilitated to minimise the risk that they will lead to soil erosion following rain.

The assets in 12 State Parks suffered extensive damage during the bushfires. These assets include bridges, buildings, camping grounds, car parks, fencing, general facilities, furniture, paths, trails and walking tracks, roads, roofed accommodation (including alpine huts), shelter, signage, snow poles, toilets, viewing lookouts, and water access structures. Assets in forests have also suffered damage including stream crossings, gates, signage and visitor facilities such as camping grounds, toilets, car parks, picnic areas, walking tracks and shelters.

In terms of ecological and cultural heritage, much damage was done by the bushfires. Medium-term strategies are in place for assisting the recovery of the natural environment, as the Victorian Government recognises that maintaining environmental services and biodiversity are fundamental to quality of life and well being.

The fires had a major impact on endangered species and habitats. Thirty-two vegetation types were affected, with some being totally burned out³. Also, approximately 70 threatened flora species have had between 90 and 100 per cent of their known Victorian distribution affected by the bushfires⁴, while 8 threatened species have had 90 to 100 per cent of their known Victorian habitat affected⁵. The key to longer-term recovery and survival of wildlife affected by fires is how vegetation responds and habitats recover. Some human intervention is required to facilitate or speed recovery processes.

In terms of cultural impacts, the fires affected approximately 270-recorded non-indigenous archaeological sites. These sites are associated with early European exploration, mining, settlement, pastoral, survey and recreational activities and are significant tourism and recreational attractions. Recovery action required involves the restoration and protection of non-indigenous cultural heritage assets damaged by fires and indigenous sites exposed and made vulnerable by the fires.

2.4 Economic Recovery Initiatives

While some businesses experienced an upturn as a direct result of the fire fighting efforts, most reported a 50-70 per cent downturn in business, with some cases as high as 100 per cent during and immediately after the bushfires. Business operators in the fire affected areas experienced an immediate and major reduction in demand for their goods and services, especially those reliant on tourism. Communities also suffered non-recoverable losses resulting from the cancellation of planned events, such as fishing contests, music festivals, expositions and shows, and sporting events.

It is believed that longer-term economic recovery is dependent on infrastructure repairs to roads and bridges, agricultural recovery, environmental recovery and the return of tourists⁶.

In terms of tourism, the bushfires affected more than 1,100 tourism businesses in the northeast and East Gippsland. The fires struck at what would have been the busiest time of the year. Recovery action to boost tourism includes the State Government's \$2 million Tourism Bushfire Recovery Plan.

Damage to private land resulting from the bushfires was limited to 60,000 hectares, with 26 houses and 364 farms affected. Over 11,000 head of livestock perished in the bushfires, made up of 7,800 sheep, 3,119 cattle and 184 other stock. Farming communities require assistance for stock loss, destroyed feed, damaged pastures, damaged fences, and the rehabilitation of fire control lines. To help support the farming community, the State Government will deliver a package of \$8.6 million in assistance.

Approximately 1,500km of Crown boundary fencing was destroyed or damaged by the fires. The State Government has announced a fencing relief package to enable the safe management and feeding of livestock and reduce the potential for soil erosion on areas with reduced vegetation cover due to fire.

³ Final Report From The Ministerial Taskforce, pg 8.

⁴ Ibid

⁵ Ibid

⁶ Interim Report From The Ministerial Taskforce On Bushfire Recovery, pg 17

In total, 4,435km of roadway was affected by the bushfires, including 11 arterial roads covering 870 kilometres and 4 bridges. It was imperative that these roads were reopened quickly to assist the economic recovery. All affected roads were reopened by the first week of March. The scope of damage to roads included destroyed or damaged roadside furniture, including 600 signs, 11,000 guideposts, and 5,800 meters of guardrails to be replaced, 40km of damaged line marking to be replaced, 13,000 burned trees, 19 damaged bridges with structural and safety hazards, and unstable roadside embankments resulting from burned out vegetation support.

The Bushfires are expected to have adverse impacts on fish populations in streams and lakes, due to the effects of the fires on water quality. The Department of Primary Industry has established a two-year Recreational Fisheries Bushfire Recovery Program to maintain fishing for local anglers and tourists in fire-affected areas. Also, a Fire Recovery Liaison Group has been established that aims to ensure 'recreational fishing and tourism interests are taken into account as recovery programs are developed and implemented.'⁷

3 STUDY METHODOLOGY

Our study approach reflected the need to provide a measured response to the socio-economic impact of the fires within a relatively short time frame and a limited budget, to ensure that TTV have credible information with which to support their discussions with the Victorian and Federal governments. It combined a series of methods and sources of data, including a literature review (government and shire reports and statistics, articles, and papers); face-to-face and telephone interviews with people in a sample of local government areas affected in some way by the fires; focus group/ group interviews with key stakeholders; and discussions with government agencies.

This combination of methods helped the consultants strengthen the results by overcoming charges of personal bias and any significant gaps that might occur given the short timelines of the study. Our approach also overcame the possible weakness of relying on one method and any personal biases stemming from a single method (Denzin, 1989; Glesne and Peshkin, 1992).

Following discussions with the clients we focused on the short and medium term socio-economic impact of the fires in East Gippsland and in the North East region. The North East region includes the Indigo, Alpine and Towong Shire Councils. These were areas that were known to have been affected directly and indirectly by the fires. It was important to understand the short and medium term effects of the fires of those communities directly impacted as well as adjoining communities, and as those further removed from the bushfire areas. The consultants visited all identified shires

The business questionnaire, together with a covering letter from Councillor Malcolm Hole, President of TTV, was distributed by post, facsimile, email, and by hand during the consultants' visits to the shires. It was designed to quantify, as far as practicable, the financial effects of the fires and included questions about the impact on business earnings, customers, timing of effects, employee numbers, prices, insurance, involvement in fighting the fires, medical costs, and government assistance. The social impact questionnaire was relatively short and aimed to gather some quantitative measures. However, given the tight timeframe for their completion and the consequent

⁷ Victorian Government, Bushfire Recover 2003 Community Information Sheet – Recreational Fisheries

poor response rate, the data gained has only been useful in helping support our interview findings. The distributed surveys can be found in Appendix 4, while a selection of the responses is in Appendix 5.

Although we endeavoured to survey bushfire-affected businesses, we were not very successful in obtaining large numbers of completed business surveys. This can be explained as we had limited time and resources to distribute surveys and to follow them up, and it appears that many people in the bushfire-affected areas had cooperated with a number of previous inquiries (including completing earlier surveys). This made them less inclined to return another survey.

Nevertheless, there was a lot of useful information in many of the surveys that were returned, and here is a brief summary of some information gleaned from a selection of the returned surveys presented in Appendix 5.

Almost all respondents in retail and tourism reported:

- 90 to 100% reduction in short term business
- 20 to 50% reduction in medium term business
- reduced employee numbers
- they generally provided some free and reduced priced products to people effected by the fires (including fire fighters)
- most employees spent time away from work fighting bush fires.

Timber industry respondents reported:

- 80 to 100% reduction in short term business
- increases in medium term business (trying to catch up on lost business)

A winery reported:

- similar short and medium term loss of business as was the case in other categories
- in addition to these losses they suffered smoke damage to grapes worth many thousands of dollars, which was not covered by insurance.

When all of these factors were taken into account in our economic model all four Shires combined, we estimated that the effect of the bushfires on the level of economic activity for the period when the threat arose (some time in January) until the present (the end of May), we estimate a loss of production and income of \$121.1 million. Refer to section 6 for details.

4 NORTH EAST REGION

4.1 Profile of the Region

The North East Region encompasses Indigo, Alpine and Towong Shires. The total population of the North East Region is approximately 38,000 people. This includes a Labour Force of around 17,000. The major industry sectors across the region in which people mainly find employment are:

- Agriculture, Forestry and Fishing
- Manufacturing
- Retail Trade
- Health and Community Services
- Accommodation, Cafes and Restaurants
- Property and Business Services
- Education⁸

This section of the Report provides assessments for each of the Shires in the North East Region.

4.2 Indigo Shire

Indigo Shire is located 270 km north-east of Melbourne and covers 2,016 sq. km. It has a population of 14, 536 people. Its industry is essentially rural. The shire economy is built around farming (beef, sheep, dairy, fruit and viticulture), processing of local primary produce and service industries, especially tourism. The major tourist attractions associated with Indigo Shire include the Rutherglen wine region and the historic towns of Beechworth, Chiltern and Yackandandah. These townships usually attract thousands of visitors each year.⁹

4.2.1 Focus Group consultations

Focus Group discussions were held in Indigo Shire on 19 May 2003. The researcher (Dr Scott Phillips, RMIT) met with representatives of local volunteer-based emergency service organisations as well as local farmers and business people.

Immediate Impacts of the Fires

People from Yackandandah said that the biggest thing was sleepless nights. Since the fires people talk about experiencing a sense of anxiety whenever they hear fire sirens.

⁸ The industry sector terminology used throughout this report draws upon the industry classifications used in the *ABS 1996 Census of Population and Housing*.

⁹ Indigo Shire Council (7 May 2003), *Submission to the Federal Inquiry Into Victorian Bushfires 2003: Final Copy*. 2 ('Shire at a Glance')

Businesses generally in Yackandandah were not affected significantly. The motel lost some income as a result of cancelled bookings for the long weekend following the fires, but the motel owner noted that trade had picked up by May. 'The media have done their job quite well', one person noted in this regard. She suggested that stories about Yackandandah on TV programs such as *Discover* had encouraged people to come back to Yackandandah as tourists. Tourism advertisements were run free of charge in local and regional newspapers also.

Similarly, Beechworth was described as having been like a ghost town immediately following the fires. At the time of the fires and for the weeks immediately following them, businesses were shut. There was too much smoke; there was nothing much to see; and inaccurate radio reports of the state of Beechworth itself suggested to tourists that it was best avoided. Again, positive media reports since then have helped to improve the situation. But there still appears to be some slowness in Beechworth's business activity. One local said she was sick of the 'constant grizzles' of tourism and business operators, who complain about the fall of in their business since the fires.

Farmers also have been affected. A farmer from the Chiltern area observed that farmers lost hay as a result of the fires, but that most properties were saved. This farmer has his property next to a National Park (under the management of Parks Victoria through the Department of Sustainability and the Environment – or DSE). Whilst the fire did not damage his property, he observed that 'it was all very scary'. A change in the direction of the wind could have meant that his farm might have been devastated.

This farmer also commented on the impact of the fires on tourism to Chiltern. Tourism to his local town, he said, 'stopped for weeks.' As he put it: 'It's as if someone had built a fence across the roads leading to Chiltern. All tourism stopped.' He noted that local tourism had started to show signs of recovery around Easter.

This farmer is a registered CFA volunteer, and in that capacity he helped to fight fires in the region. He described the efforts of the local CFA as well organised, saying that they 'did a wonderful job.' His description of the fire fighting effort, and the problems associated with it as a result of the involvement of professionals from Melbourne, stimulated a lot of discussion about the medium to long term social impact of the fires.

Medium term impacts of the fires

One of the themes to emerge from people's description of the fire fighting effort is a conflict between a 'roll up your sleeves' spirit of volunteerism (associated with country people generally) and a risk averse, 'by the book' spirit of professional fire management (associated with public servants and CFA professionals from Melbourne).

Red Cross volunteers observed that locals who were not registered CFA volunteers were not accepted for fire fighting duty 'because of the red tape of insurance and the like'. While some people associated this 'red tape' approach with the professionals who came in from Melbourne after the first few days of fire fighting 'to take charge of things', the St John's Ambulance and CFA representatives noted that guidelines for the use of volunteers had been developed by the CFA following the Coronial Inquiry into the Linton bushfires of 2000, where untrained volunteers had lost their lives. Now it is mandatory that every CFA volunteer undertake Minimal Skills training in order to be a registered

CFA volunteer. So, when the fires broke out in January this year, anyone who had not done the Minimal Skills training was not allowed to join the fire fighting effort.

The CFA informants observed that 'the whole community pulled together so strongly' to fight the fires. Local businesses provided chocolates and sustenance for the fire-fighters. Local people – Red Cross and everyday residents – brought in scones and cakes to the central Incident Control Centres – so much so that the CFA had to ask them to stop. Here too the community touched on another sore point – namely, that people's volunteer efforts to provide food for fire-fighters were not properly appreciated – partly because of concerns about the hygiene standards associated with donated food. The 'Melbourne people' expressed concerns that unhygienic food could cause illness or death. 'The same sort of sandwiches didn't kill you twenty years ago, so what's changed now?', one local woman remarked.

The Red Cross seems to have had their sense of value undermined by their recent experiences with the management of the fire fighting effort. Red Cross is the recognised agency to supply catering for the CFA and volunteers more generally during a prolonged emergency. This arrangement with the CFA 'worked well to a point this time', according to one Red Cross volunteer. She noted that the Red Cross was proving hundreds of sandwiches each day, but as more professionals from CFA, DSE and Parks Victoria became involved with the management of the fire fighting, the demand for cooked meals got beyond 500 per day. At that point the meal preparation function was outsourced by the DSE and Parks Victoria managers to the kitchens of nearby La Trobe University. Red Cross volunteers expressed their view that this arrangement should have been cleared through Red Cross Headquarters in Melbourne, so that the local Red Cross volunteers could have been advised by their own organisation of the new arrangement. In the emergency context, however, DSE and Parks Victoria circumvented the usual communications protocols with Red Cross and outsourced the function directly.

But it is not the Red Cross alone who feel that their volunteer efforts have been undermined by the intrusion of professionals from Melbourne. Local CFA volunteers also felt that their role and their local knowledge of fire fighting were undervalued and frustrated by 'Melbourne people'. When asked who these people were, one local volunteer explained that they were paid CFA staff and CFA volunteers from Melbourne. A long-standing local CFA Communications Officer recalled the first few days of the fire. He and his local CFA colleagues worked through the afternoon when the fire broke out and into the night. 'It was when we were relieved that things went pear-shaped.', he explained. He described how 'the Melbourne people' came in and took control of the Incident Control Centre. They installed sophisticated communications and computing equipment and assumed operational control for directing fire-fighting efforts of local CFA brigades. Thereafter, according to local people, they would not release control, would not consult with locals about how best to get to a fire site and would not eat locally-prepared sandwiches (claiming that they required a cooked meal).

Another local CFA fire-fighter added that this was a 'fairly typical pattern' for the whole of the North East of Victoria. That is, the local CFA Communications Officer ran things for the first 48 hours; then the Melbourne CFA officers came in and took charge of directing local fire fighting efforts without recourse to local knowledge. This is when things went wrong. This reference to local knowledge was constantly contrasted with the perceived relative ignorance of Melbourne people regarding local fire fighting strategies.

'We call them "Flatlanders"', one local said of the Melbourne people. 'They have never seen a hill in their lives and do not understand hill fires. They have fought grass fires, but they don't know how to fight hill fires.'

When locals say that things went wrong once Melbourne people became involved they seem to refer to operational confusions associated with factors like Melbourne CFA officers not knowing the quickest local route to a fire site or being confused about whether to call out a fire crew or not to properties under possible threat (and leaving local fire crews in an 'on again/off again' mode of operation).

CFA volunteers say they were frustrated by not being allowed to access the fire front because the Incident Control Centres were not seeking local input on where the brigades could best be utilised. Similarly, one Yackandandah local estimated that at one time about a dozen fire trucks were lined up in Yackandandah, unable to get to the water pumps and out to the fire front. She claimed that the hold up was because the fire brigades had to fill in a lot of paperwork before they could get out to the fire front.

There is a sense, then, that 'Melbourne people' got in the way of locals' ability to fight fires in the hills they know best. As a result there was a loss in the efficiency and effectiveness of local fire fighting efforts. Politicians from Melbourne also were lumped into this nuisance category. People joked that politicians had to be shown around so they could get a photo opportunity for the news. Once this had been done, the politicians would leave the area and the locals could get back to the task of fire fighting.

But it is not all bad news for the efforts of those who were associated with the work of the Incident Control Centres. When asked why the Indigo Shire had suffered only minimal property loss and no loss of life as a result of the fires, people referred to good luck and volunteers 'flogging their guts out'. But they also noted that the Incident Control Centres had done a great job. These had been set up by local volunteers and State public servants within two days of the fires breaking out, and they did excellent work in preparing maps of the fire spotting and growing fire fronts. Melbourne-based public officials and CFA officers were also praised for their work in planning to meet the logistical support requirements of fire-fighters (for such items as bedding, tents and relief teams). Where their performance was rated as poor was in the area of communications with the actual fire strike teams. And here the same issue of not utilizing local knowledge –especially that of local communications officers - was seen as the major shortcoming. As regards the actual work of the ICCs' operations, briefings and management meetings, people spoke very highly of the way these were managed.

The economic impact on CFA volunteers was identified as an issue. The local CFA officer for the Kiewa region explained that CFA volunteers were away from their businesses for 29 days straight. Most employees got paid by their employers, and so suffered no loss of income. Farmers, on the other hand, did incur costs, as they had to employ casual milkers to keep their dairy farms operational. Some people avoided these costs where wives, children and neighbours were able to pick up the load.

The economic impact on tourism does not seem to have been significant in the medium to long term. By Easter and thereafter tourism numbers had begun to pick up again. Tourists were encouraged by media reports about the regeneration of the environment. In nearby Mount Beauty and Bright, for example, tourists advised local tourism operators

that they intend to return to these locations every six months, in order to keep a progressive photo-record of the regeneration of the trees and hillsides.

But the pick up in tourism appears to be patchy. Some businesses, particularly motel owners and coach tour operators, experienced a 100% loss of income for several weeks after the fires. And even now there are ongoing losses associated with the fall off in coach tours and motel bookings. The North East Gardens bus tours out of Sydney, for instance, were cancelled because Sydney-siders thought the gardens in farms and local homes would have been burned out. This was a misperception of the situation, promoted by media misrepresentation of the fire damage.

In other instances the damage was real and had just as significant consequences. One local berry farm in the area had a vigorous business, but the fruit was affected by smoke from the fires and so was not fit for harvesting. Consequently, fruit pickers were not needed, the annual harvest was lost, and the tourism trade associated with 'pick your own' visits from Melbourne and Sydney did not eventuate. The business is now for sale.

Local people say it is hard to put a monetary figure on the loss of income associated with foregone custom – especially in the area of tourism. Similarly, it is hard to quantify how much income relief has been lost because businesses have not submitted applications for financial assistance. People explain that local farmers and business people often express an 'it's just one of those things' attitude, when they talk about financial loss from bushfires. The attitude is 'you just wear it'. The example was cited of two cabinet makers who rotated on CFA shifts, lost income, but did not submit claims for financial compensation. As a result of attitudes like this, people have not recovered the losses associated with the fires.

A further cost that is hard to measure is the hidden health cost associated with respiratory ailments that people suffered at the time of the fires and for some time afterwards. People also report ongoing mental health consequences, including depression and anxiety.

Another medium term impact of the fires is that people are re-thinking the way that local knowledge about fire prevention and fire fighting could be disseminated before the next fire occurs. And here people point to a social distinction that underlies their local social organisation. When asked how their local knowledge might be communicated, people explained that it would be not so much for the benefit of 'mainstream farmers' as it would be for 'lifestyle farmers'.

'Mainstream farmers' are described as local farmers who operate farms as going concerns. They are seen as being well prepared for bushfires, and it is estimated that nine out of ten of them would be members of a CFA brigade. 'Lifestyle farmers', on the other hand, are described as people who are retired from Melbourne or who have weekend hobby farms. These 'lifestylers' typically lack knowledge of bushfire prevention. In fact, as they want to live 'in a bush setting', they tend not to clear their small holdings of combustible scrub and dead wood. In the focus group discussions it was estimated that only about two in ten of the 'lifestyle farmers' would belong to CFA brigades. But locals put the view that 'lifestyle farmers' would be more interested in

bushfire preparedness since the recent fires. People believed that it would be timely, therefore, to update the CFA's *Living in the Bush: Bushfire Survival Plan Workbook*.¹⁰

People expressed concern about the way the media misrepresented the fires. Sensationalist reportage not only deterred tourists. It also produced a sense of panic among locals, many of whom relied on radio and TV accounts for knowledge of how the fires were progressing. And it was local government infrastructure that was seen as a key mechanism for countering this sense of panic. One person noted that the general community was sitting at home in panic as a result of media reportage. 'People attended shire meetings, hungry for information', she remarked. Another local commented that people were not sleeping and were stuck at home in panic. She said that it was only at shire meetings that people got a sense of who could provide support. At the local meetings they also benefited from sharing company with each other.

People associated with volunteer organisations noted some positive outcomes from the fires. The image of the Red Cross had improved considerably as a result of the work they had done for the community in a time of great emergency. The Beechworth Branch had won 12 new members since the fires. The Chiltern Branch had registered 10 new members. St John's Ambulance similarly experienced some modest growth in their membership since the fires.

The focus group discussion closed with people offering a number of recommendations for future responses to bushfires. The CFA representatives recommended that during any future fire incident, media representatives should liaise with the CFA and DSE for information. This might avoid a situation where the media produce sensationalist accounts of the fires, which could help to mitigate the sense of panic people commonly experienced. CFA volunteers noted that they are well trained in offering advice to the public via media outlets. They have a standard message: residents should have a fire plan in place; if they are going to leave their property, they should plan to leave early; and so on.

People also saw a role for the media in the form of social marketing – that is, accurate information on bushfires could be presented as part of a campaign on bushfire prevention and preparedness.

As regards recovery of the tourism economy, people mentioned that Tourism Victoria is working with the Indigo Tourism Board to develop positive media images of the recovery and regeneration of the region.

4.2.2 Public meeting on bushfire recovery

At the invitation of Mayor of Indigo Shire the researcher also participated in a public meeting in Wooragee (on the road between Beechworth and Yackandandah) in the evening of 19 May. It was attended by Shire Councillors as well as local government officials and some local farmers. These included:

¹⁰ Copies of this publication, printed in 1997, were available free of charge at the Indigo Shire Office.

Council perspectives

Before the meeting began, one councillor welcomed the chance to speak with the researcher about the impact of the fires on the Shire. He said that people's lives had been dislocated. Fencing replacement is an issue, in that the cost of fence replacement on Crown land has to be borne by farmers. No government assistance is available. More generally, although people had not lost their homes, they had suffered economic and psychological loss as a result of the fires. He cited the case of one farming couple in their 80s. They had lost all their hay, a significant number of their livestock and had some damage to their farm property – particularly their fencing. They had told him that they found it difficult to rebuild at their age, but felt they had to, as the farm is their home. He suggested there are many cases like this.

Public Forums, organised by the Shire Council, were important occasions when people could express their concerns and issues following the fires. One councillor noted that there had been a Public Forum at Wooragee already (on 29 April). He added that a lot of local people had prepared submissions to the State Bushfire Inquiry. In this respect he noted that DSE would hold Bushfire Inquiry public sessions in Beechworth on 10 June.

The Public Forum on 19 May (attended by the researchers) began with a presentation on Council's involvement in the fires by the Chief Executive Officer of the Indigo Shire Council. Following three weeks of fire fighting and support activities, the Council has entered the fire recovery phase. In this context, Council has used State Government money to employ two part-time Community Development Officers, to help individuals with issues. These officers and the Manager of Community Services have helped to secure financial assistance for local people from State and Federal sources. The Council has been involved in co-ordinating regional recovery meetings. The Council has mainly focused on lobbying State and Federal governments to provide funding for people affected by the fires. Council has sought assistance for such issues as clearance of fence lines (to reduce combustible grasses near fences), replacement of burned fencing and the purchase of water for stock. Finally, the Council has prepared a Submission to the State Government's Bushfire Inquiry.

The CEO of Indigo highlighted the following recovery issues:

- There was a substantial demand for water and fodder immediately following the fire. The Victorian Farmers Federation assisted in sourcing this from all over Victoria.
- A 200% increase in the demand for financial counselling in the last six weeks. In this context, financial counselling concerned issues associated with the fires and the drought. The two issues are seen by most people as inseparable.
- Reinstatement of fire containment lines has been a priority. The Council was hopeful of having this work completed by the end of the week. In this way, farmers could feel secure that their properties were better prepared for any future fire outbreak.
- Effective co-ordination relationships between government agencies are an important factor in facilitating recovery initiatives. The CEO highlighted the good

working relationships, which the Indigo Shire Council officials had enjoyed with Regional Office staff associated with State and Federal departments and agencies. He cited the example of Centrelink staff working well with North East Employment (a local employment agency) to provide workers who could help with fencing repairs. On the downside, he bemoaned that he could not get anywhere with the State Government in securing their agreement to provide financial assistance for fencing repairs on farms which bordered Parks Victoria lands.

- Significant social service support was being provided to individuals by now through the Council. The CEO expected the demand for this sort of support to peak a couple of months after the fires.

Farmers' perspectives

One farmer said that not enough is being done by way of bushfire prevention. He suggested there was an increased amount of land converted into Parks, and as a consequence there was insufficient fuel reduction burning being undertaken. He observed that Aborigines had used fire stick techniques to manage fire hazards, but that Parks Victoria did not reflect these traditional fire management processes in their management of what is effectively a cultural landscape.

This farmer argued that farmers whose properties abut Park lands are at greater fire risk, because Parks Victoria does not undertake sufficient controlled burning to maintain fire containment lines. Worse still, from his perspective, is the practice of DSE and the CFA lighting a containment fire and standing back while farm fences are burned in the process. The farmer said it is not good enough for these agencies to say that fences are insurable assets, when the costs of replacing fences on Crown land are not covered. He called on the Indigo Shire Council to make a submission for a better burn-off regime. It was his view that the Parks authorities do not seem to understand the need for more regular burn offs, so as to reduce combustible fuel near farms and country communities.

One farmer remarked that the forests managed by Parks Victoria do not look like natural forests. In the late nineteenth and early twentieth centuries, he said, 'you could drive at speed through the forests'. Today, by comparison, you 'could not even ride a horse through the forests', which look like 'a whole lot of broom handles standing close together.' A theme emerging from farmers' accounts of fire management is that Melbourne-based and university-trained policy advisers have dominated the agenda as regards burning-off. They have largely ignored forest lore and local knowledge. As a result, conservationist values have come into conflict with practical farming perspectives around the need for fuel reduction.

A local horticulturalist also complained about the way that the CFA came onto his property, bowling over his gate to gain access for the purpose of lighting fires for containment lines. In the event they spoiled his in-ground sprinkler system and did not consult with him about the location of the containment line. He called for strategic containment lines to be developed on the basis of consultation with property owners. Similarly, he argued that designated access gates should be developed, rather than continuing with the practice of simply knocking down fences and inadvertently allowing stock to wader across neighbouring properties.

He proposed that vegetation along roadsides and under power lines should be cleared rather than allowing this to become overgrown as 'wildlife corridors'. His wife said that environmental concerns about conservation are overtaking the public safety and fire prevention concerns of local ratepayers. She called on the Shire to be less environment oriented and more ratepayer oriented. She and her husband also suggested that farmers whose lands abut National Parks should be allowed to clear vegetation and create containment lines to protect their fencing – or the Government should pay half of any replacement costs incurred by bush fire damage.

People were ready to make suggestions about how the role of government could be improved. One local resident asked why the Army had not been used to help with logistical support. He suggested that the Army could help to set up mobile camps for the fire-fighters, instead of having fire-fighters sleeping in poor quality tents.

Another suggestion was that the Shire Council could advise people to install water tanks with appropriate adaptors, so that CFA fire-fighters from interstate (with differing hose connections) could connect their equipment to water sources on local properties.

One resident noted an anomaly where the Shire could serve fire hazard reduction notices on urban ratepayers, but could not do so with rural ratepayers. This is because rural ratepayers are prevented from undertaking fire hazard reduction activities on their properties if these breach Parks Victoria conservation guidelines.

Another farmer, who was a local fire prevention judge with many years experience as a CFA brigade leader, observed that not as much fire prevention work is carried out along roads and on properties as occurred twenty years ago. He believed that this is due in part to fire-fighters being busy with their other work and family commitments, and in part to a decrease in local volunteering for local fire prevention and fire fighting.

A further suggestion was that Shire Councils need to be vigilant about the ongoing effects of natural disasters like fires, drought and hail damage to orchards. Shires should recognise that there will be a need for fodder reserves and recovery assistance for between two and five seasons after any immediate crisis.

One farmer called on the Shire to contact Centrelink, the Department of Primary Industry and other Federal authorities, and to lobby them for counselling services (both emotional and financial) for farmers who have been affected by bushfires and drought.

The Mayor concluded the public meeting, noting that following such a one-in-a-hundred-years fire, the Shire Council needed to put the learnings from the experience into practice. In this way, rural communities in the future should have better prevention efforts and readiness plans in place.

4.2.3 Documentary evidence of responses to the impact of the fires

The Shire (with assistance from the Department of State and Regional Development) has sponsored a travelling show of responses to the January 2003 bushfires. This community exhibition is a show of photographs, primary school artworks and written material touring communities in Indigo Shire from Woolshed to Indigo Valley. It is co-ordinated by the Arts and Cultural Officer at the Indigo Shire Council and will run from 17th of May to 30th June.

The Indigo Shire Council has made written information about Bushfire Recovery assistance available via direct mail-out, through public meetings and at literature stands in the Shire Office. Literature has included information leaflets about assistance for the reinstatement (repair) of containment lines on local farming properties, various forms of income support and financial counselling and how to make a submission to the Victorian Bushfire Inquiry 2003.

In the May 2003 edition of the *Indigo Informer* (the Indigo Shire Council Newsletter) the Mayor noted in her 'Mayoral Thoughts' column:

Council and its employees have continued to do a lot of work with regard to drought and fire recovery issues. Whilst we have been pleased with the level of support from the State Government in general terms, we believe more should be done in assisting our farming community on both these issues. We will keep pushing for more drought relief funds and specific fire recovery funding, for example, farm fencing.¹¹

Several local business publications reflected the economic impact of the fires and the efforts of local businesses to recover their business positions. The Beechworth Wine Centre's Newsletter, *Fine Wine and Rare Antiques* (Vol 1, Issue 2, Autumn 2003) declared the headline news: 'Beechworth survives fires unscathed!' It noted: 'Now that we have survived this period of environmental uncertainty, local businesses are again open as usual and many offer special discounts to entice tourists to return to the North East of Victoria.'¹²

The Albury Wodonga Regional Tourism Forum Inc, an independent, grassroots-driven association made up of members with an interest in tourism around the region, conducted a survey of its members to gauge the extent of the fire and drought-related losses in different industry sectors. The January-February edition of the Forum's *Newsletter* reported as follows:

Our thoughts and sympathy go out to our members who are experiencing difficult times as a result of the prolonged drought and bush fires. Some members have had no income since the bush fires started in early January. It has now reached a crucial stage where we need to be very proactive and help the industry to recover the best way we can.¹³

Consequently the Forum undertook to survey its members and convene a public meeting so people could have a say and propose strategies to ensure 'a more sustainable future for the region.'¹⁴

The *Indigo Herald* (Friday, 9th May, 2003) publicised information about how to make a submission to the Victorian Bushfire Inquiry as well as details concerning the 'On Fire' travelling show of responses to the fires. The paper also ran a story on 'Fire Fighter Training at Beechworth', which promoted the Minimum Skills for Wildfire training course which has to be undertaken by Victoria's 60,000 volunteer fire-fighters by June 2005.

¹¹ *Indigo Informer*, Issue 2/2003:1

¹² *Fine Wine and Rare Antiques*, Vol 1, Issue 2, Autumn 2003: 1

¹³ *Albury Wodonga Regional Tourism Forum Inc January – February 2003 Newsletter*: 1

¹⁴ *ibid.*

Finally, the tension between the conservation values of the National Park and environmentalists, on one hand, and the practical concerns and local knowledge of regional farmers and CFA fire-fighters on the other was expressed starkly in an anonymous poem, entitled 'Green Pollies On Fire', in the *El Dorado and District Star* (a free community newsletter). In this piece the local poet addressed his green opponents thus:

Tell me now where's your habitat, in the parks that you craved?
But for your lack of care, the whole lot would be saved,
Once more rural's punished, through no fault of their own,
And where are the greenies, now the birds have flown/

Where were the greenies with all their ideas,
At home safe and sound; while we lived our worst fears!
The locals all told you, but not one of you listened,
Now your park lays in ashes that the devil has christened.¹⁵

The author goes on to urge politicians to weigh rural concerns with their eagerness to secure the environmentalist vote. In doing so the poem points up one of the major themes to emerge from the bush fires: the conflict between environmentalism and rural interests.

4.2.4 Conclusion

The research for this community impact assessment has revealed a number of emergent themes. These are:

- Businesses were initially severely affected by the bushfires, and have not yet recovered.
- The recovery that has occurred is patchy. Some businesses have closed, while others have recovered to some extent. Overall, businesses in Indigo Shire still suffer from the ongoing decline in tourism and from the generally straitened circumstances farmers and retailers have faced since the fires.
- It is difficult to put a monetary value on the losses associated with foregone custom – especially in the tourism sector.
- Farmers suffered economic losses mainly in regard to fencing damage. Consequently they are burdened with significant fencing repair costs. Damage to fencing was partly a direct consequence of the fires themselves and partly a result of CFA efforts to set containment fires on farms abutting the fire front. Farmers have also experienced economic difficulties due to loss of hay and some livestock.
- Volunteers have had their willingness to volunteer in the future partially undermined by the intrusion of external professionals who circumvented usual communication protocols with volunteer agencies. Volunteer fire-fighters also felt

¹⁵ *El Dorado and District Star* Issue 94, May 2003: 15

that their local knowledge was underutilised in the fire fighting effort when Melbourne-based professionals took charge of directing local fire fighting efforts.

- Despite this perceived slap in the face for local volunteers, the spirit of volunteering would seem to have remained healthy. People report increases in membership of the Red Cross and St John's Ambulance. And the local newspaper reported increases in CFA volunteers since the fires.
- There is a need for better communication and respect between Melbourne-based officials and local fire-fighters and volunteers in the future if fires are to be fought more efficiently and effectively.
- Another medium term impact of the fires is that people are re-thinking the way that local knowledge about fire prevention and fire fighting could be disseminated before the next fire occurs.
- Underlying the distinction sometimes made between 'locals' and 'lifestylers' is a cultural clash between practical rural knowledge and urban environmental conservatism. It is not so much that one is right and the other is wrong. It is more that a new balance between the two needs to be struck if rural communities are to develop a more sustainable future.
- Local government plays an important role not only in assisting with fire fighting but also in co-ordinating the delivery of recovery services. This includes lobbying State and Federal levels of government to secure the resources that farming communities need to cope with the ongoing aftermath of fires and droughts for 2 to 5 seasons after the immediate crisis has passed.
- And local tourism boards and forums also serve an important function of helping regional businesses to assess the extent of their income losses, so as to provide advice to governments on the sort of recovery assistance that local businesses require. In this way, local business and tourism associations work as effective partners with government to help communities in Victoria's timber towns to regenerate and grow again.

4.2.5 The total economic effect of the bushfire on the Indigo Shire

When all of these factors were taken into account in our economic model of the region, we estimated that the effect of the bushfires on the level of economic activity for the period when the threat arose (some time in January) until the present (the end of May), across the Shire of Indigo, was a loss of production and income of \$19.6 million. Refer to section 6 for details.

4.3 Alpine Shire

4.3.1 Introduction

For more than a month during early 2003 the Alpine Shire in Victoria's northeast was ravaged by bushfires. Every town and village in the Shire was affected. While the fires burned they presented a real threat to the lives of residents and to private and public property. The fires also adversely affected economic and social activities within the

Shire. These impacts on economic and social activity continue to threaten the viability of the towns of Alpine Shire, months after the actual fires themselves.

The Alpine Shire is approximately 300km northeast of Melbourne and has a resident population of almost 13,000 people. About 92% of the Shire's area of 4,837 square kilometres is public land, including significant sections of the Alpine National Park, as well as the Mt Buffalo National Park. The region contains three of Victoria's snow resorts – Mt Hotham/Dinner Plain, Falls Creek, and Mt Buffalo. The major towns within the Shire are Bright, Myrtleford, Mt Beauty and Dinner Plain. Other towns within the Shire include: Boogong, Buckland, Buffalo Creek, Coral Bank, Dandongadale, Dederang, Eurobin, Freeburgh, Germantown, Harrietville, Lake Buffalo, Mt Buffalo, Mudgegonga, Nug Nug, Ovens, Porepunkah, Rosewhite, Smoko, Tawonga, Tawonga South, Wandiligong.

4.3.2 Economic impact of the bushfires

Tourism, timber and agriculture are the traditional economic drivers of the region.

The bushfires, in terms of smoke and flames, threats to public safety and mass withdrawal of visitors has severely affected economic activity within the Shire. Tourism revenues have been greatly reduced as the number of visitors has fallen off dramatically. In turn, the flow-on effects to other businesses that are indirectly related to tourism have been significant and have 'clearly demonstrated the critical contribution that the tourism industry makes to the regional economy.'¹⁶

Additionally, it has been reported that significant impacts have been felt by the agricultural and construction sectors of the Alpine Shire Economy. For instance, in the case of the construction industry, a great deal of work had to be postponed during the fires because of the inability of construction workers to access worksites, particularly at alpine resorts. It has been reported that projects on the mountains are now running 40 days behind schedule. The agricultural sector is busy repairing damage to property, assessing reductions in available water, and addressing stock health and fodder issues.

The fires particularly affected the wine industry. Smoke-taint, where smoke from the bushfires permeated through the skin of grapes, rendering the grapes useless, has meant that losses of between \$10,000 and \$1 million¹⁷ are being faced by wine growers in the region. The combined estimated loss for Alpine Shire wine growers is between \$5 and \$8 million¹⁸.

That the fires had a significant effect on the Shire is obvious. The following quote in regards to the fires highlights this: 'This is the single greatest threat our region has ever faced to its economy and social fabric.'¹⁹

4.3.3 Effects on tourism

The Alpine Shire is a popular visitor destination and a leader in regional tourism. It attracts over 2 million visitors per annum. The Shire is one of natural beauty and spectacular scenery, with a broad range of adventure and nature-based activities, as

¹⁶ Alpine Shire, 2003 Bushfire Economic Recovery Strategy pg 3

¹⁷ Wine grower, Bushfire Recovery Appeal Fund Trust Board meeting, Alpine Shire, 22/05/03

¹⁸ Ibid

¹⁹ Alpine Shire, 2003 Bushfire Economic recovery Strategy, pg 3

well as food and wine attractions. It also has a diverse range of accommodation options to suit all budgets and tastes. There are many restaurants, wineries, cafes and galleries, while, in terms of adventure tourism, there is bushwalking, mountain bike riding, horse riding, hang-gliding, abseiling, microflights, hovercraft rides, caving and rafting.

4.3.4 Effects on agriculture and timber industries

At the time of the bushfires the agricultural and timber industries of Alpine Shire were dealing with the adverse effects of two major events. First, the closure of the Mt Beauty Timber mill in December 2002 resulted in the loss of more than 180 direct and indirect jobs in the Shire, and more than \$18.5 million from the local economy²⁰. The timber industry source who responded to the surveys stated that 'The engagement of all log harvesting contractors in fire suppression for many weeks at the height of this season severely depleted log stocks which will not be replenished by winter. This has caused and will continue to cause major disruption to my business.' He also went on to say, 'Salvage (logging) operations have been slow to start and a large volume of salvage resources will be lost.'

The second adverse event in the Shire occurred on 26 November 2002, when a devastating hail storm hit the north-east. This wiped out 84% of the Shire's apple production, costing the Shire more than \$20 million and the loss of as many as 1,100 jobs²¹.

4.3.5 Major economic issues

In the report 'Alpine Shire 2003 Bushfire Economic Recovery Strategy', prepared by the Alpine Shire Council in consultation with the Alpine Shire community, a number of key economic issues and impacts arising from the bushfires are addressed. Over a three-year period the Shire intends to undertake the following:

- address the immediate issues restricting the economic recovery of the Shire
- provide immediate and longer-term opportunities to stimulate economic activity, with a particular focus on creating new job opportunities and reinstating those jobs lost during the crisis
- maintain and build economic confidence in the Shire, with a particular focus on ensuring the progression of a range of multi-million dollar private investment projects already approved by Council's planning division
- provide an adequate level of support to business operators across all sectors of the local economy to facilitate their recovery from income and property losses sustained during and in the aftermath of the fires
- facilitate the implementation of initiatives that provide medium-term opportunities for the region to re-establish its position as a prime visitor destination, and one that provides excellent lifestyle and employment opportunities for new residents

²⁰ Alpine Shire, 2003 Bushfire Economic Recovery Strategy, pg 5

²¹ Ibid

- ensure that all infrastructure, particularly that which supports the nature based product and its accessibility, is reinstated and enhanced
- facilitate the further development of existing and potential publicly owned tourism product
- support the broader community in its endeavours to contribute to the economic recovery of the region
- ensure that water quality and supply issues are considered and addressed.

Further key points include:

- Business Operators
 - Income losses arising from a cessation of visitor activity and its flow on impacts
 - Potential closure of the few remaining adventure businesses that may arise from any 'loss of license' to access the parks, and the agricultural sectors loss of access to high country grazing
 - Psychological and physical health of business operators across all sectors.
- Job Losses
 - Decrease in economic activity has resulted in severe reduction in full-time and part-time positions, resulting in significant unemployment.
- Image/Perceptions
 - Visitor perception in relation to:
 - The scale of damage to the region's 'product offer'
 - The Alpine High Country being a 'safe place' to visit
 - Investor perceptions of the region and the opportunities it presents.
- Infrastructure/Product Offer
 - Infrastructure damage to key tracks and trails within the Alpine and Mt Buffalo National Parks, which will restrict visitor access and therefore significantly reduce nature-based product offer
 - General infrastructure damage to roads, bridges, signage, etc, and the ongoing impact of fire damage to surrounding environments e.g. slope stability in mountainous areas

- Reinstatement of damaged vegetation on key Crown land areas and National Parks
- Infrastructure damage to tracks and trails on Crown land that are used for specific sporting events and nature-based activities.
- Events and Festivals
 - Non-recoverable losses experienced by not-for-profit event and festival organisers arising from cancelled events planned during the fire period.
- Property Losses
 - Potential damage to crops, orchards, groves or grazing land and stock losses
 - Damage to private assets, including homes, sheds, yards, fencing, machinery, etc, in particular boundary fencing between Crown land and private property.
- Water
 - Water quality—short and medium-term, and the flow-on impacts of poor water quality on the economy
 - Utilisation of water from storage catchments (including farm dams) and natural river systems for fire fighting, reducing already limited supplies resulting from drought conditions.

4.3.6 Shire economic surveys

In order to explicitly measure the economic impacts of the bushfires on the Alpine community, the Alpine Shire Council conducted a survey of businesses. Of 542 businesses on their database, the Shire surveyed 177²².

Of the 177 businesses surveyed the results were as follows:

- For the short-term January/February period:
 - 40 reported no decline in anticipated income
 - 42 reported an anticipated decline of 45%
 - 18 reported a decline in income but did not specify a \$ or % value
 - 77 reported an average income decline of \$14,800.
- For the medium-term Autumn period:
 - 25 anticipated no change in income
 - 8 anticipated a decline in income but did not specify a \$ or % value
 - 41 anticipated an average decline of \$12,800
 - 28 anticipated a reduction of up to 50% in bookings/income.

²² Alpine Shire Council, 2003 Bushfire Economic Recovery Strategy, pg 8

- Short-term reductions in employment for the January/February period were as follows:
 - 19 firms had reduced the number of full-time staff by an average of 3
 - 46 had reduced the number of part-time staff by an average of 3.5.
- Medium-term reductions in employment were as follows:
 - 15 reported medium term reductions in full-time and part-time staff of an average of 2.3.

Using the data collected from the 177 firms the following assumptions were made:

- 423 anticipate average losses of \$15,000 for the short-term January/February period = \$6,345,000
- 184 anticipate average losses of \$13,000 each for the medium-term Autumn period = \$2,392,000
- 47 have reduced full-time staff for the January/February period of an average of 3 staff = 141 jobs
- 101 have reduced part-time staff for the January/February period by an average of 3.5 = 354 jobs
- 38 anticipate medium-term reductions of 2.3 full-time and part-time staff = 87 jobs.

Accordingly, the Alpine Shire Council conservatively estimates that the impact of the bushfires is as follows:

Direct economic impact	\$8,737,000
Indirect economic impact	<u>\$13,105,500</u>
(using a conservative multiplier of 1.5)	\$21,842,500 ²³
Temporary reductions in full-time employment	141 jobs
Temporary reductions in part-time employment	354 jobs
Medium-term reductions in full-time and part-time employment	87
Multiplier effect of job losses	<u>873</u>
(using a conservative multiplier of 1.5)	1,455 job losses

4.3.7 Social impact of the bushfires

Surveys were distributed by the consultants to members of the Alpine Shire community in order to gather information on community opinions and concerns regarding the bushfires. From the surveys, and a Bushfire Recovery Appeal Fund Trust Board meeting held at the offices of the Alpine Shire Council on Thursday 22nd of May, the major concerns of the community were expressed:

Farmers were concerned that because many have had to sell livestock to pay their bills, their income for the current financial year will be boosted which may have implications in terms of their access to government grants.

There was concern expressed about equating the value of property damaged and the dollar value that will be received from insurance companies in payouts. For instance, one

²³ Businesses operating exclusively in the Alpine resorts of Falls Creek and Mt Hotham were not surveyed

farmer stated that some individual losses are as high as \$160,000, but nowhere near would this amount be paid out by insurance companies

A concern of some is whether the funds and grants received from government will be regarded as taxable income

A major concern for farmers is the issue of fencing that borders national parks. Farmers are concerned that the fencing is not insured because of the fact that much of the fire that burned fences was deliberately lit in back burning operations and, hence, is not covered by insurance

Many were concerned with the fact that the media was portraying the notion that the entire Shire was burned out and that it was unsafe to be anywhere in the Shire. One survey respondent stated 'The impression the media gave the general public was that the Bright township and surrounds were destroyed'. Another respondent said that the Shire was having 'difficulty in convincing people that the place is not burned out and that it is safe to have a holiday in Bright'.

Some residents expressed the view that the forms that needed to be filled in to receive government grants were confusing and unclear on some points. One respondent made the comment that 'the process is quite onerous'. Concern was also expressed that because of the isolation problems associated with the fires residents could not access their local Centrelink offices to claim government funding and that Centrelink would not allow for retrospective lodging of forms because it would 'set a precedent that couldn't be sustained.'²⁴ Some survey respondents expressed concern that the Federal Government was offering little support: 'We have applied for Federal Government assistance 2 months ago and as yet we haven't heard from them.' However, one survey respondent stated that 'The recovery plan instituted by the Alpine Shire and State Government was excellent, but misunderstanding of the overall problem took a medium time to catch on with the various Government departments.'

Residents experienced a great deal of stress during the fires. Comments such as 'My spouse was very disturbed by the stress and worry during the entire six weeks' were common. Also, many respondents stated that physical health problems, mental health problems, schooling/education problems, isolation problems, and reduced social support all resulted from the fires.

One respondent made the comment that 'All fire-fighters should be paid when working for the CFA in such a wide scale emergency.'

4.3.8 The total economic effect of the bushfire on the Alpine Shire

When all of these factors were taken into account in our economic model of the region, we estimated that the effect of the bushfires on the level of economic activity for the period when the threat arose (some time in January) until the present (the end of May), across the Shire of Alpine, was a loss of production and income of \$48.8 million. Refer to section 6 for details.

²⁴ Bushfire Recovery Appeal Fund Trust Board meeting, Alpine Shire, 22/05/03

4.4 Towong Shire

Covering an area of some 6,500 square kilometres, Towong Shire occupies the far north eastern 'corner' of Victoria. Of this area, nearly half is public land, much of it state and national park. Approximately 6,300 people live in the Shire. Just over a third (2,300) are resident in Corryong and Tallangatta, with the remainder in the smaller communities of Mitta Mitta, Dartmouth, Eskdale, Bellbridge, Bethanga, Talgarno, Granya, Walwa, Tintalra, Towong, Cudgewa and Koetong and in the surrounding rural areas.

It is estimated that 51% of the total area of the Shire was burned during the January/February bushfires, including:

- State forest and national park (including logging coupes)
- Private land used for agriculture
- Pine plantations
- Associated infrastructure such as fencing, signage, outbuildings

Every town, village and rural district in the Shire felt the impact of the fires in some way, and every business was affected.

4.4.1 Economic impacts

People caught up in fighting the fires experienced a direct loss of income. Most farmers spent between 4 and 6 weeks away from their farms fighting fires. During that time many farmers had to employ casual labour to milk their cows and feed their cattle. Alternatively, children had to take on farm labouring duties. Local building contractors lost between 18 and 35 days through firefighting. Building supplies companies lost income when the builders were away. And some local government workers took up to two weeks leave without pay to be at home or to help fight fires. Tourism businesses (motels and caravan parks) lost business when the fires took hold, as people holidaying in the Shire evacuated the area for safety reasons. On the other hand, tourism and retail businesses received compensatory income from accommodating and feeding firefighting staff from out of town.

In the period immediately after the fires, according to the CEO of Towong Shire Council, tourism and retail businesses were 'hammered'. Tourism dried up as a result of the way the area was portrayed by the media, although one tourism operator did state that because Towong Shire was generally ignored by the media the negative impacts of the bushfires on tourism were mitigated somewhat. Generally though, residents felt that the effects of the bushfires were grossly exaggerated by the media who engaged in sensationalist reporting. Additionally, State Government tourism-related media advertising after the fires ignored the some parts of the Shire, such as Corryong and Tallangatta. And retail trade was affected not only by the fall off in tourism but also because financially straitened locals were not going to pubs on Saturday nights or spending money in the shops. One local business operator described how for the duration of the fires (about six weeks) trade in Corryong virtually ceased. Most of the people who normally frequented Corryong's central business district were away at the

fire front. As virtually no-one came to town, there was, in his estimation, an 80 per cent loss of custom during January and most of February.

In the medium term, the local economy has experienced a patchy recovery. While some businesses (especially grocers) have picked up, others in non-essential sectors (such as kitchen ware) have found it difficult to recover custom and, in some cases, face closure. The local timber industry was also affected. About 150 hectares of softwood plantation timber were burned. And hardwood mills experienced several weeks of lost production, although they have since resumed activity.

The greatest financial impacts have been borne by farmers. Fodder and grain have been contaminated by pest infestations. Consequently, some livestock have died from food poisoning. Farmers also lost livestock during the fires. This has led to lost income for farmers who could have sold off livestock at saleyards. Those livestock that did survive have lost condition, largely because they have lost protein and have had to be fed with dry fodder, which farmers have had to buy in at a cost. This loss of condition will affect their future productivity, especially in terms of a reduced capacity for calving. Furthermore there were substantial losses of newborn calves in the first eight weeks after the fires due to the stress on the cows, in addition to the shock and stress felt by working farm animals, such as dogs, which has led to farmers incurring significantly higher veterinary costs. Farmers have also had to bear agistment-related freight costs in moving their animals to better pastures.

Decreased income has meant that some members of farm families have been forced to seek alternative employment in order to supplement family income, leading to pressure on children, family problems and fatigue issues. With less income farmers have also been forced to perform many more tasks themselves, again causing fatigue and increasing the likelihood of shortcuts being taken, accidents, emotional breakdowns and pressure on neighbours to provide assistance. Alternatively, some farmers have had to hire additional help to cope with the extra workload and this has been costly. Financial pressures have also increased the size and number of loans taken out by farmers, increasing financial burdens and the likelihood of future bankruptcies and farm repossessions.

Farmers also lost grasslands, many of which were burned as part of a firebreak strategy which the fire-fighting authorities implemented. The DSE firefighting strategy, according to the farmers, involved fighting the fires on private land rather than in the bush, and as a consequence farmers incurred extensive damage to their pastures and fencing. Farmers are particularly angry that the DSE's fire management strategy entailed burning farmers' fields and fences. They consider that the financial losses they experienced because of this could have been avoided had a different firefighting strategy been adopted. There is also the issue of re-sowing fields and pastures, given that drought conditions will make this difficult.

Farmers express anger over the inadequacy of the compensation available to them to repair the damage caused to their fields and fences. Fence damage sustained during the firefighting efforts is troublesome for farmers as it increases wild animal and stock loss problems, as well as posing a threat to the local community. And even where farmers were entitled to apply for compensation, many have not submitted applications for government assistance. The Community Development Officer for Towong Shire believes that this is partly due to fatigue:

When people were finished with firefighting, they had to try to rebuild their strength, their energy. Fatigue affected people's capacity to apply for government assistance. It seemed like there was a mountain of forms to fill out and people were just stuffed. There would have been a lot more people who could have applied for assistance than those that did. (Towong Shire Community Development Officer)

Assistance that was provided by the government was considered inappropriate. The Department of Human Services provided food parcels for distribution through Upper Murray Health Care. But these were not always taken up. One local resident made the observation that the use by dates on some of the products included in the food parcels had been passed. A local pastor explained that farmers felt 'too proud' to ask for these food parcels. Cash assistance would have been more suitable, as it would have allowed farmers to buy much-needed fodder and farm supplies. The DHS did provide bushfire-affected communities with small emergency grants of about \$200 to \$300 each. But of the 170 such grants made available to the North East of Victoria, only two grants were received by people in Towong Shire. This was largely because DHS officials did not visit the Shire once the crisis had passed. The bulk of the emergency grants were provided to Indigo and Alpine Shires.

On the other hand, the Bushfire Recovery Fund was well subscribed by people in Towong Shire, with about 600 applications being submitted. This outcome was attributed to the fact that residents were made aware of the Fund by the Community Development Officer located in the Shire itself.

Agriculture and forestry are the dominant industries in the Shire, representing over 60% of businesses in the Shire. Traditional farming activities in beef, dairy and sheep farming are predominant, but other more intensive agribusiness and horticultural enterprises are developing. Towong Shire is currently undertaking projects with the support of DIIRD working with growers of pyrethrum daisies and essential oil crops to develop appropriate infrastructure, extend value adding and expand the economic diversity of the agricultural base.

The tourism industry is also a key element of the local economy. Focused on the 'pure' attraction offered by a pristine local environment, an extensive promotional strategy has been developed to support local operators and harness the potential of the region particularly for ecotourism.

As at August 2001, 2651 residents of the Towong Shire were employed either full time or part time. 137 people were registered as unemployed. This represents an unemployment rate of 4.9%

In many areas of the Shire economic activity all but ceased for five weeks. No part of the Shire's economic base was untouched by this disaster. The timber harvesting and processing industries need to have access to raw materials that are now either damaged or inaccessible to them; tourism depends heavily on marketing and promotional strategies that centre on the 'pure' image of the region and its pristine environment which may take years to regenerate; agricultural enterprises rely on water supply that has been affected in both quality and quantity.

The fires have similarly universally affected individual residents of the Shire. While not all have been called upon to confront fire directly, the impacts on families, workplaces and community organisations are real and ongoing.

While disaster is never welcome, this one could not have come at a more devastating time for the communities and businesses of Towong. Communities, which had experienced many years of economic decline and population loss, were beginning to turn around.

Since the fire threat has eased, seventy-five businesses across the Shire were surveyed to gauge the economic impact of the fires on both employment numbers and dollar values in relation to turnover. The impact was assessed on both the immediate and future result.

Immediate Effects

- Six businesses, those specifically associated with the hospitality industry, either maintained or increased their turnover. The majority agreed this was a 'spike' due to the influx of fire crews.
- The remaining sixty-nine businesses reported losses in income ranging from 5% to 95%.
- Actual job losses across the Shire, as a direct result of the fire emergency are 54. This is an increase of 39% on the 2001 census.

Future Effects

- Autumn is the peak season for business operators across the Shire. With the prevailing conditions incomes losses from both rural and other business pursuits is estimated to \$3,750,000 until the end of the financial year.
- Reduction in employment numbers is estimated as a further 68 job losses which in total will be an increase of 89% above the 2001 census.

The following table (Table 4) contains some examples of actual businesses affected, including the percentage change in activity faced by the business and the effect on the business's employment.

Table 4: Effect of Fire on Towong Shire Businesses

Business	Type of Business	% Change in Activity	Nature of Impact	Impact on Employment
1	Caravan Park	Over 90% down	No tourists after January 10. Fire crew in for two weeks. Lower turnover in shop and petrol station. No bookings before Easter	2 jobs lost
2	Fish farm	90% down	Production stopped – infrastructure destroyed/damaged. Stock lost.	4 jobs lost (66%)
3	Retail (gifts and souvenirs)	90% down	No visitors so basically no customers. Takings severely affected.	–
4	Agriculture (farm)	20% down	25% of pasture lost.	–
5	Tourism accommodation	80%	No tourists around. Accommodated fire crews.	2 jobs lost
6	Motel	–	No visitors so no guests.	7 jobs lost (all)
7	Timber milling	–	No access to logging coupes for a 6-week period. Reduced stock levels. Contractors unwilling to enter fire-affected areas.	Potential loss of 15 permanent jobs, 6 sub-contractors and 7 casual positions.

The forecast economic impact of the fires across the Shire until the end of the financial year is estimated as²⁵:

Estimated Current Loss	\$1,100,000
Estimated Future Loss	<u>\$3,750,000</u>
	\$4,850,000
Estimated indirect loss due to lost time, etc. at a multiplier of 1.8	\$8,730,000
Estimated income foregone from the loss of 122 EFT jobs	\$3,416,000
Total estimated loss	\$16,996,000²⁶

²⁵ Towong Shire, Economic and Community Recovery and Renewal Strategy 2003, pg 8

²⁶ This represents 17% of the Shire's Gross Regional Product

4.4.2 Social impacts

Two Focus Group consultations were undertaken in Towong Shire, one at Corryong and the other at Tallangatta, on 9 July 2003. Twenty one people met with researchers (Dr Scott Phillips and Mr Michael Gangemi) – nine in Corryong and twelve in Tallangatta. The participants included representatives of local government, volunteer emergency services (CFA and Red Cross), churches, farmers and small business operators.

The bushfires that swept through the Towong Shire, describe the bushfires as the worst in the history of the region, burned for a period of six weeks during January and February. They had a major impact on people in both economic and social terms.

The bushfires placed people throughout Towong Shire under great mental and emotional stress. This is reflected in people's descriptions of the fires variously as 'frightening', 'exhausting', 'overwhelming', and 'devastating' and the use of words such as 'anger', 'frustration', 'confused', 'helpless' and 'ashamed' to describe their feelings. Residents reported difficulty in sleeping or going about normal life because of the stress, apprehension and anxiety caused by with fires burning around them. As one person put it:

It was stressful living with a constant "what if?" factor', a sense that the fire might engulf your business or your home. In the back of people's mind was the nagging question: 'Do we pack the car?'
(Local small business operator).

Some likened it to living in a war zone or a nuclear winter and as suffering from post-traumatic stress. The atmosphere was pervaded by dense-particle smoke. This affected people's breathing – especially the elderly. One senior Corryong resident said that people experienced 'breathlessness' and were 'frightened' by the thick fog of smoke that descended on the town. Another remark captured the disorientation and discomfort that people experienced:

Living in constant smoke was very difficult – a really filthy existence. They were shocking conditions to live in for six weeks. For people in the area, there was a sense of their lives being out of control. (Ray Park, CEO of Towong Shire)

Generally, residents have had to deal with burns, sleep deficiency, depression, helplessness, anger, worry, stress, confusion, anxiety and vindictiveness, leading to problems of drug dependency, excessive drinking and smoking, moodiness, irrational behaviour aggressiveness and eating disorders. There are fears that in the long term these problems will lead to the further problems of domestic violence, suicide, emotional abuse and family breakdown. A worry is that anniversaries of the fires will trigger flashbacks and re-occurring emotions.

Families were separated during the fires. With this came feelings of isolation and anxiety. It was quite common for families to send their children away (sometimes for up to six weeks) to stay with relatives outside the fire zone. The effects of this separation on the children have manifested themselves in some behavioural issues. Attention-seeking

behaviours are interpreted by some locals as symptomatic of the fear that some children have of being separated from their parents again (Mitta Valley Resident). Children have also been required to perform more work on farms in the post-fire period, leading to fears their school work may suffer.

Husbands and wives were separated from each other for extensive periods of time. While local men were away on volunteer firefighting duties, their wives were left at home with the children. Women, too, were parted from their families when they took up volunteer roles with the Red Cross or the CFA, often paying related expenses out of their own pockets, for which they have not been reimbursed.

Women 'left at home' on isolated farms, according to a volunteer Communications Officer with the CFA, felt 'hopeless' and 'isolated', as they were largely bereft of information about the location and behaviour of the fires. While local community radio station RTR 94.9 was accessible to residents at all times during the fires and did provide updates on a regular basis, residents felt that they were let down by the ABC and commercial radio networks. One local resident stated that the reporting by some of the radio stations was 'hysterical and sensationalised', while the local community radio station, RTR 94.9 'provided the facts'. To address their sense of isolation and anxiety, a telephone tree was organised by the local CFA Brigade to relay updates about changes in the fire conditions via contacts in designated areas (who would then make telephone contact with farms and homes in their area).

More generally, farms and families in fire-affected areas were cut off from social contact for extended periods. People in the caring professions (priests, pastors, nurses) noted that they were denied ready access to people isolated by the fires because they were not recognised as accredited professionals by the Police and the officials managing the Incident Control Centre. Only professionals with a 'pecuniary interest' in the fire-fighting (that is, someone concerned with protecting assets) were allowed into the fire-affected area. Pastors and nurses had to secure official approval from the ICC every time they attempted to undertake pastoral visits. The Roman Catholic priest explained that it was only in the third week of the bushfires that he got access to the fire area so he could visit families and listen to their stories. He found people pained by their isolation.

Part of their pain was caused by their feeling of being deprived of visits by the district nurse, and of being deprived of pastoral visits. (Corryong Roman Catholic Priest)

But there is another dimension to people's feelings of isolation which was associated with their sense of being largely unsupported in their desire to fight the fires that were threatening them and their livelihoods. As one local resident observed, when asked to describe how he felt at the time of the fires:

We felt totally isolated. I mean no-one seemed to want to do anything about the fires. (Local farmer)

Behind these sorts of remarks is a palpable anger about what local people see as gross mismanagement of the firefighting effort. This is described by some people as 'the other story' about the bushfires which needs to come out. Local people in Towong frequently put the view that the mismanagement of the fire fighting caused unnecessary loss of stock and damage to their fences, grass lands, capital equipment and property.

CFA volunteers described themselves as 'completely in conflict' with the CFA professionals and the DSE 'bureaucrats' from Melbourne. (Local farmer) What emerges from people's accounts - 'the other story' - is a situation of two conflicting cultures – one associated with bureaucratic professionalism and legalism, the other with rural pragmatism and flexibility. This conflict between 'the hierarchy' and the rural volunteers has several dimensions, each of which highlights significant problems in the way key actors related to each other through the formalised firefighting structures, centred around the Incident Control Centre (ICC) set up at Corryong.

One aspect of the conflict was associated with the under-utilisation and under-valuing of Towong people's local knowledge by the outside professionals who came into the area to manage the ICC. Local farmers, with a long history of involvement in fighting hill fires, were largely excluded from ICC operations, despite offering their advice and services.

People characterised the situation as one where there were, in effect, two sorts of CFA. On one hand there were the local CFA brigades, made up of local people who understand local conditions, terrain, roads and bulldozer tracks into the bush. These were under the control of a local Brigade or Group Captain. On the other hand there were the CFA 'strike teams', made up of externally-sourced professionals. These strike teams were under the control of the ICC, managed by DSE officials.

Local CFA firefighters expressed their belief that they should have been included on the trucks of externally-sourced 'strike teams' – especially when outside teams came from flat country around Melbourne or the Wimmera. Locals explained that 'flat country people' neither understand how hill fires behave nor have the knowledge of the local roads. Consequently, when local knowledge was not utilised by the ICC commanders, 'strike teams' frequently got lost on dead-end roads. This reduced the efficiency of the firefighting effort, as fire trucks often failed to reach farms and communities threatened by fires.

A related facet of the conflict between the two CFAs concerned the operational focus of the ICC. As local volunteers explained, the ICC model was implemented not as a system for supporting local fire fighters, but as a system for totally controlling the firefighting effort. As a result, local CFA volunteers were not utilised, and felt isolated from what they frequently described as 'the system'.

Effectively, then, there was a conflict about objectives. And these, in turn, reveal two different underlying models in people's mind about how best to respond to a bush fire. This theme emerged strongly in the accounts of Towong residents. The local CFA volunteers are farmers who have a mentality of **attacking and putting out fires** in the bush and on farmland. The DSE officials, on the other hand, were focused more on **controlling the fires** by bulldozing containment lines across farms at the perimeter of the National Parks forests. DSE officials did not favour using dozer trails to fight fires in the forest.

This divergence of objectives greatly frustrated local people:

Fires were not dealt with when they were still relatively benign. Locals asked the DSE co-coordinators to put the fires out, but they said they were concerned with controlling the fires. We saw some areas and properties burned out because of this, and it was unnecessary. (Local farmer)

Fire water trucks were left idle, and so were their crews, because the DSE were committed to controlling the fires by putting in containment lines instead of putting the fires out. (Local farmer and CFA volunteer)

It will take a long time for DSE to regain credibility here because of their strategy to put containment lines through people's farms, so they could fight the fires on private land rather than in the bush. (Local farmer/ small business operator and CFA volunteer)

Underlying these opposing objectives was a conflict about conservation of the forests and about what constitutes an asset worthy of protection. Whereas farmers had campaigned for fuel reduction and the maintenance of fire trails into the bush, the DSE opposed back burning and had allowed fire trails to become grown over. As regards asset protection, there was a similar difference of views. Farmers have a practical and vital interest in protecting not only their homes but also their livestock, pastures, fences and capital equipment. The city-based managers who took control of the ICC, on the other hand, reflected an essentially urban concern with the home as a family's key asset. CFA teams therefore were instructed by ICC managers to focus only on protecting farm houses and outbuildings, but not to be concerned with preserving livestock or pasture or fences or capital equipment. It was only private firefighters – farmers with a water tank on the back of a truck – who protected farm stock and equipment by putting out spot fires as soon as they started.

Nevertheless, local people's frustration over what they describe as the mismanagement of the firefighting has not dampened their commitment to volunteerism. They are, however, reconsidering how best to organise their volunteer fire fighting efforts in future.

The experience this time has led people to think that, in future, they'll make their own arrangements. People locally feel that the system was frustrating, remote from reality. (Local farmer/small business operator and CFA volunteer)

All these communities here are very isolated and have survived because of voluntarism. How will they cope in the future, because their volunteer spirit has been exhausted? (Local farmer and CFA volunteer)

The volunteer efforts of the Red Cross were widely applauded throughout Towong. Red Cross volunteers provided critical support counseling for CFA firefighters who were stressed by being away from their farms, homes and families. Red Cross people worked long shifts as First Aiders, monitoring the welfare of firefighters and residents and referring people to hospitals when necessary. And they spent long hours in a community kitchen in Corryong on catering duty. These ladies 'were beside themselves with worry about their farms and husbands exposed to the fires.' (Red Cross Volunteer)

When Red Cross caterers were stood down by the DSE caterers there was a sense of relief. But tension arose when Red Cross volunteers were instructed by the ICC management not to provide coffee and cakes to fire teams because of hygiene concerns. The Red Cross volunteers also reported feeling frustrated when they prepared lunch packs for the firefighters, only to learn from the ICC that these were not needed.

But the story is not all bad. DSE and CFA managers were praised for calling regular public meetings to provide information to the public about the fires and their fire fighting strategies. Local people said they respected the honest way in which DSE and CFA officers communicated with them at these meetings

The Shire Council was also praised for its efforts in providing support to the ICC. Local government's role was managed consistent with the Municipal Emergency Plan. Under this Plan, local governments only can assume a role in the co-ordination of support when a Municipal Emergency Co-ordination Centre (MECC) is set up. This is usually done at the request of the local Police.

The MECC and the ICC effectively work as complementary units. An ICC is only set up once a bush fire reaches a certain level of threat to community safety (Stage 3). Its role is to organise firefighting efforts. A MECC is set up to co-ordinate the provision of support services and equipment in line with ICC requirements. The sort of support provided by the MECC included providing firefighters with portaloos, towels, freezers, extra tents and a wide range of capital equipment – including utes, graders, trucks and other plant and equipment such as 'Road Closed' signs. The only issue that emerged concerned some difficulties in communication. While the fire effort was being managed from one location (the ICC in Corryong), co-ordination of support services was managed from another location (the MECC in Tallangatta). It was important for the MECC to communicate with the ICC so as to keep the community informed through a 24 hour telephone line and the distribution via fax of DSE update reports.

Perhaps the CEO of the Shire Council expressed the wider sentiments of people when he said that the fires had been 'an incredibly tough time for everyone'. He predicted that the Federal and State inquiries were likely to focus on apportioning blame and highlighting issues with the operations of agencies such as DSE and the CFA. This, in his view, was appropriate: problems need to be identified and remedied if fire prevention and firefighting is to be improved in the future. But the CEO of Towong Shire suggested that people need also to focus on the positives that came out of the experience. These included: the strength of local leadership; the capabilities of people (particularly the bravery of the CFA fire fighters and the heroic efforts of the volunteers more generally); the capacity of community organisations to work together in a time of crisis; the enduring value of volunteerism; and the sense of pride people drew from the community pulling together.

One of the participants in the Towong focus groups, Simon Paton, is the Convener of the Eureka Project, a study of the bushfires in Victoria's North East. The report submitted under his name, is entitled *A Case of Burning Neglect*.

The Foreword to the report speaks of the anguish of local farmers being 'fanned by the certain knowledge that with effective management this disaster could have been avoided'. (Eureka Project, 2003: 2) It continues:

There is a simmering outrage about the incompetence, competing agendas and political opportunism that masquerades as conservation policy for city consumption. On top of all this, North East Victorians are numb with the fear that a similar disaster could occur once again next summer. Nothing has changed. (Eureka Project 2003: 2)

Farmers feel that they have been excluded from the policy debate about forest management and fire prevention planning. The report therefore calls for greater involvement of the wider community in setting conservation and fire prevention policies. (Eureka Project 2003: 4)

What is called for is a more inclusive, participatory approach to governance, that enables local people to have input to not only policy development but also local volunteer-based firefighting. As the report notes:

The people of North East Victoria have reflected on the fire crisis with notable composure and clarity of thought. They offer a powerful and well argued case for local involvement in managing and implementing conservation policy, and for gutting the CFA of its highly paid 'policrats' in return for reinvestment in grassroots firefighting capability.

The report also emphasises that, for North East Victorians, 'the overwhelming concern is the manner in which the fires were fought. Here again the clash between city based professionals and local volunteers emerges as a major issue:

The DSE and CFA operated under a centralised incident command system which meant that huge 'control centres' were established and all useful authority was vested in city based staff – or inexperienced or unqualified 'ring ins' – who were brought in to direct the firefighting effort with little or no local knowledge. (Eureka Project 2003: 12)

In Summary

The people of Towong Shire felt isolated during and since the fires. They feel betrayed by politicians who failed to visit communities beyond Beechworth. They feel betrayed by the bureaucratic system that largely excluded them from fire prevention planning prior to fires breaking out and firefighting efforts once they did. Their sense of frustration is heightened by a sense that it could happen again. Consequently a number of recommendations emerged from the focus group discussions in Corryong and Tallangatta.

- Country people need to have a stronger involvement in setting the objectives for fire prevention and fire fighting. If the objectives in future are built around fuel reduction (through regular back-burning in the National Park lands) and putting out fires as and where they first start, there will be less fire damage in North East Victoria in the future.
- The local knowledge of CFA Volunteers needs to be valued more in the future. Fire management structures put in place in the future should be aimed at supporting

local firefighters rather than importing a 'professional' fire management machinery largely unconnected to local CFA expertise and team structures.

- Dozer tracks and fire trails that were made in the wilderness areas during the fires should be maintained, despite DSE's preference to allow these trails to be filled in and revegetated. Local firefighters believe that the dozer trails could help local brigades to fight fires in the bush in future, rather than allow them to burn out of control towards private farmlands and livestock.
- The 'asset protection' objective with which the CFA and DSE operate needs to be re-formulated so that it recognises that farmers' assets include not just their homes but their grasses, fodder, livestock, fences, outbuildings and capital equipment. This would help to inform a re-assessment of fire fighting strategies for country Victoria (and rural communities more generally).
- Fire management authorities need to respect the communication needs of people in isolated valley communities, who suffer from poor radio reception. In the event of future fires, greater priority should be placed on disseminating regular and accurate updates to these communities about fire conditions and behaviour.
- People in the caring professions (pastors and district nurses) need to be given some sort of accreditation to facilitate their access to communities in fire-affected areas. This will help to ensure that people's sense of isolation and their spiritual needs are better addressed in the future.

4.4.3 The Towong Shire Council response

The Towong Shire Council, in consultation with the Towong community, has prepared a strategic response to the bushfires. This is an integrated strategy that brings together a series of specific and targeted short, medium and long term renewal initiatives, 'focused at a range of levels, from individual communities and industries to Shire wide initiatives and those which will dovetail with the efforts of neighbouring Shires that are also bush fire affected'²⁷.

The following is a list of some of these recovery and renewal initiatives, including the objectives of the initiatives.

Following the bushfires of January/February 2003, the Towong Shire Council conducted a series of community and Business consultations to garner community and business attitudes to the bushfires, measure short-term and future impacts, and determine what needs to be done to ensure recovery and future well being. These sessions were conducted in Dartmouth, Mitta Mitta and Eskdale, Corryong, and with the Upper Murray Health Service. The following is a list of the Short-Term Impacts, Future Impacts, and Recovery and Future Wellbeing issues raised at these meetings:

²⁷ Towong Shire, Economic and Community Recovery and Renewal Strategy 2003, pg 4

Short-Term Impacts

- Loss of prime tourist attractions
- Lost prime business opportunities over the Easter long weekend – estimated loss \$245,000
- Poor water quality
- Cancellation of fishing competition – estimated loss \$400,000
- White water rafting business ceased operations after losses of \$135,000
- Mitta Muster Cancelled
- Lack of information and incorrect information about the fires caused high stress in the community
- Corryong saw mill and contractors unable to harvest or extract timber for six weeks
- Safety of logging contractors going into burned out areas is a concern
- Three Corryong based weed control businesses have had contracts terminated by NSW National parks – 5 EFT jobs lost and loss of \$250,000
- The Man From Snowy River Bush Festival cancelled – loss of \$30,000 in entry fees alone
- Local trade dropped to essential supplies only
- High levels of stress and anxiety amongst at risk frail aged and disabled population
- High hospital admittance rate for people who were oxygen dependent and other respiratory conditions
- Increased social and emotional issues presenting
- Rise in domestic violence and family breakdown
- Concern about the social and emotional wellbeing of children and youth
- Staffing at hospitals became a real issue
- Hospitals were left out of emergency service information networks

Future Impacts

- Rainfall will result in massive fish kills in creeks, rivers and lakes caused by ash, topsoil, debris and fire retardant washing into water supplies
- The Dart Cup, a major fishing competition held in June, is now threatened – potential loss \$500,000
- Hospital staff are becoming ill and needing time off work

Future and Wellbeing

- Local and regional marketing campaigns highlighting that the area is not burned and there is still lots to see and do
- Restocking of fish in rivers, streams and Lake Dartmouth
- Marketing assistance to rebuild fishing competitions and develop new products and attractions
- Small replacement event for the Mitta Muster (mini muster)
- Local infrastructure projects to provide work for tradesmen and trade for suppliers
- Increased social counselling and specialist counselling services
- Increased funding for youth activities and services

4.4.4 The total economic effect of the bushfire on the Towong Shire

When all of these factors were taken into account in our economic model of the region, we estimated that the effect of the bushfires on the level of economic activity for the period when the threat arose (some time in January) until the present (the end of May), across the Shire of Towong, was a loss of production and income of \$11.7 million. Refer to section 6 for details.

5 GIPPSLAND REGION

5.1 Profile of the Region

The Gippsland region encompasses the Wellington and East Gippsland Shires. There was little property fire damage within Wellington Shire, although as we will see many local communities within the shire were impacted. East Gippsland Shire, however, suffered significant bushfire damage.

East Gippsland Shire comprises approximately 38,000 people. It has a Labour Force of some 15,000 people. The areas directly affected by the fires were in the highlands of the Great Dividing Range, spanning an area from Mt. Bogong in the west to the Cobberas to the east. The areas include some significant river systems, including the Mitta Mitta, Mitchell, Nicholson, Tambo and Snowy river systems. High country streams provide water for local townships and farms in those areas.²⁸

Settlements in the affected areas within East Gippsland are quite dispersed, and are served with an extensive road network. The main townships directly affected by the wild fires were Omeo and Swifts Creek, both of which house 250-300 residents. Other nearby townships such as Tongio has similar numbers of residents.²⁹ Like highland townships further to the west in Wellington Shire, while not directly affected by the fires, merit examination (townships include Dargo, Licola, Heyfield and Walhalla, amongst others).

The Omeo-Tambo Valley differs from other areas in East Gippsland in that it houses a relatively young population (although the on-farm population is more middle-aged), the proportion of children in population is comparatively high, men outnumber women, there is high unemployment outside the townships, and household incomes are below regional averages.³⁰ The high country areas of Wellington and East Gippsland are largely public lands. Parks and adjoining areas are major tourist areas. They include significant recreational and commercial fishing rivers and streams, terrain of high conservation and landscape significance, and major forests. Recreational facilities and services include walking trails, horseback riding tracks, adventure driving tracks, canoeing and rafting opportunities, picnic and camping areas, caravan parks, tourist accommodation premises, and general stores. The valleys and high plains in the region cater for breeding and grazing of sheep and cattle, as well as some agriculture (including the production of herbs, berries, grapes, and nuts).³¹

The fires burned almost 1 million hectares of land in East Gippsland. Approximately 50,000ha of this was freehold land, mostly in the Mitta Mitta River, Tambo, and Snowy river catchments. Fires burned approximately 350,000ha of public land in the East Gippsland Catchment Management Authority Region, and impacted the Tambo/Nicholson and Snowy River water catchment areas. The Pinnabar State Forest was also ravaged by the fires.³²

²⁸ East Gippsland Shire (2003) *East Gippsland Bushfire Recovery – Integrated Submission*.

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ *Ibid*; Tourism Victoria (c2002) *Gippsland has it all: Official Visitors' Guide*, Melbourne.

³² East Gippsland Shire (2003) *East Gippsland Bushfire Recovery* report.

5.2. East Gippsland Shire

5.2.1 Social impact

The psychosocial effects of the fires are difficult to quantify. The impacts varied within the region depending on the locations and proximity to the fires. As detailed under economic impact below, in East Gippsland there was significant destruction and damage to homes, farming areas and facilities (including fencing, sheds, livestock, fodder, and local dams), tourism areas, conservation and high quality natural environments, historic buildings, and both public and private infrastructure (such as roads, and bridges). However, the impact of the fires was much more widely spread within the Gippsland region.

The lengthy time that communities in the vicinity of the fires (including communities like Dargo and Licola far west of the bushfire front) had to stay alert, to prepare for possible fires, and be ready to protect their properties from the fires (up to 20 nights) was a marked drain on their physical, social and psychological health of people in those communities. A typical observation:

It had a dramatic affect on their sleep patterns. They are still feeling the effects. (Community health officer).

Residents' health was harmed by or certainly at risk from the smoke and haze produced by the fires. Certainly, respiratory conditions were exacerbated by conditions.³³ Moreover, individuals involved in fire fighting activities had to cope with the prospect of their homes being threatened, and in some cases, burned by the fires during their absence. They felt that they had 'let their families down':

They feel that they have let their families down by not being at home when it was being threatened. (Community health officer).

There was considerable disruption to family life and social links. Some fire crews have been fighting fires in Victoria since November 2002 (government official). Children were often sent away during the duration of the fires while their parents protected their homes and/or fought the fires.

The kids were traumatised by the separation and their experience of the fires [through community consultations and media images]. (Community health officer).

A lot of children suffered at the time because their mums and dads stayed behind to fight the fires. Some teachers took in some of the kids. And on the kids' return they've had no social activities because they've been helping their parents fix the damage. (Visitor information centre).

Local communities and families felt isolated and sometimes assistance was said by locals to be inappropriate (example: receipt of cheques rather than cash from government authorities). Road access closures, loss of schooling, mobile library and other community services, and broken communication/telephone lines exacerbated the

³³ Ibid; Bush nurse, 2003.

feelings of isolation within local communities in the region, especially in areas directly impacted by the fires, but to varying degrees by communities threatened by or involved in fighting the fires.³⁴

Not surprisingly, the East Gippsland Shire (2003) stated that:

An unusually large number of calls to the East Gippsland recovery centre come from individuals seeking counselling services, underlying the degree to which anticipation of the fire and the sense of being cut off preyed on people's minds.

Families also suffered financially because of their involvement in fighting the fires. Many people lost income not just for the duration of the fires, say 6 to 8 weeks, but overall for about 6 months.

Since most farmers had two jobs, they lost the part time job while fighting the fires - so they lost their primary and secondary sources of income. (Community health officer).

Farms were burned out and people lost their homes. There are still no fences, stock feed, livestock is on the roadways, and the people are wondering what they're going to live on in the winter. (Bush nurse).

Yet, because people in the region are so resilient and proud they refused donations of food ('We'll get through it' being a common response) even though they were, and in many cases, are still in need of assistance (community health officer).

As a report coordinated by the East Gippsland Shire noted, there were also dangers to public health with the fire's destruction of animals, the release of hazardous materials, and pollution of drinking water (with ash and other pollutants).³⁵ While the threat of the fires in many ways had the effect of marshalling the resources of communities, the fires also had the effect of creating divisions within communities where it was perceived that some families/properties were given priority service by fire crews. As a community health official said:

There is lots of community anger about who got the fire trucks first at their door - a rich versus poor thing - a perception within the community.

Similarly some businesses were perceived by some to be treated more favourably by fire fighters seeking sustenance and short term accommodation (local business operator). It was argued by local officials that there is an urgent need for mediation and community building services in the aftermath of the fires, especially in the hardest hit areas such as Omeo.

It was also relayed that many fire fighters are finding it mentally taxing to cope with fire recovery efforts, particularly the review of fire operations and local community criticisms. Moreover, it was reported that volunteer fire fighters felt let down because they are not eligible for Centrelink assistance.

³⁴ East Gippsland Shire (2003) *East Gippsland Bushfire Recovery* report.

³⁵ Ibid; Community health official, 2003.

The severity of the fires has reduced the medium-to-long term productivity of the soils and hence the value of the grazing lands, such as in Omeo Valley. People are also concerned about their normal sources of water; the availability of sufficient water supplies (some have had to purchase water); and local water quality following runoff from badly burned catchment areas.

While the impact of the fires on peoples' personal health and social well-being was most obviously felt in parts of the east Gippsland region, the fires also adversely affected individuals, families and communities in central Gippsland. Many fire fighters from central Gippsland no doubt suffered with stress and smoke inhalation during and, for some, following the fires - for many of the same reasons outlined above. Likewise, their incomes would also have been reduced for the duration of the fires and possibly longer.

The separation of the central Gippsland fire fighters from their families severely disrupted normal family life and a sense of security. Locals have related instances where individuals who fought the fires are still traumatised in some way (Dargo locals). According to the bush nursing service and others at Dargo, locals suffered considerable stress at the time of the fires, with some families leaving the area, but it was thought that there were no significant ongoing health problems arising from the fires - at least not to the extent reported in East Gippsland.

5.2.2 Economic and environmental impact

The major economic impact was clearly felt in the eastern part of the Gippsland region and most particularly in places such as Omeo, Cobungra, Swifts Creek, Wulgulmerang, and Gelantipy to the east. As we will see, the fires impacted areas in Wellington Shire as well (although much less directly). However, the severity of the impact of the fires on areas to the east is reflected in part by the physical damage that they wrought in those areas. Property damage in East Gippsland included the loss of 36 homes and 21 woolsheds. It also experienced the loss or damage to about 175 other significant buildings (including heritage places, mining relics and historic houses). Approximately 3,450 cattle (across 50 farms), 8,900 sheep (on 40 farms), 13 horses, 65 goats, and other animals were killed or badly injured by the fires. Over 2,600km of fencing was destroyed, and there was damage or loss of machinery, stock yards, stores of feed, perennial pastures, tree crops and other assets.³⁶ Further, a government official considered that:

Of the farms affected in Gippsland 90% have major financial issues and 20–30% will go broke. Fires didn't directly affect all of the farms in the region, but most lost production as farmers were away fighting the fires.

Moreover, public infrastructure assets worth \$11.83M were damaged or destroyed by the fires. They included major and minor roads, bridges, road furniture, drainage systems, recreation and tourist facilities, as well as privately owned power distribution networks, and communication and telecommunication equipment.³⁷

Apart from the obvious economic costs incurred where farms lost their homes, water sources, crops, outbuildings, livestock, fencing, equipment, and fodder to the fires, some of the most severely burned land became less economically productive, with significantly

³⁶ East Gippsland Shire (2003) *East Gippsland Bushfire Recovery report*.

³⁷ *Ibid.*

more land required to produce the same level of farm output achieved prior to the fires. Some of these farms were possibly only marginally viable notwithstanding the fires. Wool crops were damaged with often forced sales bringing low returns. This has been exacerbated with livestock washed away in recent storms in the Omeo area (rural community development officer; local information officer).

In some areas in East Gippsland the fires were so intense that they burned through the soil surface to kill seeds needed for future growth. Further, there is the danger that unless good ground cover develops before snow falls, snow melting later in the year may result in soil erosion and significant pollution of local waterways. Aerial views show ash from the fires now reaching lakes (government and local government officials). This could also harm local fishing industries that are based on mountain stream fishing (local fishing operator).

Further, the fires harmed the timber industry. The fires have significantly reduced the extent of mature forests available for logging. The industry has an opportunity to salvage Ash forest species over the next 18 months that it would ordinarily do over 5 years (subject to road access). However, apart from the reductions in timber for milling caused by the fires, the industry is facing cutbacks in logging rates to achieve sustainable yields. This will, other things being equal, have a significant impact on the local economies and employment.

Notwithstanding the major damage to those communities directly hit by the fires, the fires have hurt many other communities in East Gippsland. For instance, the East Gippsland Shire (2003) has reported that there were also several areas not directly touched by the fires that were also detrimentally affected:

Some, such as Buchan and Bruthen, had good reason to fear that they would be next in line to feel the fires' impact. Others, such as Bairnsdale, Orbost and Bendoc, operated as bases for fire response activity. Many, including Ensay and Cassilis, suffered economic effects due to loss of trade from tourism or from the inability of timber harvesting and haulage operators to access coupes. And still others provided large numbers of volunteers to fight fires or support the front-line crews and local residents.

Wellington Shire officials and locals in Wellington Shire offer much the same views. Although local communities within Wellington Shire were not as ravaged by the fires as they were in Omeo, for instance, they convincingly argue that many of them, too, were adversely affected by the fires. This is worth exploring to highlight the indirect effects not only in Wellington but also in East Gippsland.

For example, Dargo Township in Wellington Shire, a significant tourist destination, was a sizeable NRE staging communication/co-ordination area for people fighting fires to the east of Dargo. The Municipal Emergency Resources (MER) Manager at Wellington Shire related that the government's bushfire recovery program overlooked Dargo. He pointed out that the fires damaged properties near Dargo, but that this has not been taken into account. While physical fire damage in areas near Dargo was limited, he and others consider that businesses in the Township were nonetheless significantly harmed by the fires.

They point out that general public access to Dargo was restricted from Princes Highway and other main routes during the fires and that this had a deleterious effect on the trade of some local businesses, including the Dargo Mill Tavern, Caravan Park, and Dargo Motor Inn. The owner of the Dargo General Store explained that:

Dargo was a ghost town because of the fires up until Easter. Takings were down compared with previous years. The Easter weekend was OK, but it didn't make up for the loss, and since Easter we've been well down.

He noted, for example, that his business has yet to return to pre-fire levels in terms of business from adventure trip customers.

Adventure tracks for 4-wheel and bikes in the Wonnangatta station were not re-opened until Easter. And they still can't get to Dargo from the northeast, although they now can from Licola.

A large part of this trade comes from the northeast (including the Bright, Mansfield, Seymour, Wangaratta areas), but this has dropped about 50 per cent since the fires, he said.

The Dargo Mill Tavern operator expressed a like point of view adding that the adventure tracks had been blocked [by government authorities] for the most lucrative months of the year.

Two months after the bushfires and the tourist tracks had still not been opened [by government authorities]. No one was allowed in. Business slowed down in a period when we would normally be booked out. (Mill Tavern operator).

Tour operators, such as Overland Gold Adventures, have been restricted from resuming business in the high country. According to a local tour operator, guided tours (including four-wheel drive and bushwalking trips) into the high country have declined significantly, and have still not entirely recovered from the direct and indirect impacts of the fires. Wellington Shire staff also reported that the fires significantly affected weekend expeditions to areas such as Wonnangatta and Dargo High Plains. One operator explained that local tour operators also rely to some extent on passing trade from Melbourne-Sydney tour buses, but that this trade had fallen during and since the fires, even though some areas were not under immediate threat. It was believed that the number of bus tours between Sydney and Melbourne has declined due in part to media stories about the damage of the fires.

Tour operators working in areas as far west as Walhalla reported a marked decline in business from late January through to early March, even though these areas were well removed from the fires to the east. As one adventure tour operator explained, 'The TV showed the fires and frightened people away'. However, he noted that business has since started to return to normal. Another operator in Licola reported that small weekend bookings fell away during the fires and through to the end of March. Even so, business was lighter than usual in March.

Regardless, whether business had since rebounded was little consolation, it was said, given that the businesses were essentially 'closed down' in the high season because of

the fires and are not expected to return to trading levels that are more viable until November this year. Even this was subject to a rider, as he noted:

This is provided the tracks are repaired and re-opened this quickly. But if we go on the experience of the 1988 fires around Licola and Cobbannah they won't be opened for 4 years. (Adventure tour operator).

The owner of the Dargo Hotel also explained that the Dargo's tourist trade was markedly reduced during the period of the fires. She was particularly concerned about the longer term and the effect on tourism in the area, particularly given that Dargo has not featured in tourist promotion of areas affected by the fires. Many business people in the central Gippsland region echoed this view.

Several people made the point that some businesses were affected more than others by the fires - especially those reliant on summer and autumn trade and offering services or products not demanded by the fire fighters and related workers. As a local rural community development officer observed:

Some businesses did OK, but others did not. Some businesses such as accommodation and food places have done OK where they've had fire fighters. Others selling local crafts, books and the like have not.

So, generally speaking, food premises and places of accommodation were less detrimentally affected than traders selling local crafts, gifts and products. Even so, not all food and accommodation premises were able to meet their normal high season trading levels. For instance, the Dargo Mill Tavern reported that it lost accommodation bookings in January that were never replaced by local fire fighters who were stationed in the Township. In addition, the Dargo Motor Inn and Caravan Park lost most of their trade during this period - trade not compensated by fire fighters seeking accommodation. Similarly, there are reported cases where local stores have accepted credit from struggling farmers, and are thus placing their livelihoods at risk.

Finally, the fires have had a significant environmental impact on the region. Comment has already been made on the severity of the fires and the medium to medium-term damage to regrowth of vegetation (although perhaps not weeds), as well as the harm to water sources and water quality. The fires, and the activities designed to restrict them, have reportedly threatened many fauna and flora species, together with some important indigenous and archaeological sites and historical structures in the highlands.³⁸

The social, environmental and economic effects of the fires aside, the experience highlighted, according to government officials, a need to improve the capacity to deal with fire recovery operations while simultaneously fighting fire fronts. Comments were also made that this could be achieved in part by centralising and co-ordinating recovery operations locally rather than in Melbourne.

5.2.3 The economic total effect of the bushfire on East Gippsland Shire

When all of these factors were taken into account in our economic model of the region, we estimated that the effect of the bushfires on the level of economic activity for the

³⁸ Ibid; government officials.

period when the threat arose (some time in January) until the present (the end of May), across the Shire of East Gippsland, was a loss of production and income of \$40.9 million. This of course excludes the indirect impact of the fires on adjoining Wellington Shire and should therefore be considered to be a conservative estimate of the fire's economic impact in the Gippsland region. Refer to section 6 for details.

6 THE ECONOMIC EFFECT OF THE BUSHFIRES ON THE NORTH EAST AND GIPPSLAND REGIONS

In this section we estimate the economic effects of the bushfires by examining their impact on Gross Shire Products (GShPs). GShP is the Shire equivalent of a national economy's Gross Domestic Product (GDP). GDP is the market value of all final goods and services produced in an economy over a period of time (usually one year). It is measured either by using the expenditure approach, or the income approach. The expenditure approach involves aggregating all spending on final goods and services across the economy, while the income approach requires all income to be summed. These two methods are equivalent as that act of production always generates an equivalent amount of income.

Each Shire's GShP is estimate for the financial year 2001-02 by allocating Victoria's Gross State Product (GSP) to the Shire's. This is done on the basis of the Shire's Labour Force as a proportion of Victoria's Labour Force, and on the basis of median income levels. Next, the shares of GShP contributed by the various industries within each Shire are deduced, giving the dollar value of economic activity across the different sectors. Then these figures are adjusted for our calculate approximation of the effects of the bushfires on economic activity in each industry and in each Shire. This gives quantified estimates of the economic effects of the bushfires, and this was done for both the short and medium term effects.

6.1 Estimating Gross Shire Products (GShP)

As the 1996 Australian Bureau of Statistics (ABS) Census was the most recent source of detailed Shire level data, this was used as the basis for the allocation of Victoria's 2002 Gross State Product (GSP). Although it may appear that 1996 Census data is out of date, it was only used to establish the industrial structure of each Shire, while 2002 data was used to ascertain the level of aggregate economic activity. Moreover, as industrial structure (which is the importance of each industry within an economy) does not vary significantly from year to year, it is unlikely that more recent data would greatly affect our results.

This data was used to obtain estimates of the GShPs for the:

- Alpine Shire Local Government Area
- East Gippsland Shire Local Government Area
- Indigo Shire Local Government Area, and
- Towong Shire Local Government Area.

Another complication was that the ABS statistical divisions do not precisely coincide with local government areas. Therefore, the ABS statistical divisions of Alpine East and West needed to be combined to obtain figures for the Alpine Shire. This was also the case with Indigo and Towong Shires, where the ABS divides them both into two statistical divisions (Pt A and Pt B). Therefore, both parts also needed to be aggregated for these two Shires. It was only for East Gippsland that the ABS statistical division was exactly the same as the Local Government Area. Therefore the ABS Local Government Area (LGA) Shire boundaries as defined in the 1996 Census were used. In the case of Alpine, Indigo and Towong Shires this meant adding together ABS statistical divisions.³⁹

6.1.1 The data

The ABS 1996 Census of Population and Housing was used to obtain, Shire Populations Shire Labour Forces, Median Shire Individual Weekly Incomes, the State Population, the State Labour Force, State Median State Weekly Individual Income and Employed Persons by Industry. The ABS Catalogue No.5220.0, Australian National Accounts: State Accounts gave us Victoria's Current Prices Gross State Product as at June 2002. ABS Catalogue No.3201.0, Population by Age and Sex, Australian States and Territories was use to obtain Victoria's Population as at June 2002.

6.1.2 The method

The steps involved in obtaining estimates of GShP (Tables 6, 7, 8 and 9) are presented here:

- (i) Using 1996 Census data, each Shire's Labour Force was expressed as a proportion of Victoria's Labour Force.
- (ii) Also using the 1996 Census data, each Shire's Median Individual Weekly Income's was expressed as a proportion of the equivalent figure for Victoria.
- (iii) The proportions in (i) and (ii) were then multiplied together to give an income adjusted Shire Labour Force share.
- (iv) The proportions in (iii) were then used to allocate Victoria's June 2002 Gross State Product (GSP) to each Shire to obtain our estimates of the Gross Shire Products (GShP).

Table 5: Victoria

1996 State Population	4,373,520
1996 State Labour Force	2,081,069
1996 Median State Weekly Individual Income	\$290
Victoria's Population, June 2002	4,872,538
Victoria's Labour Force, June 2002	2,318,519
Victoria's Gross State Product (GSP), June 2002 (\$Million)	\$183,703.0

³⁹ The ABS 1996 Census Statistical Divisions used in this study may slightly differ from the current local government boundaries. This may account for some of the small differences in the figures in this report and current figures.

Table 6: East Gippsland

	East Gippsland LGA
1996 Shire Population	37,893
1996 Shire Labour Force	15,461
1996 Median Shire Individual Weekly Income	\$217.0
1996 Shire Population as a % of State	0.87%
1996 Shire Labour Force as a % of State	0.74%
1996 Median Shire Individual Weekly Incomes as a % of State	74.83%
1996 Shire income adjusted Labour Force as a % of State	0.56%
Estimated Shire Population, June 2002	42,217
Estimated Shire Labour Force, June 2002	17,225
Estimated Gross Shire Product (GS hP), June 2002 (\$Million)	\$1,021.2

Table 7: Alpine

	Alpine East	Alpine West	Alpine LGA
1996 Shire Population	13,627	4,530	18,157
1996 Shire Labour Force	7,829	2,020	9,849
1996 Median Shire Individual Weekly Income	\$381.0	\$258.0	\$355.8*
1996 Shire Population as a % of State	0.31%	0.10%	0.42%
1996 Shire Labour Force as a % of State	0.38%	0.10%	0.47%
1996 Median Shire Individual Weekly Incomes as a % of State	131.38%	88.97%	122.68%
1996 Shire income adjusted Labour Force as a % of State	0.49%	0.09%	0.58%
Estimated Shire Population, June 2002	15,182	5,047	20,229
Estimated Shire Labour Force, June 2002	8,722	2,250	10,973
Estimated Gross Shire Product (GShP), June 2002 (\$Million)	\$908.0	\$158.6	\$1,066.6

* LGA is a weighted average, where the weights depend on Labour Force Shares

Table 8: Indigo

	Indigo Pt A	Indigo Pt B	Indigo LGA
1996 Shire Population	10,289	3,390	13,679
1996 Shire Labour Force	4,493	1,591	6,084
1996 Median Shire Individual Weekly Income	\$274.0	\$289.0	\$277.9*
1996 Shire Population as a % of State	0.24%	0.08%	0.31%
1996 Shire Labour Force as a % of State	0.22%	0.08%	0.29%
1996 Median Shire Individual Weekly Incomes as a % of State	94.48%	99.66%	95.84%
1996 Shire income adjusted Labour Force as a % of State	0.20%	0.08%	0.28%
Estimated Shire Population, June 2002	11,463	3,777	15,240
Estimated Shire Labour Force, June 2002	5,006	1,773	6,778
Estimated Gross Shire Product (GShP), June 2002 (\$Million)	\$374.7	\$140.0	\$514.7

* LGA is a weighted average, where the weights depend on Labour Force Shares

Table 9: Towong

	Towong Pt A	Towong Pt B	Towong LGA
1996 Shire Population	2,292	3,830	6,122
1996 Shire Labour Force	1,062	1,720	2,782
1996 Median Shire Individual Weekly Income	\$274.0	\$220.0	\$240.6*
1996 Shire Population as a % of State	0.05%	0.09%	0.14%
1996 Shire Labour Force as a % of State	0.05%	0.08%	0.13%
1996 Median Shire Individual Weekly Incomes as a % of State	94.48%	75.86%	82.97%
1996 Shire income adjusted Labour Force as a % of State	0.05%	0.06%	0.11%
Estimated Shire Population, June 2002.	2,554	4,267	6,821
Estimated Shire Labour Force, June 2002.	1,183	1,916	3,099
Estimated Gross Shire Product (GShP), June 2002 (\$Million)	\$88.6	\$115.2	\$203.8

* LGA is a weighted average, where the weights depend on Labour Force Shares

Once the estimates of GShP for each Shire were found, they were distributed to the various industries based on the number of employees in those sectors. The employee numbers in each industry are presented in Table 10, while the proportions are presented in Table 11. These employee proportions are then used to distribute the GShPs, with these results presented in Table 12. That is, Table 12 has our estimate of GShP across all of the different industries in the four Shire LGAs of Alpine, East Gippsland, Indigo and Towong.

Table 10: Employed Persons by Industry

	Alpine LGA	East Gippsland LGA	Indigo LGA	Towong LGA
Agriculture, Forestry and Fishing	787	1,841	731	788
Mining	36	122	12	0
Manufacturing	1,021	1,211	963	193
Electricity, Gas and Water Supply	145	105	42	57
Construction	486	847	333	135
Wholesale Trade	336	540	177	113
Retail Trade	1,002	2,091	612	239
Accommodation, Cafes and Restaurants	1,124	956	267	123
Transport and Storage	314	455	151	76
Communication Services	133	162	61	26
Finance and Insurance	316	281	95	48
Property and Business Services	896	653	298	72
Government Administration and Defense	422	509	300	104
Education	457	1,125	454	204
Health and Community Services	835	1,432	720	248
Cultural and Recreational Services	426	181	61	37
Personal and Other Services	314	459	146	48
Non-classifiable economic units	97	160	57	40
Not stated	104	295	114	33
Total	9,251	13,425	5,594	2,584

Note: Persons employed differ from Labour Force due to the unemployed.

Table 11: Employed Persons as a % of Total Employed in Each Shire

	Alpine LGA	East Gippsland LGA	Indigo LGA	Towong LGA
Agriculture, Forestry and Fishing	8.5%	13.7%	13.1%	30.5%
Mining	0.4%	0.9%	0.2%	0.0%
Manufacturing	11.0%	9.0%	17.2%	7.5%
Electricity, Gas and Water Supply	1.6%	0.8%	0.8%	2.2%
Construction	5.3%	6.3%	6.0%	5.2%
Wholesale Trade	3.6%	4.0%	3.2%	4.4%
Retail Trade	10.8%	15.6%	10.9%	9.2%
Accommodation, Cafes and Restaurants	12.2%	7.1%	4.8%	4.8%
Transport and Storage	3.4%	3.4%	2.7%	2.9%
Communication Services	1.4%	1.2%	1.1%	1.0%
Finance and Insurance	3.4%	2.1%	1.7%	1.9%
Property and Business Services	9.7%	4.9%	5.3%	2.8%
Government Administration and Defense	4.6%	3.8%	5.4%	4.0%
Education	4.9%	8.4%	8.1%	7.9%
Health and Community Services	9.0%	10.7%	12.9%	9.6%
Cultural and Recreational Services	4.6%	1.3%	1.1%	1.4%
Personal and Other Services	3.4%	3.4%	2.6%	1.9%
Non-classifiable economic units	1.0%	1.2%	1.0%	1.5%
Not stated	1.1%	2.2%	2.0%	1.3%
Total	100.0%	100.0%	100.0%	100.0%

Table 12: Estimated Gross Shire Products by Industry (\$ million)

	Alpine LGA	East Gippsland LGA	Indigo LGA	Towong LGA
Agriculture, Forestry and Fishing	\$90.7	\$140.0	\$67.3	\$62.1
Mining	\$4.2	\$9.3	\$1.1	\$0.0
Manufacturing	\$117.7	\$92.1	\$88.6	\$15.2
Electricity, Gas and Water Supply	\$16.7	\$8.0	\$3.9	\$4.5
Construction	\$56.0	\$64.4	\$30.6	\$10.6
Wholesale Trade	\$38.7	\$41.1	\$16.3	\$8.9
Retail Trade	\$115.5	\$159.1	\$56.3	\$18.8
Accommodation, Cafes and Restaurants	\$129.6	\$72.7	\$24.6	\$9.7
Transport and Storage	\$36.2	\$34.6	\$13.9	\$6.0
Communication Services	\$15.3	\$12.3	\$5.6	\$2.1
Finance and Insurance	\$36.4	\$21.4	\$8.7	\$3.8
Property and Business Services	\$103.3	\$49.7	\$27.4	\$5.7
Government Administration and Defense	\$48.7	\$38.7	\$27.6	\$8.2
Education	\$52.7	\$85.6	\$41.8	\$16.1
Health and Community Services	\$96.3	\$108.9	\$66.2	\$19.6
Cultural and Recreational Services	\$49.1	\$13.8	\$5.6	\$2.9
Personal and Other Services	\$36.2	\$34.9	\$13.4	\$3.8
Non-classifiable economic units	\$11.2	\$12.2	\$5.2	\$3.2
Not stated	\$12.0	\$22.4	\$10.5	\$2.6
Total	\$1,066.6	\$1,021.2	\$514.7	\$203.8

6.2 The Effect of the Bushfires on Gross Shire Product (GShP)

The economic effects of the bushfires were examined both in the short term and the medium term. The short term was defined as the period when the threat of the bushfires first appeared until after the threat had passed. Given that most communities reported fighting bushfires continuously for a period of around one month in January and February, we have used four weeks to be the short term time period when economic activity was affected.

The medium term was defined as the period after the threat of the bushfires had passed (some time in February) until the time of our investigation (the end of May). Therefore, we have used 12 weeks to be the medium term time period when economic activity was affected by the consequences of the fires. Although we recognise that the economic effects of the fires are likely to last for some time into the future, the model we are using is not designed for forecasting, therefore we did not attempt to look beyond the present in terms of the effects of the fires on economic activity.

Our approach endeavours to look at the effects of the bushfires in isolation to that of other factors that are likely to have affected economic activity in the Shires in recent times. That is, we were trying to abstract from the effects of such things as the drought and the general tourism downturn due to security concerns. Using economic jargon, we are trying to look at the effects of the fires 'with all other things constant'. To do this we used the 2001-2002 financial year as our point of comparison. Therefore, we are assuming that economic activity in January to May 2002-2003 would have been the

same as it was in 2001-2002 if it were not for the fires, and we are trying to quantify this difference.

The GShPs, which are our measure of the economic activity, are flow variables. That is, GShP is the dollar value of either spending or income earned in a Shire over a period of time (usually one year). Although the fires caused substantial damage to both publicly and privately owned infrastructure as well as the natural environment, for the purposes of this part of the analysis this is not included. This is because infrastructure is a stock variable. The fire damage to infrastructure is still important, but for this section of the study its relevance is confined to the extent to which fire damage has affected the flow variable of GShP.

The next step involved estimating the effects of the bushfires on the production levels in the various industries across the four Shires. This was done both for the short and medium term. The short term was defined as the period when the threat of bushfires first appeared until after it had passed. Given that most communities reported fighting bushfires continuously for a period of around one month in January and February this, we have used four weeks to be the short term time period when economic activity was being affected. Even though many people may not have been fighting fires for the entire four weeks, we believe it is a reasonable assumption that economic activity in the regions was severely affected for this length of time, as almost all of the people we obtained information from said that all of the efforts of the local communities were devoted to the bushfires over this period. If this were the case it is difficult to see how normal economic activity could have occurred over this time.

In this section we have estimated broad-brush changes to economic activity across the different sectors within each Shire. These estimates have been derived from information already described in the earlier parts of this report and from our survey results (Appendix 5). That is, the information has been obtained from them following sources.

- Focus group meetings and interviews conducted by our researchers in the North East and Gippsland regions, see sections 4 and 5 of this report.
- Information collected by the Ministerial Taskforce
- Information from the submissions to the State Government Inquiry from the Shires of Alpine and East Gippsland
- The responses to the surveys that we distributed. The distributed surveys can be found in Appendix 4, while a selection of the responses is in Appendix 5.

Although we endeavoured to survey bushfire affected business, we were not very successful in obtaining large numbers of completed responses. This can be explained as we had limited time and resources to distribute surveys and to follow them up, and it appears that many people in the bushfire-affected areas had previously cooperated with a number of earlier inquiries (including completing other surveys), and this made them less inclined to return another survey.

Nevertheless, there was a lot of useful information in many of the surveys that were returned. Here is a brief summary of some information gleaned from a selection of the returned surveys presented in Appendix 5.

Almost all respondents in retail and tourism reported:

- 90 to 100% reduction in short term business
- 20 to 50% reduction in medium term business
- reduced employee numbers
- they generally provided some free and reduced priced products to people effected by the fires (including fire fighters)
- most employees spent time away from work fighting bush fires.

Timber industry respondents reported:

- 80 to 100% reduction in short term business
- increases in medium term business (trying to catch up on lost business).

A winery reported:

- similar short and medium term loss of business as was the case in other categories
- in addition to these losses they suffered smoke damage to grapes worth many thousands of dollars, which was not covered by insurance.

6.2.1 The short term effects of the bushfires

It is clear from the information already presented that over the four week short-term period when the threat of the fires was imminent, virtually all-economic activity in Agriculture and Forestry, Construction, Accommodation, Cafes and Restaurants and Cultural and Recreation Services ceased. Therefore, we have reduced output in these industries by 90% in Alpine, Indigo and Towong. In East Gippsland we have reduced output in these industries by only 80%. The reason for the smaller reduction in East Gippsland is because this Shire contains coastal regions where the fire threat was not as great and where there appeared to still be some economic activity due to holidaymakers. Where as in the North East Region Shires the fires saw virtually all holidaymakers disappear.

Retail was also badly affected by the lack of visitors, so we have reduced its output by 50% in Alpine, Indigo and Towong, and 40% in East Gippsland (the smaller reduction in East Gippsland is for the same reason as described above). It may be argued that the influx of the fire fighters over this period could have lead to a boost in some of these industries. However, we believe that this was largely offset by many business providing free or reduced priced products to people affected by the fires (including fire fighters). For most of the remaining industries we have reduced output by only 20% over the short-term period in all four Shires. For of the predominantly public sector and essential services industries of Government, Administration and Defence, Education, Electricity, Gas and Water Supply and Health, output levels were held constant. The reason for this is that when constructing the national accounts the ABS values the public sector output

at cost. Therefore, as long as the public servants were still being paid over this period they were contributing to the GShPs. With the essential services industries of health (which also has a large public sector component) and Electricity, Gas and Water Supply we have assumed unchanged output. This is because there may have been both increases and decreases in production in these industries.

We recognise that at an individual firm level we have both under estimated and over estimated many of the effects of the bushfires. The figures here are our best guess at the total effects based on information obtained from many sources. Therefore, these % reductions represent our best estimate of the overall effects of the fires over this four-week period.

In summary, in the four-week short term we estimated that the effects of the bushfires on output levels were as follows:

- 90% reductions in output levels in Agriculture, Forestry and Fishing in Alpine, Indigo and Towong
- 80% reduction in the output level in Agriculture, Forestry and Fishing in East Gippsland
- 90% reductions in output levels in Construction in Alpine, Indigo and Towong
- 80% reduction in the output level in Construction in East Gippsland
- 50% reduction in output levels in Retail in Alpine, Indigo and Towong
- 40% reduction in the output level in Retail in East Gippsland
- 90% reductions in output levels in Accommodation, Cafes and Restaurants in Alpine, Indigo and Towong
- 80% reductions in the output levels in Accommodation, Cafes and Restaurants in East Gippsland
- 90% reductions in output levels in Cultural and Recreation Services in Alpine, Indigo and Towong
- 80% reductions in the output levels in Cultural and Recreation Services in East Gippsland, and
- 20% reductions in the output levels in all other industries in all four Shires, with the exception of the predominantly public sector and essential services industries of Government, Administration and Defence, Education, Electricity, Gas and Water Supply and Health. In these industries output levels were held constant.

Table 13: Alpine Estimated Short Term Effect on GShP⁴⁰

Industry	GShP (\$million)	Reduction %	Effect (\$million)
Agriculture, Forestry and Fishing	\$90.7	90%	-\$6.3
Mining	\$4.2	20%	-\$0.1
Manufacturing	\$117.7	20%	-\$1.8
Electricity, Gas and Water Supply	\$16.7	0%	\$0.0
Construction	\$56.0	90%	-\$3.9
Wholesale Trade	\$38.7	20%	-\$0.6
Retail Trade	\$115.5	50%	-\$4.4
Accommodation, Cafes and Restaurants	\$129.6	90%	-\$9.0
Transport and Storage	\$36.2	20%	-\$0.6
Communication Services	\$15.3	20%	-\$0.2
Finance and Insurance	\$36.4	20%	-\$0.6
Property and Business Services	\$103.3	20%	-\$1.6
Government Administration and Defense	\$48.7	0%	\$0.0
Education	\$52.7	0%	\$0.0
Health and Community Services	\$96.3	0%	\$0.0
Cultural and Recreational Services	\$49.1	90%	-\$3.4
Personal and Other Services	\$36.2	20%	-\$0.6
Non-classifiable economic units	\$11.2	20%	-\$0.2
Not stated	\$12.0	20%	-\$0.2
Total	\$1,066.6		-\$33.3

⁴⁰ Note that the GShP figures are for a 12 month period, while the output reductions are being applied for only four weeks. This is why a 90 % reduction in a \$90.7 million industry (Alpine, Agriculture) amounts to only \$6.3 million worth of lost output.

Table 14: East Gippsland Estimated Short Term Effect on GShP

Industry	GShP (\$million)	Reduction %	Effect (\$million)
Agriculture, Forestry and Fishing	\$140.0	80%	-\$8.6
Mining	\$9.3	20%	-\$0.1
Manufacturing	\$92.1	20%	-\$1.4
Electricity, Gas and Water Supply	\$8.0	0%	\$0.0
Construction	\$64.4	80%	-\$4.0
Wholesale Trade	\$41.1	20%	-\$0.6
Retail Trade	\$159.1	40%	-\$4.9
Accommodation, Cafes and Restaurants	\$72.7	80%	-\$4.5
Transport and Storage	\$34.6	20%	-\$0.5
Communication Services	\$12.3	20%	-\$0.2
Finance and Insurance	\$21.4	20%	-\$0.3
Property and Business Services	\$49.7	20%	-\$0.8
Government Administration and Defense	\$38.7	0%	\$0.0
Education	\$85.6	0%	\$0.0
Health and Community Services	\$108.9	0%	\$0.0
Cultural and Recreational Services	\$13.8	80%	-\$0.8
Personal and Other Services	\$34.9	20%	-\$0.5
Non-classifiable economic units	\$12.2	20%	-\$0.2
Not stated	\$22.4	20%	-\$0.3
Total	\$1,021.2		-\$27.9

Table 15: Indigo Estimated Short Term Effect on GShP

Industry	GShP (\$million)	Reduction %	Effect (\$million)
Agriculture, Forestry and Fishing	\$67.3	90%	-\$4.7
Mining	\$1.1	20%	\$0.0
Manufacturing	\$88.6	20%	-\$1.4
Electricity, Gas and Water Supply	\$3.9	0%	\$0.0
Construction	\$30.6	90%	-\$2.1
Wholesale Trade	\$16.3	20%	-\$0.3
Retail Trade	\$56.3	50%	-\$2.2
Accommodation, Cafes and Restaurants	\$24.6	90%	-\$1.7
Transport and Storage	\$13.9	20%	-\$0.2
Communication Services	\$5.6	20%	-\$0.1
Finance and Insurance	\$8.7	20%	-\$0.1
Property and Business Services	\$27.4	20%	-\$0.4
Government Administration and Defense	\$27.6	0%	\$0.0
Education	\$41.8	0%	\$0.0
Health and Community Services	\$66.2	0%	\$0.0
Cultural and Recreational Services	\$5.6	90%	-\$0.4
Personal and Other Services	\$13.4	20%	-\$0.2
Non-classifiable economic units	\$5.2	20%	-\$0.1
Not stated	\$10.5	20%	-\$0.2
Total	\$514.7		-\$14.0

Table 16: Towong LGA Estimated Short Term Effect on GShP

Industry	GShP (\$million)	Reduction %	Effect (\$million)
Agriculture, Forestry and Fishing	\$62.1	90%	-\$4.3
Mining	\$0.0	20%	\$0.0
Manufacturing	\$15.2	20%	-\$0.2
Electricity, Gas and Water Supply	\$4.5	0%	\$0.0
Construction	\$10.6	90%	-\$0.7
Wholesale Trade	\$8.9	20%	-\$0.1
Retail Trade	\$18.8	50%	-\$0.7
Accommodation, Cafes and Restaurants	\$9.7	90%	-\$0.7
Transport and Storage	\$6.0	20%	-\$0.1
Communication Services	\$2.1	20%	\$0.0
Finance and Insurance	\$3.8	20%	-\$0.1
Property and Business Services	\$5.7	20%	-\$0.1
Government Administration and Defense	\$8.2	0%	\$0.0
Education	\$16.1	0%	\$0.0
Health and Community Services	\$19.6	0%	\$0.0
Cultural and Recreational Services	\$2.9	90%	-\$0.2
Personal and Other Services	\$3.8	20%	-\$0.1
Non-classifiable economic units	\$3.2	20%	\$0.0
Not stated	\$2.6	20%	\$0.0
Total	\$203.8		-\$7.4

Table 17: All Shires Estimated Short Term Effect on GShP

	GShP (\$million)	Effect (\$million)
Alpine LGA	\$1,066.6	-\$33.3
East Gippsland LGA	\$1,021.2	-\$27.9
Indigo LGA	\$514.7	-\$14.0
Towong LGA	\$203.8	-\$7.4
Total	\$2,806.3	-\$82.6

The data in Table 17 shows a total reduction in output across all four Shires of \$82.6 million during this four-week period. Although it is true that much of this loss may be made up in the subsequent months, for example, there would have been a lot of construction activity and tree harvesting that that would have simply been delayed; a sizable proportion of the loss would never be made up. Examples of lost income and output that is probably gone forever would include the lost revenue associated with tourists and the loss and damage to agriculture (grapes, timber, livestock, feed and crops).

6.2.2 The medium term effects of the bushfires

The medium term was defined as the period after the threat of the bushfires had passed (some time in February) to the present (the end of May). Therefore we have used 12 weeks to be the medium term time period when economic activity was being affected by the consequences of the fires. Again using the information gleaned from the various sources mentioned above, we have reduced the output levels of Agriculture and Forestry, Accommodation, Cafes and Restaurants and Cultural and Recreation Services by 25% over the 12 week medium term period. It is possible that some firms increased production after their short term slow down during the fires. However, it appears from our research that this was not substantial.

In summary, in the 12-week medium-term period we estimate that the effects of the bushfires on output levels were as follows:

- 25% reductions in output levels in Agriculture, Forestry and Fishing in all four Shires
- 25% reductions in output levels in Accommodation, Cafes and Restaurants in all four Shires, and
- 25% reductions in output levels in Cultural and Recreation Services in all four Shires.

6.2.3 The total effects of the bushfires

The next step was to add both the short term and medium term effects of the bushfires together to obtain the total effects.

Table 18: Alpine Estimated Total Effect on GShP

Industry	GShP (\$million)	Effect (\$million)
Agriculture, Forestry and Fishing	\$90.7	-\$11.5
Mining	\$4.2	-\$0.1
Manufacturing	\$117.7	-\$1.8
Electricity, Gas and Water Supply	\$16.7	\$0.0
Construction	\$56.0	-\$3.9
Wholesale Trade	\$38.7	-\$0.6
Retail Trade	\$115.5	-\$4.4
Accommodation, Cafes and Restaurants	\$129.6	-\$16.4
Transport and Storage	\$36.2	-\$0.6
Communication Services	\$15.3	-\$0.2
Finance and Insurance	\$36.4	-\$0.6
Property and Business Services	\$103.3	-\$1.6
Government Administration and Defense	\$48.7	\$0.0
Education	\$52.7	\$0.0
Health and Community Services	\$96.3	\$0.0
Cultural and Recreational Services	\$49.1	-\$6.2
Personal and Other Services	\$36.2	-\$0.6
Non-classifiable economic units	\$11.2	-\$0.2
Not stated	\$12.0	-\$0.2
Total	\$1,066.6	-\$48.8

Table 19: East Gippsland Estimated Total Effect on GShP

Industry	GShP (\$million)	Effect (\$million)
Agriculture, Forestry and Fishing	\$140.0	-\$16.7
Mining	\$9.3	-\$0.1
Manufacturing	\$92.1	-\$1.4
Electricity, Gas and Water Supply	\$8.0	\$0.0
Construction	\$64.4	-\$4.0
Wholesale Trade	\$41.1	-\$0.6
Retail Trade	\$159.1	-\$4.9
Accommodation, Cafes and Restaurants	\$72.7	-\$8.7
Transport and Storage	\$34.6	-\$0.5
Communication Services	\$12.3	-\$0.2
Finance and Insurance	\$21.4	-\$0.3
Property and Business Services	\$49.7	-\$0.8
Government Administration and Defense	\$38.7	\$0.0
Education	\$85.6	\$0.0
Health and Community Services	\$108.9	\$0.0
Cultural and Recreational Services	\$13.8	-\$1.6
Personal and Other Services	\$34.9	-\$0.5
Non-classifiable economic units	\$12.2	-\$0.2
Not stated	\$22.4	-\$0.3
Total	\$1,021.2	-\$40.9

Table 20: Indigo Estimated Total Effect on GShP

Industry	GShP (\$million)	Effect (\$million)
Agriculture, Forestry and Fishing	\$67.3	-\$8.5
Mining	\$1.1	\$0.0
Manufacturing	\$88.6	-\$1.4
Electricity, Gas and Water Supply	\$3.9	\$0.0
Construction	\$30.6	-\$2.1
Wholesale Trade	\$16.3	-\$0.3
Retail Trade	\$56.3	-\$2.2
Accommodation, Cafes and Restaurants	\$24.6	-\$3.1
Transport and Storage	\$13.9	-\$0.2
Communication Services	\$5.6	-\$0.1
Finance and Insurance	\$8.7	-\$0.1
Property and Business Services	\$27.4	-\$0.4
Government Administration and Defense	\$27.6	\$0.0
Education	\$41.8	\$0.0
Health and Community Services	\$66.2	\$0.0
Cultural and Recreational Services	\$5.6	-\$0.7
Personal and Other Services	\$13.4	-\$0.2
Non-classifiable economic units	\$5.2	-\$0.1
Not stated	\$10.5	-\$0.2
Total	\$514.7	-\$19.6

Table 21: Towong Estimated Total Effect on GShP

Industry	GShP (\$million)	Effect (\$million)
Agriculture, Forestry and Fishing	\$62.1	-\$7.9
Mining	\$0.0	\$0.0
Manufacturing	\$15.2	-\$0.2
Electricity, Gas and Water Supply	\$4.5	\$0.0
Construction	\$10.6	-\$0.7
Wholesale Trade	\$8.9	-\$0.1
Retail Trade	\$18.8	-\$0.7
Accommodation, Cafes and Restaurants	\$9.7	-\$1.2
Transport and Storage	\$6.0	-\$0.1
Communication Services	\$2.1	\$0.0
Finance and Insurance	\$3.8	-\$0.1
Property and Business Services	\$5.7	-\$0.1
Government Administration and Defense	\$8.2	\$0.0
Education	\$16.1	\$0.0
Health and Community Services	\$19.6	\$0.0
Cultural and Recreational Services	\$2.9	-\$0.4
Personal and Other Services	\$3.8	-\$0.1
Non-classifiable economic units	\$3.2	\$0.0
Not stated	\$2.6	\$0.0
Total	\$203.8	-\$11.7

Table 22: All Shires Estimated Total Effect on GShP

	GShP (\$million)	Effect (\$million)
Alpine LGA	\$1,066.6	-\$48.8
East Gippsland LGA	\$1,021.2	-\$40.9
Indigo LGA	\$514.7	-\$19.6
Towong LGA	\$203.8	-\$11.7
Total	\$2,806.3	-\$121.1

Table 22 tells us that our estimate of the total effect of the bushfires on the level of economic activity for the period when the threat arose (some time in January) until the present (the end of May), across the Shires of Alpine, East Gippsland, Indigo and Towong is lost production and income of \$121.1 million.

The key points about this lost output:

- This lost output would also have further spillover effects to other industries, both within the Shires examined in this study and in other industries right across Australia. An estimate of this additional spillover loss to other industries goes beyond the scope of the present study, as it would require more complicated economic modelling.
- The negative effects of the bushfires are likely to be felt for some time into the future. But as we have not developed a forecasting model we have not attempted to measure any effects that go beyond the present.
- This figure does not include any of the damage or loss to infrastructure, property and the natural environment. Fire damage to infrastructure is only relevant in so far as it affects GShP.

7 CONCLUSIONS

This study has highlighted significant social and economic costs resulting from the 2003 bushfires across the Gippsland and North East Regions. The study has also found that the bushfires are likely to have considerable direct and indirect effects on these regions for the long term. Overall, we estimate that the loss of income and production in the Shires of Alpine, East Gippsland, Indigo and Towong from the time of the fires to the present (May 2003) to be **\$121.1 million**.

The key points about this lost output are that:

- It would also have further spillover effects to other industries, both within the Shires examined in this study and in other industries right across Australia. An estimate of this additional spillover loss to other industries goes beyond the scope of the present study, as it would require more complicated economic modelling.
- The negative effects of the bushfires are likely to be felt for some time into the future. But as we have not developed a forecasting model we have not attempted to quantify any effects that go beyond the present.

This figure does not include any of the damage or loss to infrastructure, property and the natural environment. Fire damage to infrastructure is only relevant in so far as it affects GShP. Nor does our total economic effects figure include social costs (family breakdown, health impacts, social links and so on).

The main social effects of the fires included: psychosocial stress, disruption to families, adverse impacts on people's physical health and wellbeing and a fracturing of social linkages.

Families have suffered financially, as a result of job losses and damage to local businesses. While the regional economies are beginning to recover, there is an acknowledged need for ongoing financial and economic counselling.

The strong sense of voluntarism associated with the CFA, Red Cross and St John's Ambulance in rural communities has remained largely intact, notwithstanding local volunteers feeling that their efforts were sometimes over-riden and undervalued by officials from Melbourne.

Local governments have played an important role in making local residents aware of the sorts of government assistance available to them for recovery purposes. As well, they have provided important co-ordinating and support roles to local communities during and after the fires.

State government agencies as well as non-government organisations also received considerable praise for the many and varied ways they helped to manage and implement fire fighting and recovery efforts in local communities. Feedback also suggested, however, a number of improvements that could be made to future organisation and support activities.

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