

PAPER IN RESPONSE TO THE  
PRODUCTIVITY COMMISSION'S DRAFT REPORT JULY 2016  
REGARDING REGULATION OF AUSTRALIAN AGRICULTURE

13 September 2016

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## OUTLINE

The Productivity Commission has published a draft report dated July 2016 regarding regulation of Australian agriculture (“**draft report**”).

In this paper it is assumed that the laws referred to in the draft report are valid.

Vegetation and environment laws, and planning laws exist federally, in the states and territories, and local councils. The analysis of the laws in this paper focuses on Victoria. However from the content of the draft report, it appears similar laws apply across the nation.

This paper comprises of this outline, four parts and Appendix A. Where there is overlap between parts, the subject matter is cross-referenced.

Part One relates to the opportunity for regulatory reform in planning and environment laws regarding major fires, and which affect farmers, the environment, and the community at large. Part Two relates to other issues in planning and environment laws that impact on agriculture. Part Three relates to other issues in the draft report regarding Chapter 4 (water), Chapter 5 (animal welfare), Chapter 7 (biosecurity), Chapter 8 (transport) and Chapter 10 (labour regulation). Part Four relates to Chapter 14 (‘the way forward’) of the draft report. Appendix A is referred to in Part One, and Part Three.

**PART ONE**  
**OPPORTUNITY FOR REGULATORY REFORM REGARDING LEGISLATION**  
**THAT PREVENT EFFECTIVE PREPARATION FOR A MAJOR FIRE, IMPACTING**  
**FARMERS, THE ENVIRONMENT AND THE COMMUNITY**  
**AT LARGE - MAJOR FIRES AND CHAPTERS 2, 3, 4 AND 5 OF THE DRAFT REPORT**

1. Introduction to regulatory reform

There is an opportunity for regulatory reform regarding planning and environment laws, which are currently not fulfilling objectives to farmers, the environment, or the community generally, by failing to take into account the overall landscape.

The regulatory focus of vegetation retention rather than the overall landscape emphasises major fire suppression, survival and recovery, rather than prevention or minimisation.

However a major fire is the only event that causes catastrophic damage to the overall landscape. When a wildfire cannot be managed, no regulatory policy objective can be achieved over the short, medium and long term.

Humans, livestock and wildlife die. Habitats and biodiversity values are destroyed. Soil is sterilised, and water quality and water availability decline. It takes years before a farm can return to pre-major fire productivity levels, and about 100 years for stream flows, forest regeneration and habitats to return to their pre-major fire levels.

Consequently, by the regulatory focus of vegetation retention rather than the overall landscape, the planning and environment laws have adversely affected the very things these laws seek to protect, and therefore represent a net cost to farmers, the environment, and the community at large.

By preventing effective vegetation fuel management to reduce a major fire risk to at least moderate, and by preventing compliance with fire management guidelines, results in increasing the risk of major fires occurring and when they do occur, increasing their devastation.

The regulatory focus needs to change from vegetation retention to the overall landscape, so the emphasis is on preventing or reducing the impact of major fires, instead of suppression, survival and recovery.

By reducing the risk of a major fire starting or its spread and intensity (and therefore its impact) through preparatory effective fuel management, helps protect and enhance the environment and productivity of agriculture. The change in regulatory focus from vegetation retention to the overall landscape would require the co-operation of federal, state and territory governments, government authorities and local councils.

Examples of acknowledgements of the destruction of a major fire, and that preparatory effective fuel management reduces major fire risks, are as follows.

2. The definition of a major fire in Victoria

Relevantly, the Victorian legal definition of a major fire acknowledges that it is a “large or complex fire (however caused)”, which has the potential to cause or does cause:

- (a) “loss of life and extensive damage to property, infrastructure or the environment”, or

- (b) “significant adverse consequences for the Victorian community or a part of the Victorian community”; or
- (c) if not suppressed, will burn for more than one day; or
- (d) requires two or more fire services agencies to suppress the fire.

(Section 3 of the *Fire Services Commissioner Act 2010 (Vic)* and *Emergency Management Act 2013 (Vic)*.)

So the legal definition of a major fire in Victoria acknowledges that it can cause loss of life, extensive damage to the environment, or can cause significant adverse consequences to a part of the community (in this case, the agricultural sector).

### 3. The categories of fire incidents

Fire incidents are classified as a Level 1 incident, Level 2 incident or Level 3 incident:

“The Incident Controller of a bushfire emergency classify fire incidents as follows:

- Level 1 Incident - This is a small, simple fire (or group of fires) which is controlled with local resources. The incident may include other agencies. A second shift to manage the fire is unlikely to be required.
- Level 2 Incident - This is a developing, or developed fire of medium size or complexity. It is expected that the incident will be controlled within 24 hours. Resources from other locations are involved. The fire size is typically between 5 to 20 hectares (or much larger if there is little complexity).
- Level 3 Incident - This is a large or complex fire where resources from a range of locations are involved. In most circumstances a Level 3 fire will involve several agencies. The fire would normally be expected to exceed 24 hours.”

(It is noted that a Level 3 Incident would fulfil the definition of a “major fire” in the legislation, and depending on the circumstances, a Level 2 incident could also be a “major fire”.)

(Page 9, ‘Working with Fire Agencies at Bushfires Protocols for Volunteers involved in Wildlife Rescue Operations’, The State of Victoria, Department of Sustainability and Environment, 2010,

[http://delwp.vic.gov.au/\\_\\_data/assets/pdf\\_file/0016/322144/Wildlife\\_Rescue\\_Protocol\\_DSE\\_CFA\\_final\\_Nov2010\\_signed2.pdf](http://delwp.vic.gov.au/__data/assets/pdf_file/0016/322144/Wildlife_Rescue_Protocol_DSE_CFA_final_Nov2010_signed2.pdf).)

### 4. The Department’s fire suppression targets

Accordingly in the Department’s 2015 annual report, it reflects the targets of controlling bushfires and to seek to avoid a fire changing incident categories:

“Fires controlled at first attack to suppress fires before they become established, minimising impact.”

and

“Fires controlled at less than five hectares, to suppress fires before they become established, minimising impact.”

(See page 68 and page 69 of the 30 June 2015 annual report. The Department’s name (for year ending 30 June 2015) is the ‘Department of Environment, Land, Water and Planning’ [http://delwp.vic.gov.au/\\_\\_data/assets/pdf\\_file/0010/317287/DEL-8483-DELWP-Annual-Report-2014-15\\_FA11\\_FA\\_web.pdf](http://delwp.vic.gov.au/__data/assets/pdf_file/0010/317287/DEL-8483-DELWP-Annual-Report-2014-15_FA11_FA_web.pdf).)

## 5. The risk of a major fire occurring in Victoria

The current total (residual) fire risk has been identified over public and private land as 47% (Alpine and Greater Gippsland), 73% (South Western), 68% (West Central), 72% (East Central), 61% (Alpine and North East), 85% (Mallee and Murray Goulburn), and 65% (Barwon Otway).

(These are contained in the links in the webpage 'Safer Together', published by the Victorian Government.  
<http://www.delwp.vic.gov.au/safer-together> Scroll down to the tabs on left hand side for each region.)

Further, in planning schemes, Bushfire Management Overlays have been designated over private land, including broad hectare properties, which are considered to be of "high bushfire hazard".

(Planning Advisory Note 46, August 2013, 'Bushfire Management Overlay Mapping Methodology and Criteria', Victorian Government Department of Transport, Planning and Local Infrastructure, 2013,  
[http://www.dtpli.vic.gov.au/\\_\\_data/assets/pdf\\_file/0020/231509/AN46-BMO-mapping-methodology-and-criteria.pdf](http://www.dtpli.vic.gov.au/__data/assets/pdf_file/0020/231509/AN46-BMO-mapping-methodology-and-criteria.pdf).)

## 6. Vegetation increases the risk of a major fire occurring or its impact, which can be reduced by effective fuel management and preparedness

### 6.1. Practice Note

In planning, the Bushfire Management Overlay Practice Note states:

"Vegetation (fuel) – Plants are the primary source of fuel for a bushfire. The amount, type and arrangement of vegetation affects how quickly a bushfire will spread and its intensity."

(Planning Advisory Note 46, August 2013, 'Bushfire Management Overlay Mapping Methodology and Criteria', Victorian Government Department of Transport, Planning and Local Infrastructure, 2013,  
[http://www.dtpli.vic.gov.au/\\_\\_data/assets/pdf\\_file/0020/231509/AN46-BMO-mapping-methodology-and-criteria.pdf](http://www.dtpli.vic.gov.au/__data/assets/pdf_file/0020/231509/AN46-BMO-mapping-methodology-and-criteria.pdf).)

### 6.2. The Department's annual report

In the Department's 2015 annual report, it states:

"Reduced impact of major bushfires...This objective delivers a risk based approach to preparing for and responding to fire..."

(See page 68 of the 30 June 2015 annual report, cited above.)

### 6.3. The Code

The Victorian "Code of Practice for Bushfire Management on Public Land" ("**the Code**") states:

"This Code recognises the role of fuel management to reduce bushfire risk over broad areas."

and

"Risk-based planning...is a fundamental part of this Code"

(Victorian Government, Department of Sustainability and Environment, 2012,  
[http://www.delwp.vic.gov.au/\\_\\_data/assets/pdf\\_file/0007/318940/Code-of-Practice-for-Bushfire-Management-on-Public-Land.pdf](http://www.delwp.vic.gov.au/__data/assets/pdf_file/0007/318940/Code-of-Practice-for-Bushfire-Management-on-Public-Land.pdf))

#### 6.4. The plans

From the Code, strategic bushfire management plans for the seven regions in Victoria were developed (**“the plans”**), Victorian Government, 2015.

(For the four regions of South Western, Alpine and Greater Gippsland, Mallee and Murray Goulburn, and Alpine and North East, the 2015 plans are located on the left tab links on the web page <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire>. For the three regions of East Central, Barwon Otway and West Central, the 2015 updated versions can be found at [http://www.delwp.vic.gov.au/\\_\\_data/assets/pdf\\_file/0006/318849/DELWP0016F\\_BMP15\\_EastCentral\\_web\\_v2.pdf](http://www.delwp.vic.gov.au/__data/assets/pdf_file/0006/318849/DELWP0016F_BMP15_EastCentral_web_v2.pdf) [http://www.delwp.vic.gov.au/\\_\\_data/assets/pdf\\_file/0005/318848/DELWP0016D\\_BMP15\\_BarwonOtway\\_web\\_v2.pdf](http://www.delwp.vic.gov.au/__data/assets/pdf_file/0005/318848/DELWP0016D_BMP15_BarwonOtway_web_v2.pdf) [http://www.delwp.vic.gov.au/\\_\\_data/assets/pdf\\_file/0009/318852/DELWP0016F\\_BMP15\\_WestCentral\\_web\\_v2.pdf](http://www.delwp.vic.gov.au/__data/assets/pdf_file/0009/318852/DELWP0016F_BMP15_WestCentral_web_v2.pdf))

The plans contain similar content, adapted to the region in question.

As explained in the plans:

“Our capability to quickly suppress bushfires before they grow to a size and intensity that makes them difficult to control is a core part of our approach to reducing bushfire risk.”

(This is also consistent with the Department’s suppression targets, above, and to seek to avoid a fire changing incident categories.)

The benefit of effective fuel management and access in reducing the risk of a major fire are explained:

“We undertake fuel management activities where bushfires are likely to start and along the paths they are likely to travel, to reduce their rate of spread, intensity and long-distance spotting potential. We also manage fuels close to and adjacent to priority communities and infrastructure, high-value native forest timber and high-value ecosystem areas. This helps minimise flame contact, radiant heat, ember generation and short-distance spotting potential.”

and

“We must be adequately prepared for bushfires, to improve our response to them when they occur. Well-maintained roads and tracks are essential for quick response and for community and firefighter safety.”

The plans provide an analysis of fire modelling and quantifies by percentage the maximum reduction possible of average total fire risk of a major fire occurring or its impact in the landscape, leaving the residual risk, to 2050, if effective and maximum fuel management occurred on public land, on private land, or on both public and private land.

For private land, the plans show that for all of the regions, by effective fuel management on private land, the average total major fire risk on the landscape could be reduced by anywhere between 5% and 30%, depending on the region.

This demonstrates that private landholders, if given the opportunity, can meaningfully reduce the average total major fire risk in the landscape. A 5% to 30% reduction, depending on the region, could mean the difference between whether a major fire starts, or the ability to suppress the fire

quickly (by its reduced intensity and spread). However the legislation does not allow private landholders to undergo effective fuel management to reduce the risk of a major fire to at least moderate.

If the legislation permitted private landholders to effectively reduce the fire risk to at least moderate, it would also mean that properties would no longer be subject to a Bushfire Management Overlay, and would help to reduce the average total major fire risk over the landscape, thereby enhancing the protection of the environment and agriculture.

#### 6.5. The CFA Guidelines

Further, the Country Fire Authority ("**CFA**") in "On the Land Agricultural Fire Management Guidelines" in Victoria, 2011, ("**CFA Guidelines**") states:

"Running a farm is a business, but there are not many businesses that tie you so closely to your place of work. Farmers are at the mercy of the climate in good years and bad, but good planning and a common-sense approach can minimise risks – including that of fire."

and

"The fire season poses a significant threat to all those living, working or travelling in Victoria. Managing the risk of fire on all fronts is vitally important.

On the Land has been developed by CFA as a key resource and will be especially valuable for landholders in the process of property planning, or for those who are new to farming.

Land and fuel management is central to a bushfire survival plan, as is ensuring that machinery is safe and can be relied upon in times of need. As well as maintaining equipment, the protection of livestock and crops needs to be a priority for all farmers over summer.

Undertaking preparations or works around your property is just one part of becoming FireReady. CFA urges all farmers and landholders to have a written survival plan that takes into account family members and employees.

CFA recognises and appreciates all the support provided to us from the State Government when developing and updating this publication.

We encourage all those involved in planning or promoting fire management on agricultural land in Victoria to use On The Land as a day-to-day and year-round resource."

([http://www.cfa.vic.gov.au/fm\\_files/attachments/Publications/on-the-land.pdf](http://www.cfa.vic.gov.au/fm_files/attachments/Publications/on-the-land.pdf).)

Accordingly, the CFA recognises that the land is integral to farming, and fuel management is required to help protect its assets in the event of a bushfire. However the legislation does not allow private landholders to undergo effective fuel management to reduce major fire risk.

## 7. The nature of fuel management and preparedness for major fires

### 7.1. Steps

The Victorian government is undergoing fuel management on public land to reduce average total fire risk of a major fire to the landscape, and constructing and maintaining an access network for bushfire management. Examples of tools that are being used to reduce fuel load are planned burning and fuel breaks. Methods include ploughing, mulching, applying herbicide, chain rolling, grazing, mowing and slashing. (The Code and the plans, cited above.)

In one region, strategic fire breaks are being undertaken to divide the parks into management units, and in another region, permanent fuel breaks are also used for access. (One of the plans, and Safer Together website, cited above.)

Though planned burning may not be generally practical on private land (for example, because of assets on the property, and neighbouring properties). Examples of tools for private land holders to reduce fuel load are fuel breaks and vegetation thinning. Of course the farmers would need to be given the opportunity to effectively reduce the fire risk to at least moderate through legislation.

Assuming the full extent of fuel management is undertaken, there will always be an average total residual fire risk, which:

“represents risk which can’t be treated through fuel management, and highlights the importance of complementary bushfire prevention, preparedness, response and recovery actions.”

(The plans.)

Fuel breaks and access roads allows a more rapid response to a fire and safety access for firefighters. (The plans.)

In the CFA Guidelines (cited above), to be fire ready, the CFA’s recommendations include:

- (a) fuel breaks around the perimeter;
- (b) strategic fuel breaks on the property;
- (c) access tracks;
- (d) a large central laneway to assist moving stock before a fire threatens; and
- (e) where available, access to water for firefighting.

(Pages 6, 13, 14, 15 , 30 and 31 of the CFA Guidelines.)

The CFA states that planning permits are usually required (page 16 of the CFA Guidelines). (CFA also encourages considering burning as a tool, however as explained above, planned burning may not be generally be practical on private land.)

The CFA has recommended steps to be carried out (see (a)-(e) above) for a farm to be fire ready. However the reality is, effective implementation is not possible given the existing planning and environment laws. The legislation does not allow effective fuel management for a farm to be fire ready in the event of a major bushfire.

## 7.2. More detail on fuel breaks

A fuel break is defined in one of the plans as:

“A fuel break is a strip of land where DELWP removes or modifies the vegetation to reduce the risk of bushfires starting, and to reduce their rate of spread and intensity if they do. Fuel breaks also reduce the threat to nearby houses, provide safe routes for firefighters into fire suppression zones and for people leaving them, give firefighters options (such as making a

flank attack on a bushfire, or back burning) and provide safe and easy-to-manage control lines.”

Page 13 of the CFA Guidelines defines fuel breaks as:

“Fuel breaks are natural or constructed breaks in vegetation, used to stop or control the spread of fire. While fuel breaks are usually constructed by slashing, spraying or other means, natural features such as water bodies or green crops can also act as breaks.”

Prior to the Black Saturday bushfires, a property owner installed a 100 metre break on their property in Reedy Creek (in the article, it was called a fire break) and the owner was fined as a result. At the hearing the bushfire expert gave evidence that the clearing had reduced the fire risk from extreme to moderate. When the Black Saturday bushfires struck, their home was the only house left standing in a two kilometre area (‘Fined for illegal clearing, family now feel vindicated’, article in the Sydney Morning Herald of 12 February 2009, R. Baker and N McKenzie, <http://www.smh.com.au/national/fined-for-illegal-clearing-family-now-feel-vindicated-20090212-85bd.html>.)

Whilst approximately 10 kms further west from Reedy Creek, in the Black Saturday bushfires, the Kilmore East fire was the most damaging. The fire developed short range spotting that resulted in rates of fire spread varying between 68 m and 153 m per minute. (‘Anatomy of a catastrophic wildfire: The Black Saturday Kilmore East fire in Victoria, Australia’, abstract of article by A Sullivan (CSIRO), J Gould (CSIRO), N Sims (CSIRO), A Bannister (BoM), J Hollis (CSIRO), & R Hurley (CSIRO), *Forest Ecology and Management*, Volume 284, 15 November 2012, <http://www.sciencedirect.com/science/article/pii/S0378112712001223>.) Consequently, the epicentre would have required a fuel break that could have been at least 200 metres wide to avoid the short range spotting of up to 153 metres.

## 8. The planning scheme

### 8.1. The exemption

Under the planning schemes in Victoria, planning exemptions limit the extent of fuel breaks and access tracks that can be made without seeking a permit.

Clause 52.17-7 is a vegetation removal exemption from requiring a planning permit, and states:

“Fire protection

- For fire fighting measures, periodic fuel reduction burning, or the making of a fuel break or fire fighting access track up to 6 metres wide.”

(The environmental overlays have similar wording.)

Given the definition of a major fire, and the definition of the incident levels of fire categories, it is apparent that the exemption assumes the occurrence of only a Level 1 fire incident, and only to the extent where a 6 metre wide fuel break or access track would be sufficient to avoid or suppress the fire.

In the event of a major fire, a 6 metre fuel break or access track would be inadequate to protect lives, assets and livestock, as well as the environment and wildlife. This is demonstrated by the examples given above with respect to Black Saturday, where the epicentre had a short range spotting distance of 153 metres, and 10 kms away, the existence of a 100 metre fuel break saved a house.

This limited exception exists, despite the information available for areas of land that have been designated as ‘high hazard’ by a Bushfire Management Overlay, and despite the modelling results shown in the plans that landholders through effective fuel management have the potential opportunity (if it was given) to reduce the average total fire risk in the landscape in the event of a major fire.

## 8.2. The permit

Consequently, if a farmer wants to be “major fire” ready, to prepare the land to reduce the risk of a major fire occurring, or reduce the impact of a major fire on the land should it occur, planning permission is required.

If planning permission is refused, the extent of the fuel hazard, and therefore the heightened major fire risk, remains.

If permission is granted, offsets need to be given, usually requiring the planting of vegetation or retaining it elsewhere on the farmer’s property, thereby perpetuating the fire hazard.

(See for example ‘Native vegetation offsets’, State of Victoria, Department of Environment, Land, Water and Planning, 2015, <http://www.delwp.vic.gov.au/environment-and-wildlife/biodiversity/native-vegetation-offsets>.)

Under legislation, farmers should be given the freedom to reduce their land fire risk to at least moderate, and to implement the CFA Guidelines, to be fire ready, to reduce the risk of a major fire occurring on their land, or minimising the impact, rather than having to wait until the emergency arises and fight for survival for themselves, the animals, their business and the environment.

## 9. The nature of devastation caused by major fires

### 9.1. The annual report

The department’s annual report for year ending 30 June 2015 (cited above) states:

“The department’s strategic priorities are guided by six outcomes...Reduced impact of major bushfires...on people, property and the environment.”

(Page 10.)

### 9.2. The Code

The Code (cited above) states, regarding major fires:

“The impact of bushfires

23 Bushfires threaten many facets of our lives including: human life, community infrastructure (for example transmission of electricity), property, cultural heritage, industries, the environment and the quality and yield of water catchments. Local economies are also dependent on the bush for industries such as timber harvesting, tourism and apiary.

24 The natural forest carbon cycle is a balanced system over long periods of time, with fire releasing carbon into the atmosphere and forest regeneration and growth capturing carbon. High intensity bushfires can create an imbalance in this carbon cycle by releasing large volumes of carbon into the atmosphere and requiring a longer re-growth period to restore the carbon balance.”

(Page 4.)

and

“4 There are two primary objectives for bushfire management on public land:

- To minimise the impact of major<sup>1</sup> bushfires on human life, communities, essential and community infrastructure, industries, the economy and the environment. Human life will be afforded priority over all other considerations.”
- To maintain or improve the resilience of natural ecosystems and their ability to deliver services such as biodiversity, water, carbon storage and forest products.”

“1. The term “major” is used in the Fire Services Commissioner Act 2010. A small number of major bushfires have caused the greatest loss. Effort will be focused on reducing the impact of these events.”

(Page 1)

### 9.3. The plans

The plans (cited above) have been developed under the Code. The Code requires the preparation of strategic bushfire management plans that outline landscape and regional strategies for achieving the two objectives above regarding bushfire management on public land. (Page 10 of the Code.)

The plans describe the devastation to the environment and agriculture as a consequence of a major fire. In summary:

- (a) Water quality - ash and other debris can contaminate the water, including rivers, dams and reservoirs. Subsequent heavy rain creates a debris flow of thousands of tons of rock, logs and other debris into water catchments, including rivers, dams and reservoirs.
- (b) Water quantity - major fires reduce water yield into dams, reservoirs and rivers long-term. A major fire in the ash forests of Melbourne’s water catchments could reduce water yield for up to 150 years as the ash forests regenerate and grow again to maturity.
- (c) Bushfires threaten food security. Negative impacts on bees may affect food production, as about two-thirds of the food produced in Australia depends on pollination.
- (d) Bushfires can harm the timber, agriculture, apiary, horticulture and viticulture industries, kill and injure livestock, destroy crops, destroy topsoil, and destroy and damage buildings, fencing, machinery and equipment.
- (e) Bushfires can destroy softwood and native hardwood plantations and devastate the native forest timber industry. The loss can continue for decades as new trees need to grow to an age which is harvestable.
- (f) Ecosystem resilience across the landscape is measured by tolerable fire intervals (“**TFIs**”). TFIs are the minimum and maximum recommended times between fire events for vegetation with common fire behaviour and common ecological requirements for fire. Burning repeatedly outside these intervals increases the risk that there will be fundamental changes in the composition and abundance of species and type of vegetation. It may also increase the risk of weed invasion, erosion and loss of soil nutrients.
- (g) Major fire is devastating for biodiversity. Intense bushfire can effect fire-sensitive vegetation severely and ecologically long-term. Plant and animal habitats are destroyed, and availability of food is reduced. Many species of animals rely on middle-aged or older fire-sensitive vegetation for food and breeding. A major fire can alter the composition and structure of vegetation, and results in a massive shift from older to younger native

vegetation, reducing its growth stage and habitat diversity. Also, a major fire causes fragmentation and makes the land susceptible to invasion by exotic species.

- (h) The plans then specify examples of threatened animals and plants under state and federal laws within each region, which are fire-sensitive and are adversely impacted by a major fire.

#### 9.4. Examples of destruction in recent major fires in Victoria

Some of the devastation of major fires in Victoria is set out in Appendix A, comprising of seven major fires over a period of thirteen years, between 2002 and 2014. These are the February 2014 grass and scrub fire, the January 2014 bushfires, the 2009 Black Saturday bushfires, the 2006/07 bushfires, the 2005/06 bushfires, the 2003 bushfires and the 2002 bushfires.

This information shows that in these major fires in Victoria, that:

- (a) A total of 3,595,739 hectares were burnt.
- (b) In three major fires, 178 people died.
- (c) In six major fires, at least 107,806 livestock died, comprising of sheep, cattle, horses and goats.
- (d) From three of the major fires alone, about 4,831 beehives perished.
- (e) From one major fire alone, 220 tonnes of trout from trout farms perished.
- (f) From one major fire alone, it was estimated that millions of wildlife died.
- (g) Pasture was destroyed. (Pasture feeds livestock.) In three of the major fires alone, it was estimated that at least 132,914 hectares of pasture was burnt.
- (h) Supplementary feed for livestock of hay, silage and grain were destroyed. In five of the major fires, 221,677 tonnes of supplementary feed was destroyed. In a sixth major fire, around 167,800 square bales of fodder was burnt.
- (i) Crops were destroyed. In three of the major fires alone, 2,819 hectares of crops were burnt.
- (j) Harvestable forest and plantations were burnt. In two major fires alone, about 58,400 hectares of forest and plantations perished.
- (k) In six major fires, 4,505 farm buildings were destroyed, including wool sheds, hay sheds, machinery sheds and dairies.
- (l) From six major fires alone, more than 19,000 kilometres of fencing were destroyed, including boundary fencing and internal fencing.
- (m) Biodiversity and habitat for flora and fauna, including threatened species, were adversely affected.
- (n) Pest animals and weeds increased their impact.
- (o) Water quality is effected in the short to medium term, as debris (including carcasses) and ash go into the water catchments such as rivers. The reduced water quality can kill fish in the rivers. The water is used for activities such as for drinking, irrigation, and livestock.
- (p) Water yield in the catchments affected by a major fire is effected long term. For example, "If, however, trees have been killed, the forest must regenerate from seed. Regrowing forests use substantially more water than mature forests, so yields can decrease substantially as the trees grow. That means less water for activities such as irrigation and decreased environmental flows."
- (q) "In the longer-term, business capacity to achieve and contribute to economic recovery is intrinsically linked to repairs to damaged infrastructure, agricultural recovery, environmental recovery and ultimately the return of tourists."

## 9.5. Summary of some other information of major fire impacts on the environment

### 9.5.1. Major fire emissions

Growing vegetation assimilates carbon dioxide, which plateaus on maturity, but the vegetation continues to store the carbon dioxide assimilated.

When vegetation is removed, the carbon dioxide continues to be stored, and on manufacture, most of the carbon dioxide remains.

However when there is a major fire, the vegetation is burnt and carbon dioxide is released. (Please also refer to paragraph 9.2 above.) In work for the Bushfire Co-operative Research Centre, Professor Mark Adams explains that bushfires cause the release of a massive amount of carbon dioxide, more than can be sequestered from planting trees or promoting carbon dioxide capture. It is estimated that in the Victorian 2003 and 2006-07 bushfires alone, 70-105 million tonnes of carbon dioxide was released into the atmosphere.

Bushfire also emits smoke. Dr Martine Dennekamp explains that bushfire smoke contains small particles and gases, which may also include carbon monoxide and nitrogen oxides. Bushfire smoke causes air pollution which can cover large areas, including major cities, and particularly affects people with lung disease.

(See pages 1, 2, 3 and Figure 3 on page 64 of 'Principles and Processes of Carbon Sequestration by Trees', by G. L. Unwin and P. E. Kriedemann, Research and Development Division State Forests of New South Wales, 2000, [http://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0006/389859/Principles-and-Processes-of-Carbon-Sequestration-by-Trees.pdf](http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/389859/Principles-and-Processes-of-Carbon-Sequestration-by-Trees.pdf) and Page 3 of 'How is carbon stored in trees and wood products?', Forest learning, Forest and Wood Products Australia, <http://forestlearning.edu.au/images/resources/How%20carbon%20is%20stored%20in%20trees%20and%20wood%20products.pdf>,

&

'Bushfires release huge carbon load', 13 February 2009, article in The Australian, A Wahlquist Rural Writer, <http://www.theaustralian.com.au/archive/news/bushfires-release-huge-carbon-load/story-e6fmg6of-1111118837677>,

&

'Bushfire smoke: health risks travel further than the flames', article from the ABC, by Claudine Ryan, interviewing Dr Dennekamp from the Department of Epidemiology and Preventive Medicine at Monash University <http://www.abc.net.au/health/thepulse/stories/2013/10/21/3873524.htm>.)

### 9.5.2. Major fire and soil impacts

The following are adverse impacts on soil as a result of a major fire:

- (a) " "Very hot" burn - the soil is virtually sterilised. All plant material and seed is destroyed as the fire burns into the top organic matter layer of the soil."
- (b) A " "Very hot" burns occur...where an intense fire emerges from bush areas onto pasture land."

('Pasture recovery after fire', note number AG0203, March 1995, Graeme Ward, Victorian Government, <http://agriculture.vic.gov.au/agriculture/dairy/pastures-management/pasture-health/pasture-recovery-after-fire>)

- (c) After a major fire, the soil repels water.

(Page 16, '2009 Bushfire Recovery Program Public Land 2012 Update', Victorian Government Department of Sustainability and Environment, [http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0008/192941/2009-Bushfire-Recovery-Program-public-land-2012-update.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0008/192941/2009-Bushfire-Recovery-Program-public-land-2012-update.pdf))

- (d) "Bushfire not only burns the vegetation above ground, but also organic matter in the soil."

“Nearly all organic carbon and nitrogen on the surface and top few centimetres of the soil is lost during bushfires. Since most soil organisms live in these layers, many are killed during the fire.”

“Natural ecosystems rely on soil processes where leaves and other organic material are broken down by organisms such as beetles, ants, earthworms, bacteria and fungi, releasing nutrients into the soil to be taken up again by plants. Fire interrupts this cycle.”

(Professor Petra Marschner, Media release, ‘Fire damage to soils sets back bushfire recovery’, 25 August 2015, Adelaide University, <https://blogs.adelaide.edu.au/environment/2015/08/26/media-release-fire-damage-to-soils-sets-back-bushfire-recovery/>)

- (e) Loss of productivity of pasture land to carry livestock can be measured by the potential carrying capacity of a farm pre and post a major fire, expressed in mega-joules/day (called a ‘DSE unit’)

(More information on a DSE unit can be found at <http://agriculture.vic.gov.au/agriculture/farm-management/business-management/ems-in-victorian-agriculture/environmental-monitoring-tools/sustainable-carrying-capacity>.)

For example, in South Australia, the Barossa Improved Grazing Group spent two years investigating the recovery of pastures after 2014 bushfires in South Australia. It was found that: “it will take years for our pastures to return to their pre-fire productivity.”

(Project Manager Georgie Keynes, in the article ‘Barossa farmers look to pasture recovery after bushfire’, 29 March 2016, in the Stock Journal, <http://www.stockjournal.com.au/story/3816714/eden-valley-shares-bushfire-lessons>.)

(Accordingly this suggests the same soil recovery time would also apply for land to grow crops to its pre-major fire level.)

### 9.5.3. Major fire and water quality

A major fire impacts water quality in catchments, including rivers, dams and reservoirs. (See paragraphs 9.2, 9.3(a), and 9.4(o) above.)

Some other information is as follows.

- (a) Depending on the severity of the fire, freshwater catchments usually regenerate to pre-fire water quality conditions within 5 to 20 years.

(‘Bushfire and water quality’, Department of Sustainability, Environment, Water, Population and Communities, Australian Government, November 2012, <https://www.environment.gov.au/system/files/resources/f7996291-b9a7-47a4-82e8-552af3c8618f/files/bushfires-and-water-quality-fs.pdf>.)

- (b) After the 2003 bushfires in Victoria, an intense storm washed debris into the Buckland River which travelled down to Ovens River, and the slug caused a “major fish kill”, affected other aquatic life and had a major impact on aquatic macroinvertebrates such as insects, snails and worms. The dissolved oxygen concentrations dropped to a level that can lead to deaths. Suspended matter can affect aquatic ecosystems, including by clogging fish gills and by the scouring and abrasion of aquatic life and habitat. The water quality had a significant impact for town supplies, livestock and irrigation.

(‘The Impacts of Bushfires following a flash flood event in the catchment of Ovens River’, November 2013, <http://www.epa.vic.gov.au/our-work/publications/publication/2003/november/ovens-catchment-report>.)

#### 9.5.4. Water yield in catchments

As above, a major fire impacts water yield in catchments, including rivers, dams and reservoirs. (See paragraphs 9.2, 9.3(b), and 9.4(p) above.)

Some other information is as follows.

The adverse impacts on streamflows in catchments affected by the Victorian major fires of 2003 and 2006/07 were modelled in a study by Sinclair Knight Merz, in its report “Combined impact of the 2003 and 2006/07 bushfires on streamflow” dated July 2009 (“SKM Report”). A summary is as follows.

The extent of a fire’s impact on streamflow in a catchment depends on the distribution of species types, age of the forest before the fire, the fire severity, and mean annual rainfall.

For the 2003 and 2006/07 bushfires, Sinclair Knight Merz modelled “changes in streamflow at the catchment scale through the use of streamflow response curves, which simulate the changes in water use with forest age.”

For approximately 5-10 years after the fire, streamflow into catchments increase. This is because run-off increases as forest has been destroyed so there is a reduction in canopy interception and forest water use.

Then as forest start to re-grow, it will consume “considerably more water” than previously mature forest. Accordingly streamflows decline, reaching a minimum around 20 to 30 years later, then streamflows “slowly increase” as the forest matures. It takes about 100 years for the post-fire streamflow to return to the pre-fire streamflow scenario.

(See pages 1, 2, 4, 5, 6, 7, 80 and 98, 112 and 113 of ‘Combined impact of the 2003 and 2006/07 bushfires on streamflow broadscale assessment’, July 2009, Sinclair Knight Merz. More generally, see in particular Executive Summary, Introduction (Chapter 1), Chapters 2, 7, and 8, and Conclusions (Chapter 9) commissioned by the Victorian Department of Sustainability and Environment, [http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0011/188885/SKM2009-Bushfires\\_Finalweb.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0011/188885/SKM2009-Bushfires_Finalweb.pdf).)

Consequently, in:

“...the medium to longer term, significant reductions in streamflow are predicted for most catchments, with implication for water availability for environmental flows and downstream users.”

(Page 2.)

Further, the 2003 and 2006/07 bushfires caused:

“...large landscape changes...”

(Page 1.)

The SKM Report shows that a major fire that affects a catchment, will affect the catchment’s water flows long-term, which impact on river health and water availability for drinking, irrigation and livestock. Therefore when a major fire occurs, the productivity of the environment and agriculture are adversely affected long-term.

## 10. Conclusion

The regulatory focus of planning and environment laws is vegetation retention, rather than the overall landscape.

Focusing on vegetation retention emphasises major fire suppression, survival and recovery. However a major fire is devastating to the landscape, and therefore the environment and livelihoods over the short, medium and long term.

Major fires cause significant economic and environmental impacts that stops or significantly reduces productivity across large areas and long-term. Major fires kill people, livestock, beehives and wildlife. They burn to death, suffocate to death, or are injured and later die. This is demonstrated by the seven major fires in Victoria from 2002 to 2014. 178 people died in three of the major fires. In six major fires, at least 107,806 livestock died. In three of the major fires alone, approximately 4,831 beehives perished. (About two-thirds of the food produced in Australia relies on pollination.) In one major fire alone, 220 tonnes of trout from trout farms perished. In one major fire alone it was estimated that millions of wildlife died.

Infrastructure, vegetation, pasture, crops, and forestry and plantation timber are destroyed. The wildlife that survive are at increased risk of predation. Fauna and flora habitats are destroyed, affecting shelter, feeding and breeding sites, including for endangered species. Major fires have significant long-term impacts on biodiversity values in the landscape. A major fire releases a number of emissions into the atmosphere.

After a major fire there is an incursion of predators and weeds.

A major fire sterilises soil, taking years to recover.

Through run-off, water quality declines as sediment and other debris and nutrients increase. It take 5 to 20 years for the water quality to recover to the pre-fire standard. Water quality affects stream ecosystems and users who rely on the water to drink, irrigate and water livestock.

Major fire in catchments causes water yield to drop long term. Starting from approximately 5 to 10 years after a major fire, new and growing vegetation consume greater quantities of water than mature forest, reducing water yield in affected catchments for about 100 years. Therefore a major fire reduces water availability long term in the catchment for humans, irrigation and livestock.

If the farmer has survived the major fire, there is a loss of income and long term consequences in rebuilding, given the devastation caused to the environment. Agriculture businesses require rebuilding, including soil rehabilitation to grow pasture and crops, rebuild livestock numbers, erect fencing, and erect farm buildings.

Major fires are the significant threatening process to humans, the economy, wildlife and the environment generally.

The regulatory focus of planning and environment laws is on vegetation retention. The regulatory focus of planning and environment laws should be on the overall landscape.

By focusing on the overall landscape, the focus would emphasise the ability to take preparatory effective fuel management to prevent or prepare for a major fire to reduce its spread and intensity across the landscape and therefore its impact.

The Victorian Government has recognised the devastation that a major fire causes to the environment, humans, infrastructure, industry and the economy. For example, as shown by the

legal definition of “major fire”, the Department’s 2015 annual report, the Code’s objectives, the plans, which were developed to achieve the Code’s objectives, and the government’s reports on major fires. Further, in the event of a fire, the 2015 annual report shows that the Victorian Government’s aim is to suppress the fire quickly (at first attack), and particularly before it reaches five hectares.

The Victorian government recognises the high hazard of excessive fuel loads by the application of the Bushfire Management Overlays on private properties, as well as the plans. The plans show that effective fuel management by landholders can reduce the average total fire risk across the landscape from 5% to 30% depending on the region, which could make the difference needed in a major fire to prevent or reduce the extent of destruction and save farms and the environment.

Farmers should be given the opportunity to reduce the risk to at least moderate of a major fire occurring on their land, or minimising its spread and intensity and impact on themselves, their property, their crops and livestock, and the environment. In addition, farmers should be given the opportunity to effectively implement CFA’s recommendations in the CFA Guidelines regarding stock tracks and access roads, and fuel breaks around the perimeter and inside the property in the case of a major fire. The regulatory emphasis should be on preparation to either prevent or reduce the impact of a major fire, instead of only being allowed to act in an emergency when the proverbial horse has already bolted and acting on major fire suppression, survival and recovery.

Planning laws in Victoria prevent the removal of native vegetation unless an exemption applies. The exemption regarding limited preparation for a fire (e.g. fuel breaks of 6 metres in width) may only help in small level 1 category fire, but would not help in a major fire. This is demonstrated by the definition of a major fire, the devastation it causes, but also that in the epicentre of a major fire the short range spotting distance was 153 metres, and 10 kms away a 100 metre wide fuel break saved the house.

Though the Victorian Government has recognised that private landholders can meaningfully reduce the average total major fire risk in the landscape across Victoria, the planning and environment laws do not allow it. Rather, permission has to be sought to undergo effective fuel management to reduce the risk or impact of a major fire. If permission is refused, the extent of the fuel hazard, and therefore the heightened major fire risk, remains. If permission is granted, offsets need to be given, usually requiring the planting of vegetation or retaining it elsewhere on the farmer’s property, thereby perpetuating the fire hazard.

In other words, a perverse situation has been created by a regulatory focus of vegetation retention rather than the overall landscape. Such regulatory focus increases the risk of a major fire occurring and its impact, causing catastrophic damage to the environment and agriculture across the landscape. Consequently the effect of the regulatory focus is that the laws maximise the number of animals perishing rather than surviving, and maximises the destruction to the environment, and therefore the agriculture industry, rather than to protect and minimise damage to the landscape so that the landscape is sustainable and productive in the short, medium and long term.

## PART TWO

### OTHER ISSUES IN PLANNING AND ENVIRONMENT LAWS THAT IMPACT ON AGRICULTURE

(Please note that where reference has been made to planning schemes, where any other law (either local or federal) overlap, then the same comment would also apply to those other laws.)

#### 11. Major fires, stream flow and flood overlays in planning schemes

A water authority estimates the flood level. The flood level is the extent to which areas of land would flood in the catchment region, should (on average) a 1 in 100 year flood event occur of mainstream flooding.

Mainstream flooding means:

“Heavy rainfall produces surface run-off which flows into streams and rivers. When there is a large amount of run-off, water overflows the river banks on to adjacent low-lying land causing flooding.”

(Practice Note, cited below.)

The flood level’s elevation is measured by the Australian Height Datum (“**AHD**”). The areas of land within the catchment which are estimated to be affected and fall within the flood level elevation are identified.

For example, if the estimated flood level of a locality in a 1 in 100 year mainstream flooding event is 2 metres AHD, then land estimated to be below 2 metres AHD in that locality will be affected.

A water authority declares the flood level under s 203 *Water Act 1989 (Vic)*. Section 204 states that in making a declaration, the water authority may adopt a flood level that in its opinion is the best estimate based on the available evidence. Through a planning scheme amendment, maps are introduced identifying the areas of land subject to flood overlays in the planning scheme (in clauses 44.03 and 44.04).

(Please refer to sections 203 and 204(1) *Water Act 1989 (Vic)*, and the second column on page 2 and page 3, and the first column on page 6 of ‘Applying the Flood Provisions in Planning Schemes A Guide for Councils’, Practice Note 12, June 2015, the State Government of Victoria Department of Environment, Land, Water and Planning, [http://www.dtpli.vic.gov.au/\\_\\_data/assets/pdf\\_file/0019/258400/PPN12-Applying-the-Flood-Provisions-in-Planning-Schemes\\_June-2015.pdf](http://www.dtpli.vic.gov.au/__data/assets/pdf_file/0019/258400/PPN12-Applying-the-Flood-Provisions-in-Planning-Schemes_June-2015.pdf).)

The flood overlays that can be imposed on rural land in Victoria are a Floodway Overlay (“**FO**”) and a Land Subject to Inundation Overlay (“**LSIO**”). Both overlays can be applied to a single property simultaneously.

For example, if it is estimated that in a 1 in 100 year mainstream flooding event, the flood level in a locality is estimated to rise to 2 metres AHD, then land in that locality which is estimated to have an elevation below 2 m AHD would be captured within an overlay. If it is decided that land between 1.5 m AHD and 2 m AHD will be subject to a LSIO, and land below 1.5 m AHD will be subject to a FO, then areas within the property which are estimated to fall within those respective elevation ranges will be subject to a LSIO or FO as applicable.

Agricultural land located in rural floodplains means portions or significant portions of the land can be subject to these flood overlays.

In Victoria's planning scheme, the effect of the flood overlay clauses (44.03 and 44.04) is that a permit is required to perform most works over areas of land affected. Permission can be denied or controlled, which stops or restricts the productive use of agricultural land.

However a flood level becomes out-of-date as a result of a major fire. Section 204 (and 203) is concerned with the best estimate based on the available information prior to the declaration being made. However a major fire that occurs will reduce the impact of run-off from a mainstream flood event for about 100 years.

Due to the major fires in Victoria (recently 2002, 2003, 2005/06, 2006/07, 2009, January 2014 and February 2014), each of these major fires would reduce streamflows of affected catchments long term. This is shown by the SKM Report in paragraph 9.5.4 of Part One above, which studied the 2003 and 2006/07 major fires in Victoria. The SKM Report demonstrates that approximately 5 to 10 years after a major fire, as the forest starts to re-grow, it will consume "considerably more water" than previously mature forest. Consequently streamflows in the water catchments decline for about 100 years.

Reduced streamflow for around 100 years means that the water catchment levels will be lower for that period. Lower water levels mean that water bodies such as rivers will have greater capacity to capture and hold mainstream flood waters; thereby reducing the extent of overflow run-off onto the floodplain, and so reducing the flood level on the floodplain long-term.

However an estimated flood level is based on catchment behaviour that precedes the occurrence of a major fire, and which will not return to the pre-fire scenario until about 100 years. Hence farmers are being subject to overregulation during their life time by flood overlays that have become out-of-date.

Flood levels should not be permitted to be relied upon when they are based on information that becomes out-of-date by a major fire. Consequently section 203 should state that a flood level declared expires within 6 months of a major fire that affects the catchment region, where the information that the declaration was based did not take into account the major fire. This is to ensure that the relevant water authority updates the flood level to reflect the changed long-term catchment conditions. (With a similar provision in clauses 44.03 and 44.04 of the planning scheme. That is, a planning scheme map of a flood overlay expires within 6 months of a major fire that affects the catchment region, where the information that the declaration was based did not take into account the major fire. This is to further ensure that the maps will also be updated.)

## 12. Flood overlays in planning schemes generally

In Victoria, land can be subject to a flood overlay in the planning scheme, which has the effect of requiring a permit under that overlay. The overlay can be applied to deny or restrict the productive use of agricultural land.

For example, relying on the provisions of a flood overlay to deny a farmer making a crossing over a dip in the land that becomes soggy in winter, preventing livestock from being able to safely cross the dip and access other parts of land. Thus a farmer is denied the property's productive use.

There can also be similar restrictions in a zone requirement.

As the focus of a flood overlay is potential inundation in a one hundred year flood, and its effect, there should be an exemption that provides that the works can be undertaken within a flood overlay (or in a zone as applicable) in accordance with a design that takes into account the flood level designated.

### 13. Planning schemes and dwellings

In the Victorian planning schemes, farming land can be located where the zone prohibits more than one dwelling on the land, or prohibits more than one dwelling unless the distance between the dwellings is at least, for example, 25 hectares or 40 hectares. This even includes when providing temporary accommodation.

The effect of these laws is that it can make it difficult to hire workers, either on a permanent or temporary basis.

Farms contain hectares and hectares of land. To attract workers, accommodation needs to be provided. Providing on-site accommodation would also allow the worker to go home to rest in-between jobs, or to be able to be called upon to assist when livestock need particular attention.

It is also preferable for dwellings not to be so far away from each other. Often infrastructure is located in certain locations, (e.g. the dairy facility), where the worker should be able to easily attend.

Planning schemes should have an exemption that land to be farmed or existing farms do not require a planning permit to use land for dwellings or to construct dwellings, and without any distance requirements. The dwellings would then simply be subject to building permit requirements.

### 14. Planning schemes and right to farm (regarding Chapter 2 of the draft report)

In planning schemes, farming should be as of right. It is in the national public interest to be able to feed its growing population and contribute to feeding the growing world.

In Victoria, there are broad landscape rural hectares which require the seeking of a permit to use land for agriculture, which can be refused. However at the same time, the planning scheme prohibits the land from being subdivided. The land may be, for example, 80 or 100 hectares in size.

Agriculture use and works under any planning scheme should not require a permit in this situation. Alternatively, as of right farming under any zone should be allowed if the property is a minimum hectare area.

### 15. Planning schemes, use and works

To be able to use the land for farming, requires carrying out activities on the land. For example, preparing the land for cultivation or pastures such as removing vegetation, removing weeds, ploughing the land and erecting structures. (These are called 'works'.) However whether or not a planning scheme requires a permit for agricultural use, planning schemes in Victoria distinguish between use and works, and generally a permit is required for works (and also can be further affected if an overlay applies). However the distinction between use and works is artificial. Works

are undertaken to carry out the use. Farming can only be carried out if activities are undertaken on the land. For farming, activities on the land should not require the seeking of a planning permit.

If a permit is refused, the works cannot be carried out, stopping or reducing farm productivity. Councils can stop or reduce the productivity of farms by refusing a permit or granting a permit with onerous conditions. Planning schemes should not require the seeking of a permit to undertake farming activities on rural properties, or alternatively, if the property is a minimum hectare area.

## 16. Planning schemes and planning conditions

### 16.1. Livestock

Where a permit is granted, a condition may be included which has the effect of limiting the hours in the day within which a truck can deliver or pick up livestock. However restricting the time of day means that weather cannot be considered, nor traffic volumes, which can increase the number of stop starts on the road and increase travel times when it is busy. These are some factors that would otherwise be part of the consideration of factors in the transport of livestock. Therefore to promote the interests of animal welfare, planning permits should not have such restrictions for farm animals.

### 16.2. Farming structures

Where a permit is granted, it may contain a condition of limiting the use of a farming structure within certain hours of the day. Farms are large properties, and restricting hours of operation stops or reduces productivity and should not be included for farms, or alternatively should not be included if the property is a minimum hectare area.

## 17. Planning schemes and native weeds

### 17.1. Planning schemes, native weeds and the weeds triage manual

Generally, in Victoria a weed that is native can only be removed without a permit (and therefore without offsets) if it has been declared noxious by the State under the *Catchment and Land Protection Act 1994 (Vic)*. Also if a planning scheme environmental overlay applies, only noxious weeds can be removed without a permit (for example, clause 42.01-3).

Alternatively, where the land is not subject to an applicable environmental overlay, a permit is not required to remove a native weed, where the weed is listed as exempted in the applicable Victorian planning scheme. However for the exemption to apply, the local council needs to initiate the listing of a weed in the exemption schedule to clause 52.17. (Victoria's planning schemes can be found at <http://planning-schemes.delwp.vic.gov.au/schemes>.) More often than not, councils have not initiated any weeds to be specified in the schedule to clause 52.17, as it would require resources to create the list and then maintain it, and weeds are generally not their field of expertise.

However for local councils who have identified native weeds, it means that in one part of the State the plant is a weed that does not require a planning permit to remove, and in another part of the State, it does require a permit. Of course, native weeds do not respect local council boundaries, or State boundaries.

For example, the Victorian Government has published 'Post-fire Weeds Triage Manual' ("**Weeds Triage Manual**"), as part of the Statewide Bushfire Recovery Plan following Black Saturday.

(*'Post-fire weeds triage manual Black Saturday Victoria 2009 – nature values fire recovery program'* by Heidi Zimmer, David Cheal and Erika Cross, Victorian Government Department of Sustainability and Environment, February 2012, [http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0019/203932/VBRRR-report-23-web.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0019/203932/VBRRR-report-23-web.pdf).)

The Weeds Triage Manual states:

*"The Post-fire Weeds Triage Manual collates information on weed responses to fire and fire operations, both from the published literature and previously unpublished local knowledge. The primary aim of the manual is to assist in prioritisation of weed species for funding/management after fire."*

Appendix 3 lists the weeds, and have been classified as:

*"(1) control difficult without hand/mechanical removal, (2) possibly native (some authors have considered as indigenous); Native and Introduced (5) native to Victoria and adventive outside native range, (6) native to Victoria and adventive inside native range (7) possibly native, possibly not throughout Victorian range."*

Appendix 3 is 44 pages length. Most of the plants listed are not specified as being declared noxious.

Accordingly, the Weeds Triage Manual demonstrates that there are many weeds that are either non-native or native and which are not declared noxious. The Weeds Triage Manual shows that whether a native plant is a weed, is not determined by whether the native plant has been identified as such in a schedule to a local council's planning scheme.

However weeds that are native would ordinarily require the seeking of a planning permit to remove, and if granted, to then provide offsets. This creates absurd outcomes. The planning schemes seek to protect the environment. However weeds damage the environment and productivity to the land (explained below), yet would require permission to remove. Farmers should have the freedom to protect the land and also the environment.

## 17.2. The damage weeds cause to the environment and productivity of land

The Australian Government has produced some fact sheets on weeds. These are 'Weeds in Australia', 'About Weeds', 'Why are weeds a problem?', and 'Impact of weeds'. ('Weeds in Australia' is on the home page. <http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/index.html>. 'About Weeds' is on the link on the left hand side. When 'About Weeds' is selected, sub-links appear on the left hand side, which is where the link of 'Why are weeds a problem?' can be found. When 'Why are weeds a problem?' is selected, further sub-links appear on the left hand side, which is where the link of 'Impact of Weeds' can be found.)

The Australian Government explains:

*"A weed is any plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity. Weeds typically produce large numbers of seeds, assisting their spread and are often excellent at surviving and reproducing in disturbed environments. A weed can be an exotic species or a native species that colonises and persists in an ecosystem..."*

Below is a summary of the content of the fact sheets.

Weeds are among the most serious threats to Australia's primary production industries and natural environment. Weeds have major economic, environmental and social impacts in Australia, causing damage to natural landscapes, agricultural lands, waterways and coastal areas.

They displace native species, contribute significantly to land degradation, and reduce farm and forest productivity.

Weeds reduce the quantity and quality of agricultural, horticultural and forestry products. Weeds reduce farm and forest productivity, invade crops, smother pastures, and can harm livestock. Weeds compete for water, nutrients and sunlight, reducing crop yield and crop quality. The cost of weeds to Australian agriculture in impact and control has been estimated at \$4 billion dollars annually, comprising \$1.5 billion in weed control activities and \$2.5 billion in lost agricultural production. [The ABS in 2009-10 has also found that weed management activities was the most time consuming for agricultural businesses, undertaking on average 31 person days of effort. (1301.0 Year Book Australia, 2009-10, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1301.0Chapter3022009%E2%80%9310>).]

It is expected that the cost to the environment would be similar or more to that estimated for agriculture. Weeds destroy native habitats, and threaten native plants and animals. Weeds compete for water, nutrients and sunlight with native plants, grow faster and replace native plants that animals use for shelter, food and nesting. Weeds change the natural diversity and balance of ecological communities.

Hence the Australian Government recognises that there are non-native weeds and native weeds, and that weeds threaten the environment and agricultural productivity.

### 17.3. Conclusion

As recognised by the Commonwealth and Victorian governments, a weed is harmful to the productivity of agriculture and to the environment. Weeds compete with native plants, pasture and crops for water, nutrients and sunlight, destroy native habitats and threaten native plants and animals.

Planning schemes do not enable the removal of many native weeds without first seeking a permit. If a permit is refused, the weed threat continues. If a permit is granted, offsets are required to be provided.

A weed is a weed, whether or not it is native to Australia. This is particularly demonstrated by the Weeds Triage Manual which lists native and non-native weeds in its Appendix 3. The Weeds Triage Manual also reflects that there are many native weeds not listed in planning schemes, as shown by the content of its Appendix 3.

There should be a blanket provision in planning schemes that native weeds listed by a national or state government department, government agency or a not-for-profit organisation, which is not listed as noxious, is also able to be removed without a planning permit, whether or not that native weed has been identified as occurring in the area. Such blanket provision would encourage environmental protection and agricultural productivity, and also reduce the spread of weeds after a major fire.

18. Planning and environment legislation and buying environment services (chapter 3 of the draft report)

The recommendation of buying environment services is supported.

Alternatively, if government identifies vegetation that they wish to retain, the government can buy the land. Another option is that the government can take steps to re-cultivate the plants in public land. Vegetation is a renewable resource. Also, if applicable, the government can relocate animals onto public land, as is already done, for example, after a major fire. In Victoria alone, approximately 35% of the land is held by the Victorian government, so there is much scope.

(A description of the Victorian public land held by the State Government of Victoria can be found at 'Victorian Crown Land Area Statement' August 2013, State Government of Victoria,  
[http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0006/199068/FactSheet\\_CrownLandVictoria\\_20130821FINAL.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0006/199068/FactSheet_CrownLandVictoria_20130821FINAL.pdf).)

Otherwise should the government want the vegetation to continue to be retained on the private land, then the owner should be paid for the environment services, and also be compensated for the loss of use of the land, as well as a premium to recognise the additional occupational health and safety risk caused by the extra fuel hazard that the vegetation causes, to reflect the increased risk to the farmer's life, their livestock, their crops and property in the event of a major fire.

**PART THREE**  
**OTHER ISSUES IN THE DRAFT REPORT REGARDING CHAPTER 4 (WATER), CHAPTER 5 (ANIMAL WELFARE), CHAPTER 7 (BIOSECURITY), CHAPTER 8 (TRANSPORT) & CHAPTER 10 (LABOUR REGULATION)**

WATER (CHAPTER 4 OF THE DRAFT REPORT)

19. Major fires, environmental flows and regulation (pages 157-163 of the draft report)

19.1. Major fires and environmental flows

Water is allocated to waterways such as rivers. The objective is to maintain the environmental values and health of water ecosystems, including their biodiversity, ecological functioning and quality of water and the other uses that depend on environmental condition. Alternatively water can be allocated to waterways to improve these environmental values and the health of water ecosystems. (Sections 48B(2), 4B & 33DC of the *Water Act 1989 (Vic)*, and <http://www.depi.vic.gov.au/water/governing-water-resources/water-entitlements-and-trade/environmental-entitlements>.)

The allocation of water to waterways in these circumstances are known as ‘environmental flows’.

The regulatory focus of planning and environment laws is to retain vegetation, rather than the overall landscape. Therefore the emphasis is on major fire suppression, survival and recovery, rather than preparation to either prevent or reduce the impact of a major fire. (See Part One.)

Some of the consequences of the regulatory focus are:

- (a) A major fire contaminates water and rivers, and water quality does not return to the pre-fire scenario for between 5 to 20 years; and
- (b) As a result of a major fire, after approximately 5 to 10 years, streamflow reduces. New forest growing in the catchment consumes “significantly more water” than previously mature forest. The post-fire streamflow returns to the pre-fire streamflow in about 100 years.

(See Part One above, paragraphs 9.5.3 and 9.5.4.)

As a result of a major fire, not only is quality affected (for up to 25 years), but there is less water for activities such as for drinking, irrigation and livestock, and decreased environmental flows in the catchment (for about 100 years). Therefore major fires also adversely affect the health of water ecosystems and its functioning, in the short, medium and long term. Accordingly more water for environmental flows would need to be used to adjust for the conditions left by the major fire. Thus additional water used for environmental flows for these periods, which would not have otherwise been required in the pre-major fire scenario, further reduces the water available to the farming community for about 100 years.

Had effective preparatory steps across the landscape been carried out to avoid the major fire or reduce its impact, the issue of water availability for environmental flows and agriculture would be minimised.

The plans show that private land can contribute to reducing the average total major fire risk across the landscape by anywhere between 5% and 30%, depending on the region. (See paragraph 6.4 above in Part One of this paper.) However the laws do not allow the effective preparation of the land to prevent or reduce the impacts of a major fire.

Farmers should not have to bear the consequences of the regulatory focus, of reduced access to water and higher water prices as a result of a major fire occurring that could have either been avoided or its impact reduced in the catchment region.

#### 19.2. Major fires and caps (page 159 of the draft report)

For the same reasons above, this also applies to caps. The draft report refers to an earlier report of the possibility of conservative separate groundwater and surface water caps short term, and that rules of thumb could be used such as capping extraction from all groundwater sources within some distance of connected rivers. Farmers should not have to bear the consequences of the regulatory focus, by having caps applied and having further reduced access to water (in addition to the above) as a result of a major fire occurring that could have either been avoided or its impact reduced in the catchment region.

#### 20. Dams

A major fire has significant impacts on the environment, including reducing stream flow and water quality, and biodiversity.

Dams should be encouraged on farms. Dams not only assist in production, but also act as a water source for firefighting purposes, as has been used in the past. This is evidenced by:

- (a) the CFA Guidelines (cited in Part One), which recommends having water supplies available for fire fighters, including dams (page 31); and
- (b) the Victorian government policy to replace water, including from dams, taken to fight fires.

(See in particular page 4, 'Replacement of essential water used during bushfire fighting operations policy', November 2013, Victorian Government, <http://www.delwp.vic.gov.au/fire-and-emergencies/essential-water>.)

Obviously having nearby water points for aircraft and ground crew reduces fire-fighting turn-around times, thereby increasing the time spent fighting the fire, so helping the fire to be suppressed quickly, and reducing farm losses and the impact to the overall landscape.

#### 21. Water trading (page 164 of the draft report)

The draft report explains that a recurring issue is the degree non-agricultural users should be eligible to trade in water, and potential water users include urban water users and mining and power generation industries.

It is a question for governments to decide whether they wish to capture water in a major flood, thereby reducing damage and promoting orderly management for future uses. It is understood that this is the intention for northern Australia.

However water trading is permitted by speculators. These are commercial entities who buy water rights, and hold on to it, to then sell at a profit. Allowing water trading by speculators means that the availability of water trading supply is reduced, and can increase prices, thereby reducing the productivity for users such as in agriculture. Water trading in Australia by speculators should be prohibited. Should the prohibition be implemented, those speculators should be given a reasonable transition period to sell their existing holdings.

## ANIMAL WELFARE (CHAPTER 5 OF THE DRAFT REPORT)

### 22. A new body (draft recommendation 5.1), and monitoring and enforcement (draft recommendation 5.2)

#### 22.1. A new body (draft recommendation 5.1)

The draft report recommends a new federal body that develops national standards and guidelines, which could then be adapted to local circumstances by state and territory governments (pages 203 and 204 of the draft report).

The Productivity Commission is concerned with delays and inconsistencies. However introducing another body may create additional delays. The nature of any inconsistencies have not been identified, and there is already a coordinated process.

The main functions proposed are in place. The draft report explains (on page 185) that there is the Agriculture Ministers' Forum, the Agriculture Senior Officials Committee, and its advisory body, the Animal Welfare Task Group, which develop standards and guidelines. Also, state and territory governments have animal welfare advisory committees to provide advice on animal welfare matters. (Page 198.) States and territories can adapt them to their local situations. (For example, as shown on pages 182-183 of the draft report.) Further, Animal Health Australia manages the process for developing national standards and guidelines. (Page 186 of the draft report.)

The responsibility of state and territory governments means that welfare matters are decentralised, and people who are suitably qualified and have the local knowledge can act quickly. In addition, farmers are concerned about welfare, not only as caring for livestock is part of their way of life, but also it results in higher livestock productivity and economic benefit. Codes also apply.

#### 22.2. Monitoring and enforcement (draft recommendation 5.2)

The draft recommends a review of monitoring and enforcement. Matters are reported to the government department for further investigation. In Victoria, the enforcement officers have clear roles and responsibilities, and have relevant knowledge and experience, thereby avoiding a conflict of interest. In addition, the government department is subject to the jurisdiction of the Victorian Ombudsman.

#### 22.3. Conclusion

The welfare of animals regarding live exports is a federal government responsibility. The treatment that has been the problem relates to the welfare of animals after they leave the farmer and leave the country. However it is this point that seems to drive the push by the community for another federal body, as evidenced by the responses from individuals received by the Productivity Commission (which have been collated in a document 'personal responses and views'). However the draft report has not limited its recommendation to live exports.

The two concepts – welfare of commercial livestock within Australia, compared to their welfare when subject to live exports are two distinct situations. It is the latter which has received the negative feedback in the media and caused community concern, and relates to how foreign countries treat the livestock, not the farmers in Australia.

A new national body should not be developed, but a coordinated approach to reduce major fire risks (discussed in Part One of this paper) is in the interests of animal welfare in Australia (discussed below), and should be implemented.

### 23. Animal welfare and major fires

The significant welfare issue of animals in Australia is major fire. There should be a coordinated approach to reduce major fire risk.

#### 23.1. 2014 prosecutions and orders of animals in Victoria, compared to the number of deaths from major fires in 2014

In the “Animal Health in Victoria 2014” report of Victoria’s Chief Veterinary Officer for 2014, it explains that the general cruelty provisions of the *Prevention of Cruelty to Animals Act 1986 (Vic)* are enforced by officers from two government departments [now one], the RSPCA, local government, and the Victoria Police. These agencies made nearly 100 prosecutions, of which courts issued 36 orders banning or regulating animal ownership. (So this figure includes domestic animals as well.) (Page 55, State of Victoria August 2015, [http://agriculture.vic.gov.au/\\_\\_data/assets/pdf\\_file/0017/311273/Animal-Health-in-Victoria-2014\\_FINAL5.pdf](http://agriculture.vic.gov.au/__data/assets/pdf_file/0017/311273/Animal-Health-in-Victoria-2014_FINAL5.pdf) The government department is now the Department of Environment, Land, Water and Planning <http://www.depi.vic.gov.au/about-us> )

It is also explained in the Animal Health in Victoria 2014 report that the Department undertook broad scope surveillance activities of livestock, poultry, pig, alpaca, aquaculture and honeybee industries, and wildlife. (Page 4.)

The number of deaths of livestock from major fires is to be compared to the number of court orders made regarding the welfare of both livestock and domestic animals. The scale of suffering and death of livestock caused by major fire eclipse individual complaints. 36 orders in 2014, compared to almost 17,000 livestock deaths from two major fires in 2014 alone in Victoria. (See Appendix A.) The significant welfare issue of animals in Australia is major fire.

#### 23.2. Numbers of deaths from major fires between 2002 and 2014 in Victoria

Major fires kill people, livestock, beehives and wildlife. They burn to death, suffocate to death, or die from their injuries. This is demonstrated by the seven major fires in Victoria from 2002 to 2014. 178 people died in three of the major fires. In six major fires, at least 107,806 livestock died. In three of the major fires alone, approximately 4,831 beehives perished. In one major fire alone, 220 tonnes of trout from trout farms perished. In one major fire alone it was estimated that millions of wildlife died. Once again, this information shows that the significant welfare issue of animals in Australia is major fire.

23.3. Examples of descriptions of suffering of wildlife and livestock that have survived a major fire  
Wildlife’s habitat, food sources and shelter are destroyed in a major fire. The wildlife that survive can starve to death, be at increased risk of predation, or need to be euthanised from their injuries. (See Appendix A.)

For livestock that survive the major fire, Department staff attend farms and assess livestock.

Agriculture Victoria has issued fact sheets on the assessment of cattle and sheep after a bushfire. The fact sheets show how cattle and sheep die in a major fire, and for those that do not perish, the

type of injuries that the livestock can sustain. The fact sheets explain that cattle and sheep “are common victims of bushfires in Victoria.” For cattle, large numbers are affected when they are in paddocks with grass, however given cattle’s superior height and speed, they are less affected by fires than sheep, but can be severely burnt if trapped, e.g. by a fence. Sheep are affected when they mob themselves into corners of paddocks against fences “where they are burnt or suffocate”. Those in the middle of the mob may escape injury. Wool is a good insulator so sheep in full wool are less likely to suffer severe burns than sheep that have been sheared. Cattle and sheep may also suffer burns when walking on burnt ground. After a fire, biosecurity teams from the department are assigned properties on which to assess the damage sustained. The initial concern is to assess livestock and destroy those that are too severely burnt to survive or would be inhumane to keep them alive. Examples of such injuries are as follows. The animal has severe burns to more than 15% of the body where areas of skin have been destroyed, making it split and slough away. There is extensive damage to the animal’s legs and feet with swelling of the legs, and the skin is dry and leathery in appearance. The hooves are coming away so the animal is walking directly on the pedal bone. There are severe burns to the face and eyes, so that the animal cannot see, or has breathing difficulties from their damaged lips or nose. Cattle that do not require immediate destruction are assessed for salvage slaughter (if practical), kept and nursed (if practical) or assessed as being without apparent damage. Other considerations include the availability of feed, water, fencing and handling facilities post-fire. If the animal is being kept and nursed, one is to be aware of the potential for flystrike on the animal’s burnt areas and on their feet. There is also a need to check for and remove scabs that may be causing urinary obstruction, and attend to a young calf if the cow has burnt teats. Those which are deteriorating are to be humanely destroyed. For animals without apparent damage, there is also a need to look for breathing difficulties caused by smoke inhalation.

The local municipality is responsible for burial of dead stock, usually facilitated through the Department’s Animal Health staff. It is important to dispose of dead stock quickly, as burnt carcasses decompose rapidly and become a breeding place for flies.

(‘Assessing cattle after a bushfire’ fact sheet, Agriculture Victoria, The State of Victoria, last updated 17 February 2016, <http://agriculture.vic.gov.au/agriculture/emergencies/recovery/livestock-after-an-emergency/assessing-cattle-after-a-bushfire> &

‘Assessing sheep after a bushfire’ fact sheet, Agriculture Victoria, The State of Victoria, last updated 16 February 2016, <http://agriculture.vic.gov.au/agriculture/emergencies/recovery/livestock-after-an-emergency/assessing-sheep-after-a-bushfire>

Please note that the relevant department is now the Department of Environment, Land, Water and Planning.)

#### 23.4. Conclusion

The scale of suffering and death of livestock caused by major fires eclipse individual complaints. 36 orders in 2014 (for livestock and domestic animals), compared to almost 17,000 livestock deaths from the major fires in 2014 alone in Victoria. The significant welfare issue of animals in Australia is major fire.

In the interests of animal welfare in Australia, there should be a coordinated approach to reduce major fire risk, (as detailed in Part One above). Planning and environment laws should not focus on retaining vegetation but to focus on the overall landscape. That is, not to emphasise major fire suppression, survival and recovery, but preparedness to either prevent a major fire or reduce its impact in its intensity and spread across the landscape, to avoid or reduce human, livestock and wildlife deaths and suffering, and damage to the environment long term.

#### 24. Planning permits and animal welfare

When a permit is granted, a condition may be included which has the effect of limiting the hours in the day within which a truck can deliver or pick up livestock. For more information, please refer to paragraph 16.1 above in Part Two of this paper, under the subheading 'Livestock'.

#### 25. Public road closures, major fires and animal welfare

In a major fire, and after the event, public roads are closed, affecting animal welfare for surviving livestock. For more information, please refer to paragraphs 29 and 30 below under the heading "Public roads (chapter 8 of draft report regarding transport)".

#### 26. Information request 5.1 (page 205 of the draft report)

##### 26.1. Second bullet point

Notwithstanding paragraphs 22 and 23 above, should a body be established, it should make recommendations and not decisions. Otherwise it would change the co-ordinated approach to animal welfare, and would prevent state and territories from making decisions about implementing and adapting any recommendations to their own regulations and local situations.

##### 26.2. Third bullet point

The question is asked of processes the body should use to inform and gauge community values on farm animal welfare.

However issues identified in the draft report are:

- (a) "attitudes are more reliable predictors of behaviours if based on knowledge and experience of farming practices" (page 193);
- (b) surveys "should be statistically robust and transparent" (page 196); and
- (c) "A major challenge in this area is to ensure that people's views about welfare take into account their willingness to pay for it, and that their views are based on accurate information on the actual, rather than perceived, welfare impacts of farming practices." (page 197).

Although surveys should be statistically robust, the only way to gauge community values is to survey each of the communities in Australia, which is obviously not practical. Also it will be difficult to obtain community values when most members of the community do not have experience in farming practices.

It is the people on the ground that best understand animals and their welfare, and in particular, veterinarians who practise in commercial livestock, and people who deal with commercial livestock such as farmers. Animal welfare outcomes should not be determined by community surveys, but by those who work in the field.

Should surveys be completed by the public, the surveys should be limited to their willingness to pay premiums (like in the Choice survey cited on page 360 of the draft report), and their perceptions (such as in food labelling, page 342).

#### BIOSECURITY (CHAPTER 7 OF THE DRAFT REPORT)

##### 27. Strategies to discourage trespass, Information request 7.1 (page 292)

Chapter 7 of the draft report acknowledges that trespass can increase biosecurity risk.

Trespass can threaten the safety of those working on the land, livestock and the trespassers themselves. Farms have heavy machinery in use and livestock can bolt. A farm is not a place for such surprises. Also if a medical crop is being grown for which a special licence is required, the security risk is increased.

The information on pages 119 and 120 of Chapter 3 (environment) places the farmer squarely at risk when consent has not been given. Such public accessibility of farmers' location and contact details should be removed, and Google Earth be required to remove information on farm locations, unless the farmer specifically consents. In other words, it should be an opt-in process to release the information publicly.

##### 28. Weeds

Chapter 7 of the draft report acknowledges that weeds impact on biosecurity. In relation to the laws preventing native weeds to be removed without a permit and the damage weeds causes to the environment and productivity of the land, please refer to paragraph 17 above in Part Two of this paper, under the heading "Planning schemes and native weeds".

#### PUBLIC ROADS (CHAPTER 8 OF THE DRAFT REPORT REGARDING TRANSPORT)

##### 29. Public road closures and major fire

Emergency services close public roads for public safety in a major fire, during the fire, and after it has passed and only allow emergency personnel.

However in doing so, farmers are not given priority access, and are treated as other members of the public.

If there are any surviving livestock, they need water and feed. However in a major fire:

- (a) the water supply (such as from the catchment or a dam on the property) is contaminated by ash and other debris; and

- (b) supplementary feed is destroyed, and there is little or no ground feed (with pasture destroyed).

Farmers require access to the public roads for trucks to bring in critical water and feed supplies, or alternatively to move the livestock to another location. Therefore access affects the welfare of animals. However access is refused.

The Victorian government has recognised this issue and that it is “critically important” to investigate and deal with it so early access is given, consequently Victoria’s road traffic management is under review.

(‘Bushfire roadblocks to be reviewed ahead of this year’s fire season’, 6 August 2014, by Cimara Doutré, The Weekly Times, <http://www.weeklytimesnow.com.au/news/national/bushfire-roadblocks-to-be-reviewed-ahead-of-this-years-fire-season/news-story/16d83117a9c837b8ecd68232bb39a323>.)

Accordingly second only to emergency services, farmers and trucks for delivery or pick up should be given priority access to public roads, and should be reflected in policies dealing with road closures and be effectively implemented.

### 30. Vegetation on public roadsides and preparation to be fire ready

As part of preparation for a major fire, vegetation on public roadsides should be sufficiently managed to reduce the risk of public road closures in the event of a major fire.

This would help with tending to livestock that survive a major fire, and also to improve the safety of firefighters and assist in suppression activities.

Further, where there are any impediments in planning and environment laws to effectively prepare the public roadsides for a major fire, then these laws should be changed.

## LABOUR REGULATION (CHAPTER 10 OF THE DRAFT REPORT)

### 31. Occupational Health and Safety

Factored in insurance premiums is the fire risk for the area. However as explained in Part One of this paper, laws do not enable a farmer to take preparatory steps to reduce the risk of a major fire occurring or its impact (in spread and intensity) on the property.

(This is addition to the fire services property levy that farmers (and other land owners pay) in Victoria.)

There is an opportunity to make farms a safer workplace by allowing farmers to reduce fuel hazard to at least moderate and to implement the CFA Guidelines to be fire ready, so that it reduces the risk

of a major fire occurring on their land, or minimises the impact, rather than having to wait until the emergency arises and fight for survival for themselves, the animals, their business and the environment.

32. Attracting workers to farms

Please refer to paragraph 13 above in Part Two of this paper, under the heading “Planning schemes and dwellings”, which relate to laws that can make it difficult to hire temporary and permanent workers.

## PART FOUR

### SCRUTINY OF LEGISLATION (CHAPTER 14 OF THE DRAFT REPORT 'THE WAY FORWARD')

In Victoria, there is a rigorous process in place for subordinate legislation under the *Subordinate Legislation Act 1994 (Vic)* (“SLA”). It usually includes requiring a regulatory impact statement, which is independently reviewed and advised on by the Victorian Competition and Efficiency Commission.

The primary objectives of a regulatory impact statement in Victoria are to ensure that regulation is only implemented where there is a justified need, only the most efficient forms of regulation are adopted, and adequate level of public consultation in the development of subordinate legislation occurs. (Pages 22 and 23 of the SLA Guidelines, cited below.)

(See for example section 12C, 12D, 12E, 12H, 12I and 25A of the SLA, and Pages 11, 12, 14, 22, 23, 31 & 32 of the SLA Guidelines. The SLA Guidelines is located in Attachment 2 of Toolkit 3 of Victorian Guide to Regulation July 2014 <http://www.dtf.vic.gov.au/publications/victoria-economy-publications/victorian-guide-to-regulation>. See also a flowchart of the SLA process in Toolkit 3 itself, on page 16.)

Although planning and environment laws significantly affect people, the environment and animals, planning schemes and planning guides do not undertake the SLA process, nor do any local council by-laws which may overlap. Consequently landholders are not generally governed by Parliament, but are governed by departmental and ministerial regulation.

In response to the information request in 14.1 (on page 497 of the draft report), the State of Victoria could be given financial incentives to ensure that these laws are subject to the SLA. (As well as any other state or territory that has a similar regime.)

Further, there should be an additional financial incentive for the existing requirements to be subject to a review, as if the SLA process applied.

## APPENDIX A

(Appendix A is referred to in Part One of this paper, in paragraph 9.4, under the subheading 'Examples of destruction in recent major fires in Victoria'. Appendix A is also referred to in Part Three.)

Some major fires in Victoria are as follows.

### 1. February 2014 grass and scrub fires (CFA's description)

&

### 2. January 2014 bushfires

- (a) In the February 2014 grass and scrub fires, 40,657 hectares were burnt, mainly on private land.
- (b) Whilst in the January 2014 bushfires, 307,345 hectares were burnt, mainly on public land.
- (c) Wildlife and threatened species were affected. Animals died.
- (d) Almost 17,000 head of livestock either died during the fires or were assessed and destroyed on humane grounds afterwards. This included sheep, cattle, and horses. Mainly sheep died.
- (e) Fires destroyed 331 bee hives.
- (f) Fires destroyed sources of supplementary feed of 6,959 tonnes of hay/silage and 2,624 tonnes of stored grain.
- (g) In the Mickleham area in February 2014, 344 hectares of horticulture were destroyed.
- (h) Fires destroyed 125 farm sheds, and 1 dairy.
- (i) Fires destroyed approximately 2,486 kms of fencing.

(Page 20 CFA Annual Report 2013-14, [http://www.cfa.vic.gov.au/fm\\_files/attachments/Publications/CFA-Annual-Report-2013-2014.pdf](http://www.cfa.vic.gov.au/fm_files/attachments/Publications/CFA-Annual-Report-2013-2014.pdf),  
&  
Page 21, Animal Health in Victoria 2014, State of Victoria 2015, [http://agriculture.vic.gov.au/\\_\\_data/assets/pdf\\_file/0017/311273/Animal-Health-in-Victoria-2014\\_FINAL5.pdf](http://agriculture.vic.gov.au/__data/assets/pdf_file/0017/311273/Animal-Health-in-Victoria-2014_FINAL5.pdf),  
&  
Article 'Bushfires 2014', updates March, February and January 2014, Wildlife Victoria, <https://www.wildlifevictoria.org.au/bushfire-update-2014>.)

### 3. 2009 Black Saturday bushfires

In summary:

- (a) 406,337 hectares of land was burnt, of which approximately 70% was public land, and 30% was private land.
- (b) 173 people died.
- (c) Livestock losses, mainly sheep, cattle, horses and goats are estimated at more than 11,800.
- (d) 220 tonnes of trout died in trout farms.
- (e) Around 211,000 tonnes of hay was destroyed.
- (f) Early estimates are that 62,000 hectares of grazing pasture was lost.
- (g) Over 10,000 kilometres of fencing was destroyed on private, road and Crown land boundaries, and internal fencing.
- (h) Over 3,550 agricultural facilities were destroyed, including dairies, and hay, wool and machinery sheds.

- (i) The RSPCA estimates that more than a million animals died in the fires.
- (j) It has been estimated that millions of animals perished in the Black Saturday bushfires, from the event itself, or from starvation or predation after the event.
- (k) Wildlife had to be euthanised after the bushfires due to their injuries.
- (l) Animals included endangered species. For animals that survive and are rehabilitated from injury, their relocation will be difficult, given the destruction of the animals' original habitat.
- (m) Threatened flora and fauna were adversely affected, and their habitats. (These are described in the documents.)
- (n) "Many businesses were destroyed or damaged in the fires and thousands of others have reported being affected."
- (o) More than 820 kilometres of streams, rivers and creeks in two water regions were affected. "...catchment yield and quality will be affected for some time."
- (p) Many weeds re-emerged post-fire.

(See pages 5, 19, and 37-40, of '2009 Bushfire Recovery Program Public Land 2012 Update', Victorian Government Department of Sustainability and Environment, [http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0008/192941/2009-Bushfire-Recovery-Program-public-land-2012-update.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0008/192941/2009-Bushfire-Recovery-Program-public-land-2012-update.pdf),

&

'Black Saturday cost \$4.4 billion', article in The Age, 1 August 2010, by Darren Gray, <http://www.theage.com.au/victoria/black-saturday-cost-44-billion-20100801-11116.html>,

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page 11, 'Victorian Bushfire Reconstruction and Recovery Authority Six Month Report', August 2009, State Government of Victoria, Victorian Bushfire Reconstruction and Recovery Authority,

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'Bushfire history' up to 2013, Victoria Government, <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history>. Some additional information can also be found on this link. Further, maps of the 2009 bushfires in Victoria can be viewed at <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history/maps-of-past-bushfires>.)

#### 4. 2006/07 bushfires

- (a) Over 1,200,000 hectares were burnt, and mainly on public land.
- (b) 1 person died.
- (c) 1,741 livestock perished.
- (d) Wildlife died and habitat was damaged.
- (e) 1,050 tonnes of hay was burnt.
- (f) 17,914 hectares of pasture was burnt.
- (g) 1,375 hectares of cereal or horticultural crops were destroyed.
- (h) 1,966 kilometres of fencing was destroyed.
- (i) 220 farm buildings were destroyed.

- (j) Initial estimates are that approximately 55,000 hectares of harvestable forest was burnt, about 19,000 hectares of which is the high value ash eucalypt-type forest. These forests contribute to hardwood supply.
- (k) Approximately 2,500 hectares of plantation softwood was burnt.
- (l) "The negative impact of the fires on the financial status of an agricultural enterprise may be felt for many years after the event."
- (m) "Vegetation has been almost entirely denuded in many areas..."
- (n) Pest animals increase their impact after a fire, as do weeds.
- (o) "The fires had a severe impact on the catchments of most rivers in Gippsland and North East Victoria."

('2007 Report From The Ministerial Taskforce On Bushfire Recovery' for the 2006/07 bushfires in Victoria, Victorian Government, March 2007, [http://web.archive.org/web/20110328154735/http://www.business.vic.gov.au/busvicwr/\\_assets/main/lib60018/rdv\\_bushfire\\_recovery\\_07.pdf](http://web.archive.org/web/20110328154735/http://www.business.vic.gov.au/busvicwr/_assets/main/lib60018/rdv_bushfire_recovery_07.pdf), & 'Bushfire history' up to 2013, Victoria Government, <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history>. Some additional information can also be found on this link. Further, maps of the bushfires for the 2006/07 bushfires in Victoria can be viewed at <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history/maps-of-past-bushfires>.)

## 5. Victoria's 2005/06 bushfires

- (a) About 160,000 hectares were burnt, 60% public land and 40% private land.
- (b) 4 people died.
- (c) 64,265 livestock perished, including 63,243 sheep and 557 cattle.
- (d) Over 2,500 commercial beehives perished. At least another 2,000 beehives were affected by the extreme heat and smoke, but only some may recover.
- (e) "The loss of bees and hives will also impact on the capacity of other agricultural industries reliant on pollination."
- (f) 44 tonnes of supplementary feed was destroyed.
- (g) 53,000 hectares of pasture was destroyed.
- (h) 1,100 hectares of crops were destroyed.
- (i) 359 farm buildings were destroyed, including 39 woolsheds and 22 hay sheds.
- (j) Over 364 kms of boundary fencing with Crown land and 2,281 kms of fencing for other boundaries or internal fencing were destroyed.
- (k) 900 hectares of pine and eucalypt plantations were destroyed.
- (l) The bushfires caused serious issues for communities, local industries and the natural environment.
- (m) "In the longer-term, business capacity to achieve and contribute to economic recovery is intrinsically linked to repairs to damaged infrastructure, agricultural recovery, environmental recovery and ultimately the return of tourists."
- (n) "...the losses that occurred to stock, fencing, fodder, pastures, crops, plantations and beehives will have ramifications to farm businesses and natural resources in the short, medium and longer term."
- (o) "...the longer-term consequences of damage to pasture, feed and fences has implications not only for remaining stock...but also for soil erosion, on-farm and catchment water quality, and weed infestation."

- (p) “Pest animals are known to increase their impacts on private land after fire through increased predation by foxes on vulnerable stock...”

(‘2006 Report From The Ministerial Taskforce On Bushfire Recovery.’ Victorian Government Department of Innovation, Industry and Regional Development, 13 March 2006,  
[http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0006/198069/Bushfire\\_Recovery\\_Taskforce\\_2006.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0006/198069/Bushfire_Recovery_Taskforce_2006.pdf).

Some summary information can also be found on ‘Bushfire history’ up to 2013, Victoria Government, <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history>. Further, maps of the 2005/06 bushfires in Victoria can be viewed at <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history/maps-of-past-bushfires>.)

## 6. Victoria’s 2003 bushfires

- (a) 1,300,000 hectares were burnt, comprising about 91.5% of public land and 8.5% of private land.
- (b) More than 13,000 head of livestock perished.
- (c) Around 167,800 square bales of fodder was burnt.
- (d) At least 250 farm buildings were destroyed.
- (e) Thousands of kilometres of fencing was destroyed.
- (f) Habitats of endangered species were destroyed or damaged.
- (g) A number of threatened flora and fauna species have been put at serious risk.
- (h) It is estimated that over 150,000 sheep and cattle that had survived the fires to date (as at February 2003) have little or no feed due to the fires.
- (i) The bushfires has led to increased exposure and predation of wildlife and livestock.
- (j) New weeds have emerged.
- (k) “The scale and intensity of the fires has transformed the environment of the Victorian Alps for decades to come.”
- (l) Six of Victoria’s major waterways were affected. The rivers provide hydroelectric power, water for drinking, private irrigation of crops and pasture, and for stock.
- (m) Ash, soil and other debris washed into the rivers, affecting water quality in the short to medium term. Rain washes the ash, soil and other debris into rivers (such as decomposing carcasses) and excessive nutrient concentrations may cause algal blooms and kill fish.
- (n) Land burnt included “...the headwaters of Victoria’s most important water supply catchments, which feed the Murray River, the Gippsland Lakes, irrigation districts and commercial and domestic water users.”
- (o) Regarding water yield, “If trees have not been killed completely by the fire, catchments tend to become wetter over the following few months. As the trees recover, water yield returns to normal levels. If, however, trees have been killed, the forest must regenerate from seed. Regrowing forests use substantially more water than mature forests, so yields can decrease substantially as the trees grow. That means less water for activities such as irrigation and decreased environmental flows.”
- (p) “In the longer term, business capacity to achieve and contribute to economic recovery is intrinsically linked to infrastructure repairs to roads and bridges, agricultural recovery, environmental recovery and ultimately the return of tourists.”

(‘The Recovery Story, The 2003 Alpine Fires’, Victorian Government Department of Sustainability and Environment, 2005,  
[http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0006/192948/The-recovery-story-introduction.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0006/192948/The-recovery-story-introduction.pdf),

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[http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0007/192949/The-recovery-story-body.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0007/192949/The-recovery-story-body.pdf),

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'Final Report from the Ministerial Task Force on Bushfire Recovery', dated April 2003, which also includes as Attachment A the Interim report dated February 2003, Victorian Government,

[http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0007/198070/Final\\_Report\\_on\\_2003\\_Bushfire\\_Recovery.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0007/198070/Final_Report_on_2003_Bushfire_Recovery.pdf),

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'Bushfire history' up to 2013, Victoria Government, <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history>. Some summary information can be found on the 'Bushfire history' link. Also, a map of the 2003 bushfires in Victoria can be viewed at <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history/maps-of-past-bushfires>.)

## 7. Victoria's 2002 bushfires

- (a) 181,400 hectares were burnt, mainly on public land.
- (b) Ecological vegetation communities were burnt.
- (c) Fauna are at increased risk from predation.

'Bushfire history' up to 2013, Victoria Government, <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history>. Some summary information can be found on the 'Bushfire history' link. Also, a map of the 2002 bushfires in Victoria can be viewed at <http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history/maps-of-past-bushfires>,

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'2002/03 Big Desert Fire – Fire Suppression and Biodiversity Impacts', Mike Wouters,

[http://www.academia.edu/2636965/2002\\_2003\\_Big\\_Desert\\_Bushfire](http://www.academia.edu/2636965/2002_2003_Big_Desert_Bushfire).)