

Forest Fire Victoria Inc.

Forest Fire Victoria is a group of forest and fire professionals who have more than 250 years of fire experience.

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THE COST OF VICTORIA'S CAMPAIGN FIRES AND THE ASSOCIATED LOSSES AND LESSONS

Our key message is a simple one – large “campaign fires” must be avoided by focusing on the rapid detection and suppression of fires while they are small.

Following the large fires across the nation in 2019/2020, the way the land is managed, the way fires are fought, and the way people are trained to fight them must be seriously re- evaluated or we will continue to have more of these large, uncontrollable fires in the future and the massive attendant costs – in dollar and human terms.

Victoria spent \$1.8 billion on its fire services last year¹⁵, hundreds of millions more than any other state or territory. Figures from the Productivity Commission cited by Towell, The Age, 29 January 2020, show the Victorian government spending about \$275 dollars for each resident in 2018-2019 on fire services, against a national average of \$196.

The costs of this year's fire fight, plus the annual costs of funding the fire services, will exceed this figure.

Because the costs of the 2019/2020 fires are not yet available, we will use a well-documented evaluation of the costs of the large alpine fires of 2003 as a case study to show how much large fires really cost.

The paper “*What is the True Cost of Forest Fire Management on Public Land in Victoria*” (Dexter/Macleod, 2017) compiled and analysed from publicly available data, estimated costs of the 2003 fires See Appendix 8. The paper concludes that a realistic estimate of cost of the 2003 Alpine firefight was approximately \$411.7 million (2019 dollars).

The larger the fire, the longer the suppression operation, the greater the cost and the likelihood that there will be injuries to fire agency personnel, contractors and community. Along with this is the huge environmental, economic and social cost to the community as estimated (Stephenson 2010) in Table 2 for three of the major Victorian fire events in 2003, 2006 and 2009.

A later report by Ryan and Runnels (2015) citing three of five fires studied by Stephenson (2010) also states... “*not all losses could be valued at the time of writing, and not all impacts included in the SEIA model were valued, including health impacts (other than fatalities and injuries) and the indirect disruption to businesses, transport networks, essential service provision, public services and households which will therefore push the net loss even higher. Although these values may seem excessive, they are comparable with several other studies from Australia, USA and New Zealand that consider the full range of economic, social and environmental impacts or parts thereof*”

Stephenson acknowledged the imperfections in the models used to derive the costs.

Consequently, the benefits can be inflated when in fact, the net losses are larger. He concluded in the Summary, “Until the economic losses associated with bushfires are known, policies and strategies incorporating bushfire information will not be fully informed. Many economists point out that the wording of questionnaires to gather \$ values can be designed to elicit a preordained outcome, reflecting inherent bias in the responder.

Table 2: Summary of the environmental, economic and social losses, benefits and net economic losses for the 2003 Alpine Fires, 2006 Great Divide Fires and 2009 Black Saturday fires. (Stephenson 2010¹⁶ cited by Ryan and Runnells in 2015¹⁷)

Asset Value -2008 AU\$ (2019AU\$) * * Source RBA inflation calculator	2003 Alpine Fires	2006–07 Great Divide Fires	2009 Black Saturday Fires
Total area (ha)	1,080,893	1,113,251	388,261
Economic losses	1,715,286,629 (2,144 M)	1,077,615,049 (1,347 M)	1,826,197,051 (2,283 M)
Residential buildings and contents	7,841,250 (10 M)	13,578,750 (17 M)	611,842,500 (765 M)
Commercial and industrial buildings and contents	2,613,750 (3 M)	0	37,223,605 (47 M)
Park buildings, contents and infrastructure	34,736,687 (43 M)	28,592,624 (36 M)	33,392,225 (42 M)
Public infrastructure	82,802,000 (104 M)	0	6,885,000 (9 M)
Agriculture	60,767,501 (76 M)	165,582,348 (207 M)	720,102,519 (900 M)
Timber	1,391,993,388 (1,740 M)	692,461,833 (866 M)	78,900,464 (99 M)
Emergency response operations	134,532,053 (168 M)	177,399,494 (222 M)	337,850,738 (422 M)
Social losses	3,652,000 (5 M)	3,652,000 (5 M)	701,857,540 (877 M)
Fatalities	3,652,000 (5 M)	3,652,000 (5 M)	631,796,000 (790 M)
Major injuries	0	0	56,077,970 (70 M)
Minor injuries	0	0	13,983,570 (17 M)
Environmental losses	1,094,975,092 (1,309 M)	1,095,619,252 (1,370 M)	359,139,365 (449 M)
Benefits	122,565,903 (153 M)	174,819,572 (219 M)	1,962,284,227 (2,453 M)
Payments by government	99,911,542 (125 M)	144,206,744 (180 M)	507,758,230 (635 M)
Donations	2,904,405 (4 M)	350,562 (0.438 M)	382,046,329 (478 M)
Insurance	19,749,956 (25 M)	30,262,266 (38 M)	1,072,479,668 (1,341 M)
Total losses	2,813,913,721 (3,517 M)	2,176,886,301 (2,721 M)	2,887,193,955 (3,609 M)
Total benefits	122,565,903 (153 M)	174,819,572 (219 M)	1,962,284,227 (2,453 M)
Net loss from bushfire	2,691,347,818 (3,364 M)	2,002,066,729 (2,503 M)	924,909,728 (1,156 M)

¹⁵ The Age, 29th January 2020

¹⁶ DELWP Report 88 – Stephenson 2010

¹⁷ Ryan and Runnalls 2015

¹⁸ Dexter and Macleod (2017) ibid

Whilst this table shows the great overall losses from large fires, the need to keep fires small is clearly shown in the following table (Table 3) adapted from Dexter and Macleod¹⁸

Table 3: Summary Comparison: 1985 and 2003 Direct Fire Suppression Costs (Au\$ in 2019)

Feature	January 1985	January 2003	Jan/Feb/Mar 2003
Duration (Days)	14	9	59
Area burnt (ha)	150,000	34,000	1,150,000
Peak personnel (No)	3120	1350	4280
Peak plant (No)	475	255	350
Peak aircraft (No)	36	31	34
Total personnel days (No)	21,700	9,530	133,100
Total plant days (No)	3,330	2,180	8,560
Total aircraft days (No)	392	165	847
Estimated suppression cost	\$20.54 M	\$23.5M	\$216.7M
Suppression costs/area burnt	\$137.1/ha	\$674/ha	\$188/ha

Adapted from Dexter and Macleod (April 2018). RBA Inflation Calculator for AU\$ 2019

This table relates to selected “larger” fires, with the myriad of very small fires (under 5 ha) not costed as there are far too many to consider. However, if the cost of many of these very small fires was tabulated, the unit area cost will almost certainly be very high, but the total expenditure is low.

Whereas Table 2 takes a more holistic view of the net costs of large fires, Table 3 concentrates on the direct costs of the firefight. Major fires generate large losses in many other areas of our society and the environment and to estimate these losses in the timeframe required for the 2019/20 fires is not possible. The factors to be considered in the future, and what the enquiry should examine in its deliberations are, but are not limited to:

- Loss of life
- Loss of assets e.g. houses, farm fences, timber plantations etc.
- Relocation and evacuation costs
- Damage to community assets e.g. roads, bridges, power distribution systems
- Water issues – yield and quality
- Lost production e.g. farms, businesses
- Loss of other business e.g. tourism,
- Recovery costs
- Rebuilding costs
- Insurance/fire levy costs

Whilst this information is not currently available to us, the Auditor General (or any of the enquiries following the fires) must follow this up with Government bodies to fully understand the very high cost of the large fires of 2019/2020.

The only major enquiry to have any lasting effect in the last 80 years or so was the Stretton Royal Commission following the disastrous 1939 fires. Systems and arrangements were set up which, to a large degree, worked well for decades. Major developments in knowledge, technology and social systems should have built on these arrangements to drastically improve the management of fire even further; the opposite seems to have happened if the results of fires in the last 20 years are objectively analysed.

The cost of fire prevention (including fuel reduction burning), readiness, training rapid and determined initial attack, are far exceeded by the enormous financial and social burden of large campaign fires, viz: suppression, disruption and recovery.

We are not suggesting 'back to the future', but the lessons learnt, must be incorporated to suit contemporary times; the latest knowledge and technology must be used effectively and efficiently to prevent major fire disasters in the future.

The four major areas for improvement are:

- 1. Fuel reduction programs must be expanded across all land tenures to manage fuel levels to the extent that fires never have long, unbroken runs in heavy fuel loads**
- 2. Rapid and determined initial attack, using all available resources, must be applied to EVERY outbreak of fire in order to contain it within the smallest area possible.**
- 3. Land management across all land tenures must be complementary to fire management. On-ground activity, such as track-building and maintenance for access, multiple use management, across all land tenures, to build knowledge and skills and constant "on the job" training are all essential. Locking up vast areas with "passive" management is a recipe for disaster (as evidenced nationally by the 2019/20 fires).**
- 4. Centralisation of emergency management in the early stages of fires is counterproductive, and strong local decision making and action should be an essential part of fire attack, backed up by larger organizational support when required.**

REFERENCES:

1. The Age 29th January 2020: Noel Towell, State Political Editor *Victoria spent \$1.8 billion on its dire services last year, hundreds of millions more than another State of Territory*
2. DELWP (July 2010): *The impacts, losses and benefits sustained from five severe bushfires in south- eastern Australia. Fire and adaptive management*. Report No. 88 ISBN 9781742870625 (online) - Catherine Stephenson: Research Officer, Centre for Risk and Community Safety. RMIT University and Bushfire Cooperative Research Centre
3. Michel Ryan and Ross Runnalls (May 2015): *Does timber harvesting in natural forests have any influence on fire management at the landscape level?* IFA conference session paper – Commercial timber management and what this means for fire outline.
4. Barrie Dexter and Donald Macleod (Apr 2018) Revisions 1: *What is the True Cost of Forest Fire Management on Public Land in Victoria. What actions are required to increase transparency and accountability in reporting these costs in the public interest?* [Includes Briefing Notes] ISBN: 978- 0-9942531-5-6 CD-ROM