



Mountain Cattlemen's Association of Victoria

www.mcav.com.au
Reg. No. A2117

*Submission by the
Mountain Cattlemens Association of Victoria
to the 2009 Victorian Bushfires Royal Commission*

Appendices

May 2009

Contents

1	Terms of Reference for the Royal Commission	3
2	Comments by individual mountain cattlemen following the 2003 alpine fires	4
3	A Bushfire CRC Fire Note on "Fire and cattle: impacts on high country" April 2009	13
4	The collapse in the amount of fuel reduction burning from the 1980s (Athol Hodgson submission to COAG)	18
5	Victorian Auditor General 2003 report on fuel reduction burning	19
6	Mild Fire Conservation or Wild Fire Catastrophe, Jim Commins, 1997	21
7	Seven Decades of Planned Mismanagement	26
8	Submission by Jack Hicks to the COAG Inquiry following the 2003 Bushfires	32
9	Submission by Harry Ryder to the COAG Inquiry following the 2003 Bushfires	35
10	The history of grazing in the high country of Victoria	40
	10.1 Grazing the High Country 1835-1935	40
	10.2 Grazing the High Country 1935 - 1995	41
	10.2.1 The 1980's	41
11	Science and alpine grazing	46
12	An Overview of the Impact of Grazing on the Alpine and Subalpine Lands of Victoria: with Emphasis on Future Research Needs. AD Wilson	49
13	The Disaster of the Trial Plot - Percy Weston	56
14	Drought, Fire and Ideology Gone Mad - Bill Cumming	58
15	Take Heed from the Past and Learn for the Future - Brian Higgins	61
16	Judge Stretton 1939 Royal Commission Report	67
17	Summary and recommendations of <i>The People's Review of Bushfires, 2002-2007, in Victoria</i>	72

1 Terms of Reference for the Royal Commission

1. The causes and circumstances of the bushfires which burned in various parts of Victoria in late January and in February 2009 ("2009 Bushfires").
2. The preparation and planning by governments, emergency services, other entities and community and households for bushfires in Victoria, including current laws, policies, practices, resources and strategies for the prevention, identification, evaluation, management and communication of bushfire threats and risks.
3. All aspects of the responses to the 2009 bushfires, particularly measures taken to control the spread of the fires and to protect life and property, including but not limited to:
 - (a) immediate management, response and recovery;
 - (b) resourcing, overall coordination and deployment; and
 - (c) equipment and communication systems.
4. The measures taken to prevent or minimise disruption to the supply of essential services such as power and water during the 2009 Bushfires.
5. Any other matters that [the Commission] deem appropriate in relation to the 2009 Bushfires.

The Commission has also been directed to make 'such recommendations' as it considers appropriate, including recommendations for governments, emergency services, other entities and the community on:

6. The preparation and planning for future bushfire threats and risks, particularly the prevention of loss of life.
7. Land use planning and management, including urban and regional planning.
8. The fireproofing of housing and other buildings, including the materials used in construction.
9. The emergency responses to bushfires.
10. Public communication and community advice systems and strategies.
11. Training, infrastructure and overall resourcing needs.

2 Comments by individual mountain cattlemen following the 2003 alpine fires

BR: Buff Rogers
IR: Ian Roper and John Maddison
RC: Rusty Connley
ST: Simon Turner (MCAV President in 2003)
HR: Harry Ryder
SH: Stuart Hicks
BF: Barry Fitzgerald
JC: John Cook
LR: Laurie Reed, Delegate River, Tubbut area
RF: Richard Faithfull
BH: Barry Hicks

1 Please comment on the level of fuel hazard reduction around your licence area land over the past five years, what was done in 2002 and how vulnerable your licensed area was to fire in 2002. What is your comment on the level of the fire fuel reduction?

- BR *Fuel hazard reduction has been totally inadequate over the last 5 years. No fuel reduction of consequence was done in 2002, except an illegal burn which was extinguished by D.S.E. There has been no effective burning done for 20 years consequently the licence area was in a very dangerous state*
- IR *These licences are all in National Parks and had never been fuel reduced by controlled burning*
- RC *For the past five years fuel reduction has been negligible. In 2002 an attempt was made with approximately two hectares being successfully burnt. Weather conditions were unsuitable on the day. No follow-up attempts were made. In 2002 the fuel was extreme in the area is not grazed.*
- ST *Fuel hazard reduction has not been done on any areas on or adjacent to our grazing licences for the past 10 years. Nothing was done in 2002. Prior to 1992, only the occasional area has been fuel reduced by burning. For the past 40 years the level of fuel reduction burning has been steadily decreasing, leaving our licences extremely vulnerable to excessively hot fire activity. This level of management is totally unacceptable from both a safety, and environmental point of view.*
- HR *There has been no fuel reduction burning since the 1939 bushfire. The open grassland is managed by grazing. The closed heathland/timbered valley of Bundarra headwaters that cannot be accessed by stock is what burnt*
- SH *There has been nil fuel hazard reduction burning in the past 5 years. Nothing in 2002, and the area was extremely vulnerable in 2002, as it has been for as long as I can recall. There was a big build-up of heath, the previous generation i.e.: Wally Ryder, Ross Blair, Eric Weston and Bill Hicks called heath "Kerosene Bush" because of its highly explosive nature when burnt. Next to 100% of heath on our run was burnt. Photographic evidence from the early 1960's shows large areas were then grassed, these same areas have now been taken over by heath, due to the severely controlled grazing regime, this heath subsequently burnt in January 2003. Parks Victoria regarded burning as completely unacceptable in alpine areas, at any time.*
- BF *None. Very vulnerable. My only comment is that grazing held the fire fuel*

- JC *Some fuel reduction was conducted four years ago, but due to heavy snow last few years, the ground fuel was very heavy. This caused a very hot fires and crowning of the fire front, reducing the trees etc. to sticks, and foliage and grass to total destruction.*
- LR *Nil in 2002. Very vulnerable to fire. Adjacent areas burnt by wildfire in January 1988. No fuel reduction burning since then.*
- RF *To my knowledge no fuel reduction has been done during the past 10 years. Any fuel reduction burns done prior to this was not done by government departments but cattlemen. As evidenced by the amount of grazed area burnt there was obviously little risk of fire on the open grazed grasslands.*
- BH *The last time there was a fuel reduction burn around my run was 1939 to my knowledge. This fire was a disaster waiting to happen*

2 If the fire fuel reduction was inadequate, where there sufficient days when burning could be undertaken safely in the lead up to the fire season?

- BR *In the period September- October 2002 there were many days in which burning could have been safely undertaken.*
- RC *Many suitable days came and went that would have been adequate to recommence controlled burning but where not taken advantage of by the relevant authorities*
- ST *Most definitely. The number of dry seasons experienced in recent years have created burning opportunities well into Autumn and even early winter on the lower northern slopes. However, the resources of DSE have not been sufficient. The summer fire crews have been terminated at the end of the fire danger period, leaving only a skeleton crew of permanent staff who are trying to complete logging regeneration burns and don't have the opportunity to complete any general fuel reduction*
- HR *It is not the policy of the land managers to have any fuel reduction burns at the higher altitudes on the Bogong High Plains. There is always weather suitable for conducting fuel reduction burns. The season can be cut short by rain but in general there are always going to be opportunities to achieve something.*
- SH *We could have done fuel reduction burns every autumn for 20 years, and with that fuel reduction completed, stocking rates could have doubled thus preventing a takeover of the highly inflammable heath. With this fuel reduction burning and grazing we could have preserved more of the highly sought after alpine meadow*
- BF *Over the last 10 to 20 years, many.*
- JC *Yes*
- LR *Yes*
- RF *There has been opportunity for fuel reduction burns in the treed areas most autumns following removal of cattle in the past 10 years.*
- BH *Yes, last year there was a week of excellent weather to burn the bush.*

3 If you had any concerns about vulnerability to fire, did you express your concern to any government agency? If so, please tell us who you told.

- BR *Yes, we have been asking the NRE and PV every year for the last 20 years to fuel reduce and telling them that the whole district was a time bomb. If they did not fuel reduce we would be incinerated. Exactly that happened on the 30th of January.*

- RC *For many years I have been concerned about the level of fuel that was accumulating and strongly advised Parks Victoria at a meeting in Omeo in October 2001. I stated that if they didn't reduce the fuel level we would have a disaster that would be far greater than the 1939 fires.*
- ST *Some comments have been made through the local CFA brigade, however I am well aware of resource availability within the DSE, and realise that they didn't have the ability to address my concerns.*
- HR *I did not express any concerns about vulnerability to fire. It would have been futile*
- SH *Felt this was pointless, Parks Victoria and DSE clearly have their own anti-everything agenda.*
- BF *What was the value when Government agencies take very little notice of what you say.*
- JC *I expressed my concern to many government departments, members of the NRE, CFA and local government.*
- LR *Yes, NRE*
- RF *I did not have concerns about the vulnerability of fire because cattle grazing reduces the fire fuel load.*
- BH *I must admit I have got sick of trying to get action from the departments as far as burning the bush as they always have played around until it gets too wet to burn and say it's okay to go ahead.*

4 What effect did grazing have on your licence area in relation to the fires? For example, did it reduce the impact of the fire, not have much impact or have no impact.

- BR *Only in a few heavily grazed areas.*
- IR *In the 65% of the area burnt on these runs was all heath country, inaccessible to cattle and horses. The 5% of the grazed land burnt was only singed and, by the end of the season, cattle were grazing this area. Almost all our cattle grazed on the unburnt area, some going into Pretty Valley but they stayed on our side of the river. We did have 10 head of cattle go into the Falls Creek management area. We electrified our fence immediately after the fires and removed these cattle. The gate west of Rocky Valley Dam was left open on a couple of occasions and these cattle returned and we removed when we saw them. Altogether we removed these cattle three times. We were speaking to the Falls Creek Management Committee employees and they seemed to have had no objection to the cattle being there, so we eventually left them there. We did have four head of cattle grazing the periphery of the northern end of Rocky Valley Dam which we put back on numerous occasions. The reason they escaped was that Parks Victoria did not fix their fence correctly.*
- RC *The 2003 fires gained momentum in the ungrazed areas surrounding our licence. Once upon the grazed areas of fire decreased in intensity and slowed at it passed through the grazed areas.*
- ST *The grazed areas of our licences generally didn't burn*
- HR *Grazing dramatically steadied the fire to the point where it went out.*
- SH *In the grazed grasslands, the fire went out, thus creating areas in which entire ecosystems, of plants, animals, birds and insects have survived. In areas where cattle have been excluded, e.g.: Mt Nelse, the whole area was burnt leaving no refuge for anything. I would like to take this opportunity to point out, from my observations sphagnum moss beds, which were grazed around and sometimes through are the only ones to have survived. Moss beds in ungrazed areas, had thick heath build up around them, and were completely burnt.*

- BF *The area is grazed fairly heavily so had some impact on the fire not burning*
- JC *Grazing reduces the ground fuel, keeping the grass low and lush, like cutting a lawn and keeping it trimmed. Where there was no grazing it was totally burnt and will take a long time to recover.*
- LR *Grazed areas did not burn as hot. Most grazed areas had no crown fire.*
- RF *Grazing has significantly reduced the effect on my licence area in relation to the fires. Please refer to the attached photographs 1 & 2 taken on Friday 31st January 2003 which shows the trial plots, where no grazing is allowed, burnt by fire which stopped at the fence where the grass had been grazed. My observations on Friday, 31st January 2003 and those of Tim Faithfull prior to that were that Parks personnel were not interested in extinguishing the fires which were burning slowly across the licence areas. Tim was there for a week trying to extinguish the fires without assistance from Parks personnel whose only contribution was to erect signs saying "Track closed".*
- BH *Grazing had a huge effect in saving the country from not burning.*

5 If you would like to, please provide any comment on any observations about the activities of fire crews. Your comments might be critical, complimentary or both. Please state whether you are referring to the CFA, Parks Victoria or DSE etc.

- BR *Management of the CFA. crews was incompetent and the consequences appalling. CFA. information regarding the position and progress of the Fires was totally inaccurate! We were told the fires would not be here until Sunday the 2nd of Feb. Four Days earlier on Thursday the 30th of Jan I drove 30kms to Native Dog. The Fire front was then in the Buchan River Valley just below Native Dog. We then knew that the fire would be in Wulgulmerang that afternoon. We were told we would have CFA Tankers to assist us and 24 Tankers and Crews were located at "Karoonda Park" 30 minutes away. The only help we got as the fire was roaring down on us was a message from our local CF A Captain: "I am sorry, you are on your own. There will be no Tankers. Good Luck. I am very sorry" Parks Victoria was never sighted until about 3 or 4 weeks after the disaster! DSE did send a Dozer to put a bit of a break around the House and sheds one Day before the Fire.*
- RC *During the height of the fire we never heard from or saw any PV or DSE personnel until the fires were out in our area and then it was to request we consider removing the cattle from our leases.*
- ST *It took too long for the fire agencies to get serious about attacking this fire event. Too much valuable time was lost in the early stages of this fire campaign. Not enough aggressive approaches at fire suppression were implemented in the early stages allowing the situation to dramatically escalate.*
- *Aircraft were not deployed early in the day, by the time they were allowed to fly the smoke levels were reducing visibility*
 - *Back burning was not used to its greatest potential allowing the fire to spread*
 - *Fall back positions were all too often utilised rather than a more committed approach in the first instance*
 - *Insufficient local on ground knowledge was utilised*
 - *The concerns of possible litigation implications overshadowed practical, effective management decisions.*
- HR *It was obvious that the Alpine grazing leases and the associated plant communities were an extremely low priority for the DSE firefighting operation. Resources were everywhere but on*

- the Bogong High Plains. Environmental constraints on the use of bulldozers seemed more important than stopping the fire. Fire crews from DSE put most of their effort into the work being done during the hottest part of the day. Clearly backburns need to be conducted through the middle of the night then stopped by 4-00am to allow to subside before the day begins to heat up. This was not practised much and virtually every fireline was breached using the DSE preferred option of afternoon backburns and skeleton crews overnight. Instructions to CFA strike teams to NOT initiate backburns needs to be revised.*
- SH *As a lieutenant in the Dederang CFA brigade, on day one of the fires, I attended 1 of the 2 fires in crown land, which the Dederang brigade attended, and subsequently extinguished. At that fire there was a D4 Dept. bulldozer but the topography was too steep for it to work. From our position we could see 3 other smoke columns in the National Park. A call was received for the dozer to attend one of those fires. The reply was that the dozer was first to go back to the depot to be decontaminated, a task taking some 6 hours. It could have been at the next fire within 2 hours.*
- It was my concern along with most other locals, in the first 3 days of the fires, with unseasonably mild weather, i.e.: wind being mostly southerly, nothing was being done to extinguish the fires. On day 2 I attended a fire directly below our alpine grazing run on Mt Fainter. At this time this fire encompassed around 20 hectares. This fire was later called the Bald Hill fire. On arrival at the fire, we were confronted with a hostile Park ranger demanding to know what we were doing there. When told this was a cattle track and our grazing run was directly above, he said that this is a National Park and that wasn't possible. He had a crew of about 12 park workers from Mallacoota. There was a road on 2 sides and they had raked a trail linking the 2 roads together, the fire had burnt about 1/10 of the land enclosed. I indicated to him, the rest of the area had to be burnt out, he told me that was completely out of the question, as too many trees would be destroyed. I told him the fire would get away. I offered the Dederang CFA brigade to help, he said they had put in too much work and it wouldn't get away, he wouldn't even consider my offer. The next day the fire jumped the break and continued, eventually linking up with other fires, resulting in vast areas of alpine ash being burnt.*
- During the fires, whilst we were trying to protect our assets, e.g.: huts, yards, on our grazing run, we had no communications with Parks Victoria, nor did we see any Parks Victoria workers patrolling the high plains. They showed no interest what so ever in our assets or us.*
- BF *This comment is made by cattlemen who were on the spot, "The fire crews from Parks Victoria and DSE made no attempt to put the fire out in the early stages"*
- JC *I was divisional commander of the Benambra sector, working closely away from CFA, DSE and Parks Victoria ground crews and hierarchy. The ground crews were very good to work with, but their superiors were not very helpful. The main problem being that they would not take notice of local knowledge.*
- LR *All fire crews appeared to work well.*
- RF *Like Tim, I tried extinguishing fires with my slip-on firefighting unit without success. In my opinion, had there been large tankers of water sprayed on these fires earlier they would have been extinguished without further devastation. Photo 5 shows yards burnt at the edge of the bush area.*
- BH *CFA fire crews were very good but it seemed to be directed to save towns and important buildings and not much thought put in to stopping the forward thrust of the fire.*

6 Please comment on the vulnerability to fire of any land near your licence area that may have been grazed in years gone by. If you provide comment here, please clearly identify the land that you are referring to and when it was last grazed by cattle. Also, who is the current land manager, PV, DSE etc.

- ST *There are large areas of public land adjacent to our grazing licences and our freehold property in the parishes of Nunniong and Bindi, that have been grazed in the past 160 years, but due to changes in the structure and type of vegetation, these areas are now so densely vegetated that grazing is no longer feasible. This clearly shows how the vegetation has changed over time, affecting not only introduced herbivores but also the native fauna. These changes in Flora structure have been the key element in the intensity of this recent fire event.*
- HR *North end of Bogong High Plains, MT. Nelse, Spion Cope etc.. Grazed Prior to 1991. Fire burnt through this ungrazed area of the park totally and comprehensively. Very noticeable that fire burnt right to edge of stream beds in most instance in this ungrazed country*
- BF *Considering nearly 100% of the area around Mt Nelse and Watchbed was burnt, speaks for itself. The area has not been grazed since 1990.*
- LR *Licensed area is the Crown land buffer zone portion of original grazing block 1 Parish of Wyangil, which lies east of the Snowy River, between Snowy River, NSW border, and private land at Tubbut.*

The main area of original lease was taken over by PV when declared park around 1980 and grazing was disallowed.

This area was very vulnerable to fire and much devastation has occurred, especially in the lower grey (white) box areas adjacent to the Snowy River. It is my opinion that had been grazing been allowed, not only would fuel had been reduced, but the continued presence of a licensee would have been able to indicate problem areas and exert more pressure for fuel reduction burning.

I believe that by excluding grazing, DSE and PV are denying themselves and the people of Victoria valuable "Honorary Managers" if you like.

By interacting with the cattleman, they would be able to get information onto critical management issues, e.g. pest plants and animals, areas that require fuel reduction burning etc. as they do not have the manpower or, it seems, the inclination to properly manage our public land.

Cost to licensee would be negligible and the benefits to the State that flowed would be immense.

- RF *Please refer to attached photos 3 and 4 which show the almost complete devastation by fire of the area formerly leased by Fitzgeralds and controlled by Parks Victoria.*
- BH *It was evident to me that the open grass country that was not stocked heavily was burnt and burnt hot.*

7 If the fires affected your private property and you are adjacent to public land please comment on the level of fuel reduction on the public land over the past five years, what was done in 2002 and how vulnerable this public land was to fire in 2002. What is your comment on the level of the fire fuel reduction?

- BR *My Private Property joins the Grazing License area and my response is the same as for question 1.5*
- IR *We had no private property burnt nor was there any public land burnt adjacent to us. There has been no fuel reduction burning adjacent to us within the past 15 years*
- RC *Over the past five years there has been no fuel reduction programs at all. Fuel has continued to accumulate over many years in the State Forest that joins my private property.*
- ST *Same as 1.5*
- HR *Fires burnt 400+ acres, being 200+ acres of improved pasture plus 200+ acres of retained bushland and about 4 km of fence. No stock losses. Fuel reduction was carried out adjacent to about 1/4 of my boundary about 6 years ago and regularly prior to that. This strip had more grassland through the forest. The whole length of my boundary (7km) with the public land was burnt including the bit that had been fuel reduced 6 years ago however that section appears to be showing improved characteristics of regeneration. The grassy forest areas seem to have more plant life at ground level post fire than the areas that were heavily forested with mid story plants as well as big timber and deep litter on the forest floor. This type still has a very sterilised appearance 4 months after the fire. (THIS ASPECT WARRANTS FURTHER EXPLORATION). The level of fuel reduction was inadequate to stop the fire.*
- BF *Comment on the level of fuel reduction on the public land over the past five years - None. How vulnerable was this public land was to fire in 2002 - Very high. What is your comment on the level of the fire fuel reduction? Pathetic, since there hasn't been any fuel reduction burning for many years.*
- LR *Nil fuel reduction burning last five years. Some burnt by wildfire January 1988. Rest burnt by wildfire January 1939. This land adjacent to my property is very vulnerable to fire. Fuel reduction burning grossly inadequate to non-existent.*
- RF *All my pasture, hut, 10 cows and most fences on my Beloka property were lost to fire on 26 January 2003. Had fuel reduction burning being adequate this would not have happened – none has been done during the past five years.*

8 Please comment on any issues that you think should be considered by the 2003 Alpine Bushfire inquiry. This could include your opinion about the manner in which the land has been managed, whether fuel reduction burning has been sufficient, the manner in which the fires were fought and any issues that arose after the fires.

- BR *The management of the Alpine Park has left much to be desired. The enormous fuel build up over the last 20 Years made the control of this fire impossible. The locals of this district have been living in fear of this very disaster for years. Up to the late 60's and early 70's we cattlemen did a considerable amount of burning in Spring and Autumn. Fuel loads were never allowed to build up to the state they have been in recent years. Any fires that did threaten us were controlled and at least kept out of our Private Property. I hold PV and DSE fully responsible for the 30th January inferno and the losses of Stock and property we have suffered in this District.*
- IR *We also had destroyed in the fire the old Roper Hut on the Duane Spur and the huts and fencing in Bogong Creek. The old Roper's hut is probably the most important hut for walkers travelling between Mount Bogong and Falls Creek and this should be rebuilt for tourist safety. As requested, we removed all our cattle by truck on 27th March*

- RC *In summary it is more than obvious for the need of regular control fire reduction programs. This should be done in consultation with the local landholders and several tentative dates suggested, so climatic conditions can be taken into consideration - not just the date on the calendar which is currently the format with PV and DSE.*
It is the cattleman who ride and survey the bush in an attempt to utilise the best grazing areas for this stock, so it only makes perfect sense to utilise our knowledge in an endeavour to ensure that nothing like the 2003 bushfires happens again. Regrettably the threat of bushfires impacts on us every year. The most important thing is to keep the fuel load at a low level to prevent damaging intense heat fires that cannot be controlled, that means of regular cool burning assisted with seasonal cattle grazing.
- ST *The management of fire on Crown land in Victoria, in the Alpine, sub Alpine and forest regions has left much to be desired. The enormous amount of fuel build up over the last 2-3 decades made the control of this fire very difficult. DSE's own figures for actual fuel reduction achievements for the past 10 years in Gippsland indicate that they have fail to reach any more than 50% of annual targets. Even if the annual targets were achieved, I believe they would still be well below the level of fuel reduction that is required for a balanced environmental out come.*
- HR *It is unlikely that broad scale fuel reduction burning will ever be introduced however there needs to be a historical disclosure that recognises that the Australian bushland developed in the presence of fire, both from aboriginal burning and from lightning strikes and that the land managers have consciously decided to exclude regular fire from the landscape. The public needs to be made aware of the magnitude of the change to the environment that will come from these policies, fully debate it, accept responsibility for it, and sit back and watch the bush evolve into something else again.*
Fuel reduction zones around rural communities are a necessity to avoid loss of life from fire in the future.
Rehabilitation of fire control lines through farmland.- To be done by the people that make the fire control lines.
- SH *If the National Park is to once again become the national treasure it should be essential that the green ideology driven, policy forming bureaucrats based in offices, be replaced with broadminded, practical people who are not afraid to embrace common sense.*
- BF *The land is very poorly managed. When fuel reduction burning is done it is hit and miss rather than burning the whole area. The fire should have been attacked early and an attempt made to put it out rather than just control it.*
- JC *These lightning strikes could have been contained and controlled in the first four days if Parks Victoria and DSE in the Northeast had listened to locals.*
Fuel reduction burning was practically non-existent.
The DSE and Parks Victoria must remember that public land belongs to the public, not just them.
Controlling and containing fires of this or any size cannot be done from offices. It has to come from the fire front to the local control centre, then to the Incident Control Centre, who then keep the equipment and appliances up to the men on the fire front.
All firefighters and control personnel from other areas, must have a local with them all times to prevent errors of judgment due to lack of local knowledge.
- LR *The trouble is the land has not been managed, except for some license areas. The fact that many license areas were not severely burnt and few cattle lost is in itself evidence enough!*
Fuel reduction burning is grossly inadequate.

Have no problem with the general manner in which fires were fought by crews on the ground. There were, however, some stuff-ups in co-ordination and general administration at the higher levels.

In the aftermath of the fire, assistance in rebuilding defence and infrastructure damaged by fire is inadequate. The subsidy available for fencing is discriminatory in that it is only available to those who happen to be adjacent to Crown land and wish to construct a dog proof fence.

- RF
- *Fuel reduction must be increased to reduce the risk of losses by fire.*
 - *Grazing does reduce fire fuel load and should be used more widely.*
 - *Government departments need to heed local knowledge and form partnerships in planning and exercising control over public land.*
 - *Fire control needs to be closer to the front line.*
 - *Government personnel need training and mentoring from people with past experience fighting fires.*
 - *Are there too many chiefs? 29 people in the Incident Control Team – how can decisions be made in a timely and efficient manner.*

BH *The biggest problem I saw in the early stages of the fires were the NRE and PV tried to handle it on their own and didn't seem to understand the potential of the fire if we got bad days. Quicker response by all parties I think could have made a difference. Also I think one organisation should head all fires in Victoria. If a farmer owns country the CFA is in charge as well so we have the same people in charge of all fires. As for fuel reduction banning, we need a lot more autumn burning in the low country and in some cases roads built between private country and bush to use as an anchor point. You can't burn it all at once. You do it in patchwork style like the old cattleman did 40 years ago and in some cases more recently. Also, in Region 24 the fire restrictions need to be lifted earlier.*

3 A Bushfire CRC Fire Note on "Fire and cattle: impacts on high country" April 2009

Fire Note issue 28

The existing evidence about whether the combined effects of fire and grazing are effective in managing fuel loads and fire risk was scant and inconclusive. This project addresses this research gap with the aim of ensuring that reliable evidence is available in the future.

Background

Recent major bushfires in 2003 and 2006/07 have focused attention on the management of Australia's montane and alpine ecosystems. For example, 'The National Inquiry into the 2003 Bushfires' received over 500 submissions, many of which addressed aspects of land management policy and implementation in the high country. As well, in March 2007 the Victorian Government established an enquiry, 'Impact of Public Land Management Practices on Bushfires in Victoria'. Its terms of reference addressed the impact of public land management practices on the frequency, scale, and intensity of bushfires in Victoria, including alpine areas.

Two of the most controversial aspects of the management of Australia's high country are the role of grazing in reducing fuel loads, and the effectiveness of prescribed burning in reducing fire risk.

Much research has been conducted into the ecology of Australian alpine ecosystems, particularly with respect to the effects of grazing and fire on hydrology, vegetation cover and species diversity.

However, there have been few studies directly addressing the combined impacts of grazing and burning on fuel accumulation. This is surprising given that grazing, in conjunction with prescribed fire, was previously used to manage large areas of the Australian high plains ecosystems.

One of the key activities of this research is to investigate the interactive effects of cattle grazing and prescribed burning on vegetation structure, species composition and fuel accumulation in snowgum woodlands and subalpine grasslands in New South Wales and Victoria.

Summary

There has been very little research directly addressing the combined impacts of grazing and burning on fuel accumulation in high country environments. In 2006, the HighFire project began to address this evidence gap by establishing a fully replicated, long-term experiment in subalpine grassland and woodland in Victoria and NSW to investigate the combined effects of cattle grazing and prescribed fire.

Sites are surveyed annually and a laser-based point quadrat apparatus and methodology were designed and effectively applied. The experimental design allows us to rigorously test a range of hypotheses and answer questions of direct relevance to the management of these ecosystems, such as:

- Is cattle grazing an effective means of reducing fuel loads?
- In the absence of both grazing and prescribed fire, will the flammable shrub layer eventually be replaced by a (less hazardous) grassy understorey?

The valuable data from this project could be used in future to model fire impacts in these environments.

BushFire CRC research

Understanding how key human activities (such as management practices), along with environmental factors (including climate change), affect high country environments is critical for managing fuel loads and fire risks. This project aims to contribute valuable data on both fronts that could in future provide the basis for modelling fire impacts in these forests.

Our approach

We established study sites on private property at the Snowy High Plains, New South Wales, and subalpine grasslands at the Dargo High Plains, Victoria (see graphic above, locations E and H). Both study sites are approximately 1500m above sea level.

The short and long-term responses of the grassland and woodland ecosystems are being measured to experimentally manipulated levels of cattle grazing and burning.

The treatments

There are four experimental treatments:

1. Ungrazed by cattle and unburnt.
2. Ungrazed by cattle and prescribed-burnt.
3. Grazed by cattle and unburnt
4. Grazed by cattle and prescribed-burnt.

The sites

Three replicate grassland sites, 100m x 50m, are established at the Snowy Plains and Dargo. Three snowgum woodland sites are established at the Snowy Plains only and are 100m x 100m. All sites are permanently marked and half of each site securely fenced to prevent access to grazing cattle, but allowing access to non-target herbivores such as pigs, wombats and rabbits (pictured below). Each site has four experimental plots for each treatment and was established over the summer of 2006/07.

Data collected

The experimental plots were surveyed prior to burning and will be re-surveyed annually. The data collected include various measurements of vegetation structure and ecosystem function, such as measurements of fine and coarse woody fuel loads, species composition, vegetation cover and canopy height, tree mapping, tree diameter measurements (DBH or diameter at breast height), shrub understorey height and cover, and photographs taken from permanent photopoints.

A range of other studies are now being done at these sites, including the assessment of:

- greenhouse gas emissions
- tree water use and stand hydrology
- soil carbon respiration

- soil chemistry.

Fire behaviour measurements recorded during burns and cattle movements will be tracked during several grazing seasons. We developed an innovative advance of a traditional concept that is worth noting: our unique point quadrat tool and methodology is described in more detail in the breakout box on page 4 and in the protocols document (Roxburgh and Taranto 2008). The summer of 2008/9 is the third year of collecting measurements.

Research outcomes

A key overall impact of the experimental burn was to significantly change the size-class distribution of living trees, with smaller trees more susceptible to fire, and larger trees more vulnerable if they were older or damaged from previous fires.

Major differences in vegetation structure between the grassland and woodland understorey are summarised in the study. The woodland understorey has greater ground-fuel loads, greater shrub cover, and greater average (understorey) canopy height. The ground-layer herbaceous species (tussock forming *Poa* species and other herbaceous species) show a similar overall cover between the two vegetation types.

Tree maps were also made for the woodland sites, where the location of each individual snowgum (*eucalyptus pauciflora*) was mapped, the diameter at breast height and bark depths measured, and a record made of whether the tree was dead or alive. These measurements will be re-taken through time to investigate changes to the population structure of the woodland in response to the applied treatments.

Because of the slow growth and response of many of the component species, and the importance of long term year-to-year climate fluctuations, we will need to maintain and monitor the experiment for many years to come.

Three snowgum woodland sites at the Snowy Plains were burnt in March 2007, allowing us to examine, in detail, initial fire effects and patterns and processes of recovery for these subalpine ecosystems (picture series, left). The snowgum woodland plots were re-sampled 13 months after burning, and tree survival recorded. Fire severity varied both within a burn, and between burns. Such spatial patchiness has important implications for biodiversity recovery and refugia (an area from which surviving species may re-disperse after climate change). Across all plots there were, prior to burning, 670 live trees. The impact of the burn was to preferentially kill the canopies of the smaller size-classes, significantly altering the size-class distribution of living trees.

The probability of a tree suffering canopy death declined with size up to approximately 38cm DBH (diameter at breast height), but then rose again. The increased probability of canopy death at larger size-classes reflects greater susceptibility due to natural ageing, and accumulated damage from previous fires.

These patterns of mortality provide a quantitative basis for modelling fire impacts in these forests. They also provide the necessary data to link fire impacts to population size structure, and resulting changes in the size-class distribution (and hence fuel distribution) of the population. The recovery of the trees will continue to be monitored.

CRC research at Work

Evidence from this long-term project will significantly improve our understanding of whether the combination of fire and grazing is an effective fuel management practice in the high country. In decades to come, this will enable future generations to make land management decisions that are based on credible research that was not available to their predecessors.

However, in the short term, the evidence is already providing an insight into landscape differences among subalpine grasslands and woodlands and the immediate responses to the combined treatments of fire and grazing.

The fire/grazing experiment was established as a long-term experiment to monitor the response of relatively slow-growing vegetation to the effects of treatments conducted periodically (annually and several years apart). Improving our understanding of the combined effects of fire and grazing on the vegetation/fuel dynamics of subalpine ecosystems requires a long-term effort, estimated to be at least several years and perhaps over decades.

The short-term (0 to 10 years) effects of fire on vegetation are easily measured. However, the effects of grazing are much more gradual and apart from the immediate removal of above-ground material, the longer-term effects on species composition may take decades to become apparent. Hence, the combined effects of fire and grazing will also take up to decades to become apparent.

An update of this research and the major outcomes will be available via:

- Fire Notes
- papers in peer-reviewed journals
- the Fire Knowledge Network
- open days at research sites
- further collaborations with end users and other researchers, within and outside the CRC.

Ultimately, data from this experiment will be used, along with data from other High Country Fuels and Ecosystem Functions (HCFEF) projects, to drive a model that would predict changes to vegetation/fuel dynamics in subalpine ecosystems in relation to fire risk.

Future directions

The fire/grazing experiment is one of five subprojects of the HighFire Fuels and Ecosystem Functions (HFEF) project and each is investigating an additional, major gap in our understanding of Australian subalpine and montane ecosystems. HFEF is also examining aspects of water and gas fluxes and how they relate to changing climates, fire regimes and management practices.

Specifically, the range of other experiments in progress are examining:

- the flux of water and greenhouse gas from soils in subalpine woodland
- the flux of carbon and water in montane forest, snowgum woodland and subalpine grassland
- the dynamics of soil carbon in snowgum grassland
- methane oxidation in montane forest.

We continue to encourage other researchers (Bushfire CRC and non Bushfire CRC) to use the substantial infrastructure established at the Snowy Plains. To date additional non CRC-funded research undertaken at the field sites include:

- a short-term experiment by researchers at Monash University that examined the influence of past weather patterns on the growth of snowgums, and
- a long-term experiment by Dr Charles Warren from Sydney University, who is examining the influence of water and temperature on rates of photosynthesis and greenhouse gas emissions in subalpine grasslands.

About this Fire Note

Co-authors: Dr Stephen Roxburgh is a Research Scientist from CSIRO Sustainable Ecosystems; Dr Maria Taranto is a Research Scientist at the University of Sydney; Professor Mark Adams is Dean of the Faculty of Agriculture, Food and Natural Resources, at the University of Sydney.

This Fire Note is an update of ongoing research by the Bushfire CRC HighFire Project B5.1 Ecosystem Processes.

Fire Note is published jointly by the Bushfire Cooperative Research Centre (Bushfire CRC) and the Australasian Fire and Emergency Service Authorities Council (AFAC)

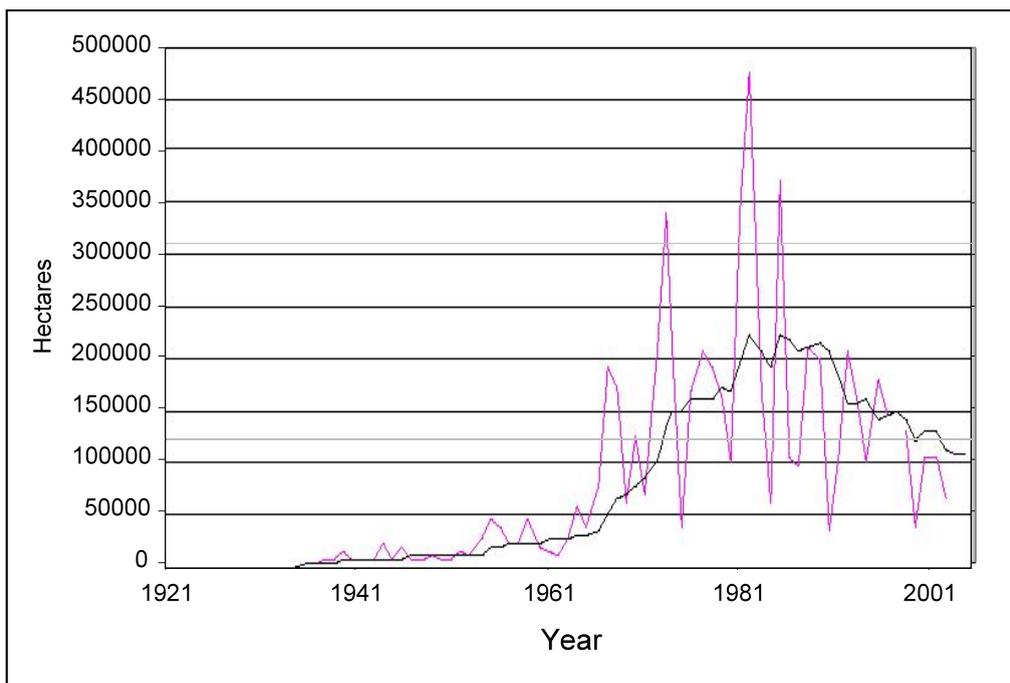
4 The collapse in the amount of fuel reduction burning from the 1980s (Athol Hodgson submission to COAG)

Extract from Submission by Athol Hodgson to the Council of Australian Governments bushfire inquiry, Department of the Prime Minister and Cabinet.

“The quantity of fuel management programs crashed after 1983. This is illustrated in the Figure below, which is adapted from Tolhurst (6) and shows the annual area of public land burnt by prescribed fires for hazard reduction in Victoria. The black line represents the rolling 10-year average.

Fuel reduction burning (FRB) peaked in the early 1980's and then fell. It fell despite the fact that after the 1983 Ash Wednesday fires the Victorian Government doubled the money in the 1983/84 budget for FRB programs.

Australia once led the world in making fire including prescribed fire, an integral part of forest management. That is no longer true.”



5 Victorian Auditor General 2003 report on fuel reduction burning

Victorian Auditor General report on Fire prevention and preparedness, No. 15 - Session 2003

OVERALL CONCLUSION

Improvements in fire prevention and preparedness have been made since our audit of fire prevention on public lands in 1992, and the tragedy of the Linton fire in 1998.

We concluded that the CFA and the DSE have made significant advances in the areas of:

- co-ordinated strategic planning for joint operations between the CFA and the DSE;
- implementation of common incident control systems, allowing clear understandings of fire suppression roles between the CFA, the DSE and interstate and overseas firefighters;
- the DSE's risk-based approach to resource allocation under its model of fire cover;
- community education programs developed by the CFA;
- provision of minimum skills training to CFA volunteers; and
- the DSE and the CFA's co-operative approach to implementing nationally accredited competency standards within a joint training framework.

However, further work is needed in a number of critical areas:

- development of a State wildfire safety strategy by the Office of the Emergency Services Commissioner (OESC);
- **increased focus on strategic management of hazard reduction on public land, to ensure that appropriate targets are set, resources are provided for their achievement and performance is monitored;** (our emphasis)
- improved fire prevention planning and hazard management on private land through the municipal fire prevention framework;
- implementation of whole-of-life cycle management for critical firefighting assets; and
- systematic identification of fire access needs on public land and planning to maintain the road and bridge network accordingly.

Recommendations 4.36

We recommend that the DSE:

- supplements the current area targets for fuel reduction burning with measures that more accurately reflect the level of risk reduction being sought and achieved, and reports results;
- fully costs fuel reduction burning activities within its internal budgeting process, allocates appropriate funding levels and allocates the cost of staff employed from other business units;
- in consultation with the Department of Treasury and Finance, considers revised funding arrangements to introduce greater flexibility to allow for differing levels of funding to reflect factors such as seasonal variations;
- introduce strategies to increase the availability of accredited field supervisors and the associated work force (e.g. through greater use of weekend work and the opportunity for CFA volunteers to participate); and
- provides increased public information regarding the fuel reduction burning program and the measures taken to protect the environment.

RESPONSE provided by Secretary, Department of Sustainability and Environment Fire management on public land strives to achieve a balance between prevention and preparedness to respond while recognising that even high levels of hazard reduction will not guarantee the absence of wildfire. The Department welcomes audit's suggestions while noting that there is range of environmental variables involved that significantly complicate the measurement of risk mitigation achieved by fuel reduction burning. Such variables include: vegetation type, slope, aspect, soil type, longer-term and more immediate weather factors. A range of management factors are also relevant, including time to initial detection of a wildfire, the condition of the road and track network, the nearest fire crew, aircraft availability and firefighter fitness levels

6 Mild Fire Conservation or Wild Fire Catastrophe, Jim Commins, 1997

the late James A. Commins
Special Projects Officer, and President, MCAV

Jim Commins, a former President of the Mountain Cattlemens Association of Victoria, forlornly predicted a new round of holocaust wildfires because of inadequate fuel reduction, the removal of patchwork burning and the reduced numbers of cattle grazing the bush runs at lower altitudes and the high country. Many of Jim's dire predictions have come true.

The heading 'Hellfire' beside a photograph of John Longstaff's 1898 painting depicting bushfire horror, and the question 'Can we ever stop the bush from burning?' in the Saturday Age News Extra on 6 December 1997 encapsulates a dilemma born from many decades of environmental mismanagement.

A greater risk than ever now exists for the most calamitous bushfires in recorded history if this summer happens to become one with frequent hot dry winds interspersed with thunderstorms that produce little or no rain.

Until there is less reliance on costly modern machinery, that is quite ineffective for suppressing the front of a wild fire in adverse conditions, and there are directional changes towards more safely and diligently applying the practice of using mild fire to prevent very extensive wild fire, the damage to natural assets and valuable property will increase. There is now a huge accumulation of flammable litter over a vast area where forest workers fear it will burn too fiercely, even in the cooler months of the year.

About thirty years after the first white colonists occupied the Port Phillip Settlement, the Western district and the Omeo plains, the Victorian Government enacted legislation to make most of the land which was suitable for closer settlement available for selection. Early maps of the state showed these selected areas and all the remaining land was marked as 'Pastoral land'.

The Eastern section of that pastoral land amounted to about four million hectares and extended to the Northern and Southern aspects of the Great Dividing Range, bounded by the Eastern seaboard and the New South Wales boundary.

During the first 100 years of the European occupation of this large area only two roads were put through it - to connect settlements in the North East and South East of the state, and one to the Monaro district of New South Wales.

Until the post World War II period, almost the only human presence in this most extensive area were cattle graziers, although during the latter years of the 19th century itinerant gold prospectors would have searched most of the area.

The Crown land allotments of pastoral land were let by grazing licence, and over the years some hundreds of runholders did occupy and manage them for cattle grazing.

In the early 1900s, graziers holding Crown land leases burned parts of their lease holdings each year as they believed appropriate. The graziers were following the practice of the Aboriginal people by using fire to keep the forests open. Reports from early settlers and explorers described the Australian bush as being similar to the open parkland of the English countryside. There is no evidence of regular Aboriginal habitation, except along the eastern coast, although it is recorded that native tribes hunted through the mountains in the summer months. Most of their frequent campsites would have been near lakes and rivers where farms and towns now are. Their propensity to light and maintain fires in all seasons soon found them being discouraged from camping anywhere near the homesteads and farm improvements of pioneer white settlers.

In the years prior to 1959, smoke was often seen rising from the forests in any season of the year except winter. Naturally ignited fires burnt unattended except when farmland was imminently threatened. Cattlemen burnt many patches when their experience indicated that it was appropriate to do so. Where cattle grazed the regrowth annually following a burn, the fire retardant effect of fuel reduction was prolonged for some years more than it would have been without the cattle. Practical graziers knew that very hot fires from a heavy fuel base were counter-productive because they promoted the regeneration of thickets of tree seedlings and woody shrubs which overwhelmed the pasture species for many years.

In the first quarter of this twentieth century expressions of concern about forest fires were raised when many people were then more familiar with the environment of Europe, while the harsh Australian climate was foreign to them and not well understood.

Unfortunately decision-makers must have relied more on dubious theory than practical facts to devise management plans which eventually produced disastrous results in Victorian forests. Many runholders felt overwhelmed by management regulations and abandoned their runs.

Areas suitable for timber production were delineated as reserved forests and in 1919 the Forest Commission of Victoria was established to supervise timber harvesting and to police a new policy that outlawed all the firefighting on Crown lands. This was seen as a complete folly by the relatively few people with 'hands on' experience, but their warnings went unheeded.

The ban did cause some graziers, particularly in the west of the region, to abandon their grazing leases as they considered that these areas were not worth persevering with unless they were periodically subjected to patchwork style burning.

During the two decades prior to World War II, the only major timber harvesting and sawmilling industry was to the east of Melbourne and extending to the Erica and Noojee districts. It was over this region that the Forest Commission exercised its responsibility. Further to the east, before the days of aerial surveillance and watch tower management remained the same and cattlemen continued their fuel reduction burning as they always had. They were doing as the Aborigines had done for untold centuries before them.

Following the dry season in 1938 (very similar to the 1997 experience) and the continuing drought conditions in January 1939, disaster struck as wildfire swept through most of the forests at Eastern Victoria. The forest resource where major timber-harvesting was in progress was destroyed, as were sawmills, and more than seventy lives were lost. Continuous fire burnt through to Mount Kosciusko in New South Wales and beyond, and it swept over drought-parched bare paddocks into the town of Omeo, where the hospital, a three story hotel, the power station and many houses were burnt. It was a

more extensive and devastating conflagration than the well-remembered Ash Wednesday fires of 1983. The sun was blanketed with smoke and in much of East Gippsland it became completely dark about 3 p.m. on 13 January 1939, and lamps had to be lit to see anything for about an hour in many places.

The most appalling losses were where control of the forests and timber harvesting had been exercised by the Forest Commission for twenty years and it was practically all a total loss. It is a very significant fact that further to the east, where cattlemen had effectively reduced much of the fuel, the destruction of commercially valuable forest was very much less. It is also interesting that during the terrible fires of 1939, graziers (including the writer of this article) were able to shelter in grazed areas which had previously been burnt in defiance of government policy, and these sanctuaries were also shared by native animals and birds.

In the eastern forests, where extreme drought prevailed some large patches of snowgums with thin bark were killed, but only relatively small amounts of alpine ash with the more protective bark were destroyed.

It is especially notable that sawmillers were able to relocate to the Mansfield, Heyfield, Omeo and Orbost areas fifty years ago, where they have operated ever since, and continue to do so on sustainable yield basis.

Widespread public concern led to the establishment of two Royal Commission enquiries - one to establish the cause of the fires and the other to examine forest grazing. These were presided over by Judge Leonard Stretton and he delivered reports in 1944, in verbose language that did not mention important aspects. The report placed the blame for the fires on cattlemen, miners, timber workers and indeed all those who lived and/or worked in the bush; although the cattlemen became the main focus.

Lightning was only mentioned once, and in the context that it was a 'rare occurrence' and unlikely to cause fire. It was assumed that the cattlemen were the principal initiators of wildfire. Lightning did and always will cause forest fires and ignorance of its role contributed to a policy that banned fuel reduction burning and failed to protect the forests.

The enquiry was held in a past era when communications through the mountains were virtually non-existent, the frequency of lightning strikes was virtually unknown, and a common presumption prevailed, as Judge Stretton boldly proclaimed, 'The fires were lit by the hand of man!'

Individual cattlemen presented evidence to the enquiry, but were not organised as a group in order to mount a defence of the situation in which they found themselves. The presiding Judge conferred little credibility on them. In dealing with soil erosion and response to cattlemen's explanations that uncontrollable rabbits were responsible, he trivialised this concept as he 'supposed Brer Rabbit would have blamed Brer Fox'.

The findings of the Royal Commission enquiries brought much pressure to bear upon cattlemen who practised forest grazing. They provided impetus to continue misguided policy and also made an effective launching pad for the emerging environmental movement to attack grazing and forest enterprises. It is now widely known that lightning ignites a great many fires and in a drought year when little or no rain may fall with a thunder storm, there is every likelihood of many fires being started and not being extinguished by rain. There can be no doubt that just such a chain of dry thunderstorms led to such a widespread inferno as Black Friday on 13 January 1939. Common sense

should have indicated that no grazier is likely to try and burn his pasture and chance losing livestock when drought and dangerous fire risk conditions prevail.

Over the last fifty years, cattlemen have observed profound changes in Crown lands management, and in the condition of the mountain environment. Very large areas of forested land have not been touched by fire for over fifty years. These could suffer enormous damage if subjected to the not unlikely sequence of drought, north wind, fire, then flood. There has been some fuel reduction burning in places, but this has been very inadequate, with very long periods between attempts to burn.

If a widespread outbreak of fire should occur, the only reliable safe havens for wildlife, humans and livestock in much of the mountain areas, are in new growth areas where significant numbers of cattle are returned to graze for a few months each year, or in recent logging coups.

Even in times of severe drought, when these grazed areas in the mountains might support a fire through them, it is extremely unlikely that there would be sufficient fuel at ground level to maintain a dangerous fire. Certainly not enough for a deadly 'treetops' inferno where fire rages from the floor of the forest up to the tops of the trees, where the pre-heated eucalyptus leaves have become highly inflammable.

There have been occasions when students of nature have questioned entrenched policy, but their work has usually been submerged in academic controversy. An American author, Stephen Pyne, investigated Australian environmental research and wrote a very informative book entitled *The Burning Bush*, in which he very comprehensively reported on the conflict of ideas about fire that had been like a tug of war between researchers on the subject. In another book, entitled *The Future Eaters*, archaeologist and author Dr Tim Flannery explained how the Australian natural biota became thoroughly attuned to fire since the demise of large prehistoric animals, and how the severity of wildfire was reduced only after Aborigines came and adopted their well-known habit of lighting and keeping fires alight at all possible times. Dr Flannery has pointed out that, unlike other continents of the world, Australia has for aeons of time not had the mega fauna to complement the effects of fire and effect a more balanced ecological development. He did not say that cattle might fill that role, but it is quite logical that they can. The Victorian practice of part-time or seasonal grazing with cattle ensures that no vegetation is eaten to extinction, while the annual trimming of dominant grass and many shrubs helps to maintain a wide diversity of vegetation. Unless in a stockyard situation, cattle do not cause bare ground, in Victorian bushland grazing conditions, as several academic researchers have set out to try and prove.

Most of our rapidly concluding twentieth century has been clouded by misguided fire policy. However, more recently, half-hearted fire prevention management has been a move in the right direction.

This year of 1997 has been one of, perhaps, record low rainfall and the threat of forest fires becomes increasingly more dangerous as the dry seasonal conditions remain.

I suggest that the highest priority effort should be applied along the following lines as soon as possible to reduce the fire hazard and environmental imbalance that has been increasing with very little impediment for many years.

- Establish burnt fire breaks then set alight areas of limited size that will burn with low or moderate intensity to that which has already been burnt.

- As more fuel reduction burning is achieved lightning fires should be recognised for their peril and value and should be allowed to make a natural contribution to fuel reduction.
- The grazing of animals perfectly complement fire by keeping regrowth in check. Domestic cattle can be managed to make many areas safe havens for man and beast.
- Public relation exercises should aim to inform people of the urgent need to address the dangerous condition of forest and educate them to understand and accept that accumulated forest litter and senescent pasture species must be reduced. This will protect native plants and animals as they have an intrinsic capacity to survive low or moderate fire but are devastated by holocaust wildfire.

Let us hope that common sense will demand effective programming of mild-fire conservation before another major catastrophe by wild fire occurs.

7 Seven Decades of Planned Mismanagement - Jim Commins

The bushland environment of South East Australia is probably in greater risk of the most severe damage than during the past thousand years or more.

This paper very briefly outlines the historical background, the public controversy and the present position of land management of undeveloped Crown lands. Its purpose is to draw attention to the now largely unused resource potential and the benefits for flora and fauna that could accrue from well managed operations.

These combined benefits could make a very worthwhile contribution to sustainable siviculture, pastoral pursuits and the overall environmental protection over a very large region of South Eastern Australia.

There is wide scope to establish studies that, if truly and conscientiously researched and then publicised would dispel many of the incorrect notions that are advanced by unproven and over zealous "green" propaganda that has been most damaging.

Most of the Eastern forests of Victoria and the Snowy Mountains region of New South Wales were used for grazing cattle from the early days of European settlement. It was during the latter half of the 19th century and early 20th century that the most widespread pastoralism was practised.

In Victoria this coincided with the result Parliament invoking Land Acts that made most of the accessible areas suitable for improved farmland available for selection. These allotments of land were available to almost any person with the strength and ambition to develop a farm that they could be proud of and might ultimately give them economic independence. The remaining vast area that was not classified for selection was marked on maps as pastoral land before the delineation of natural hardwood forests for timber production in some areas.

Grazing licences were issued for extensive areas of bushlands that usually ranged in blocks of from ten to twenty thousand acres (4000 to 9000 hectares) and ranged from coastal plains in the East to the remote and often rugged mountain allotments along the Great Dividing Range.

In Victoria the pastoral resource was predominately utilised by cattle and to a minor degree by horses and sheep. Most sheep grazing was where sheep could be turned out adjacent to farmland and there were only several occasions many years ago when large flocks were taken to the Bogong High Plains for short summer periods. The number of animals involved and the environmental effects of them have often been greatly exaggerated by anti-grazing lobbyists. Before the days of motor transport, horses were bred and raised on a few of the mountain runs and their descendants are the numerous brumbies that remain in the Eastern mountains of Victoria and South East New South Wales.

Until the advent of mechanical earthmoving machinery very few roads penetrated and crossed the mountainous between immediately east of Melbourne in Victoria to Canberra in New South Wales. No people other than the former aboriginals ever regularly travelled widely in the remote bushlands as the cattlemen did and these intrepid pioneers learned to understand the causes and effects of various activities there better than all others.

Most pioneering farmers and graziers who confined their activities to developing and improving pasture land by the age old system of clearing land and fencing it rarely ventured far into the unimproved wilderness. They were conscious of the risk of becoming lost much more than most people would be today. They also had a well founded fear of fire in the dry months of the year.

The aboriginal people who had no easy way of creating fire, in all probability, were very careful to maintain fire at all times if possible, regardless of how hot and dry the weather was. Thus it is no wonder that they were persuaded to go and camp somewhere else and certainly not upwind of farming settlers pastoral and structural improvements.

Newcomers to this hot and dry land, with the safety of their lives and property at risk, were soon imbued with the dread and risk of fire.

Graziers who utilised the pastoral resources of the natural bushland with no thought of clearing native vegetation soon learned two things by observing the practices of the indigenous people. Firstly that a low intensity fire guarded against the severity of an intense wildfire that would be damaging because it would very much upset the ecological balance. No cattleman welcomes the drastic change from mixed and balanced vegetation to an almost mono-culture of eucalyptus regrowth or other shading species. The second benefit was that a greater diversity of vegetation species was maintained and the welfare of all grazing animals was enhanced.

Unfortunately the bush graziers practice of raising smoke from their patchwork method of burning raised very serious misconceptions, many of which persist to this day. These misapprehensions extended from the fire conscious farmers to city based theorists, and some of the latter became the vanguard of the present day 'green' movement.

It is significant that there appears to be no record of farm property being destroyed by the escape of graziers patchwork fires until they (the graziers) were blamed in the report from the infamous Royal Commission in 1944 to examine forest grazing. That prestigious enquiry totally disregarded the likelihood of fire by lightning strike during the drought summer of 1938-39 and its inadequate findings can only be regarded as either a scandalous cover-up of administrative failure or ignorance on the part of influential government officials. Given drought conditions and hot, windy weather property and wildlife will be more in jeopardy now from wildfire than ever in the past for many thousands of years. Officials now know the danger of a chain of lightning strikes and that was most likely to have initiated the 1939 conflagration when such a huge distance was burnt over in several days. The word lightning was used only once in the Royal Commission Report in one line that acknowledged 'the rare occurrence of fire by natural causes such as lightning.'

In the Autumn of 1998 fuel reduction was being conducted in mild autumn weather and the smoke was sufficient to obscure vision beyond much distance all over much of Gippsland - one as to ponder upon how dense the smoke would be if the forest floor then burning was alight during hot and windy weather in a very dry mid summer.

Observers of the present situation would suggest that within management circles there is much greater emphasis and deployment of financial resources to fire suppression than to minimising the effects of wildfire. There appears to be much more publicity, glamour exposure, and almost limitless money for more equipment and manpower than might be even dreamed of for the more mundane tasks of wildfire prevention and limitation. The present fire managers must consider so themselves 'Would I be better off dealing with preventative burning or wild fire suppression?'

Students of Australia's origin agree that all the natural eco-systems of the country were conditioned by fire for long ages of time before the first human occupation and those fires must have been ignited by lightning. The only land based animals other than birds were marsupials and reptiles and dry seasons and droughts must have also been an ongoing feature. Kangaroos provide evidence of this by the fact that they have evolved to survive such difficult seasonal conditions being able to postpone the birth of their offspring in embryo form until suitable pasture is available. The first human inhabitants learned to create fire by rubbing two pieces of dry wood together. How they must have welcomed any lightning fire while their fire sticks were damp. There can be no doubt that they felt more secure and comfortable if they always managed to keep a fire alight both day and night regardless of the season or weather.

Then considering protection of the natural environment more regard should be taken of the historical events that have occurred in Victoria since the establishment of the Port Phillip settlement in 1835. By 1851 the natives had been severely restricted in their fire lighting habits and the first major holocaust in the time of the new settlement swept over more than half of the recently formed state of Victoria. There is little evidence of the effects of that fire in the eastern forests but much of the forest that has sustained the sawmilling industry during the past fifty years appears to be even aged growth. It may well be that much of it has developed from regrowth in the wake of that most extensive fire in 1851.

In a paper presented by Alfred Howitt to the Royal Society in 1890 entitled *The Influence of Settlement on the Eucalyptus Forests of East Gippsland* he commented on how many localities in Gippsland had become overgrown with young forest since the more or less regular burning by aborigines had ceased. About 1863/64 he observed that many red gums were dying on the plains between Bairnsdale, Maffra and Stratford and expressed a strong belief that insects (*Urubra lugens*) were the principal cause because their population had been insufficiently checked by fire every few years. In other parts of Gippsland he noted a very large increase in the number of young eucalypt trees. During the time of Alfred Howitt areas within the forests of East Gippsland had become much more populated. Following the discovery of gold about 1851 prospectors scoured the country and many gold digging settlements were established that lasted until early in the 20th century. After the gold rushes much of the pastoral runs that had been held on grazing licences were, by Acts of Parliament, thrown open for selection and a rush to occupy blocks of farmland took place. It was from this time that a much increased interest was taken in acquiring the broad acre grazing runs that were available on the land that was not suited for farm selection.

By the end of the 19th century interest was also being taken in the potential for timber harvesting and areas were being planned for reserves of forest for timber harvesting. This was also about the time that conflict of opinion between local knowledge and remote theorists began to emerge and it has been unfortunate that the voice of practical experience has not, with very few notable exceptions, been trained to make confident public announcements whereas the distant self styled experts have had no such inhibitions.

It was during this early part of the 20th century that the pastoral industry on both freehold and Crown land alike suffered massive degradation and a consequent set-back in productivity as a result of the rabbit invasion. For half a century and more these creatures had a far more devastating effect upon natural eco-systems and as an agent of soil erosion than all the domestic grazing animals ever had before or since that period of dominance by these vermin. For landowners to survive financially during that period time (and many did not) they had to try and maintain sufficient of their flocks and herds alongside hordes of rabbits. Landowners explained this when giving evidence to the Royal

Commission Enquiry into Forest Grazing in 1944. Evidently they were not accorded much credibility as the judge in his report when commenting on this wrote flippantly ... 'and I suppose Brer Rabbit would have blamed Brer Fox'!!

In 1952 rabbits were quickly decimated by the introduction of myxomatosis and much of the pasture under open forest had been denuded after many years of continuous heavy grazing. This allowed a dense growth of tall woody unpalatable shrubs such as ti-tree, doqwood, grevilleas etc. to establish and dominate the forest understory and shade out much of the grass and small wildflower shrubs.

Since that time the announced intentions to conduct fuel reduction burning have fallen far behind scheduled plans and a very large area of the eastern forests have not known any fire for five or six decades. The net result of this is that present grazing capability is much less than it once was and the result is that much of the grazing wildlife and predators have relocated to the perimeter of improved farm land, where often there is easy access to improved pasture. It comes as no surprise that attacks by native dogs on livestock are now more prevalent on adjacent farm land and are proving to be more troublesome than they ever previously have been. This is simply because so much of the interior bush land has become unattractive to grazing animals. At the same time the fire danger during hot, dry and windy weather has increased enormously.

The Victorian Forest Commission was established in 1919 and subsequently a special school was established at Creswick in western Victoria to train cadet foresters. Graduates from this school gained practical experience as junior foresters and some of them succeeded in working their way up in the service to become senior administrators. For three decades from the inception of the Forest Commission, the ruling commissioners did not appear to have sufficient practical knowledge to balance their flawed theory that a fire free natural eco-system could be achieved in Australia.

Matters became more complicated when the Government portfolios of Conservation, Forests and lands became combined. There was clearly jealousy amongst the chiefs but it soon became evident that university trained Department of Conservation staff gained ascendancy and divisions of opinion on conducting forest management continued. The net result has been a decline in safety from wildfire in the forests and pressure has greatly increased on the well being and diversity of all flora and fauna. A well written and comprehensive exposition of the divisions and controversy within administrative circles was published several years ago by a visiting American author, Stephen Pyne, in a book entitled *The Burning Bush*.

The parameters of the few studies used to make judgements on cattle grazing in the eastern ranges have been far too narrow and too often management decisions have been based on unproven and very doubtful assumptions. Unfortunately these have been presented with the imprimatur of scientific fact.

There should be carefully monitored research to examine the combined effects of managed fire and seasonal or intermittent cattle grazing in the widely diverse environmental conditions that exist in the eastern forest region of Victoria.

One of the more questionable theses in recent years was that by Dr R.J. Williams entitled *Vegetative Changes in Heathland and Grassland Communities in Sub-Alpine Tract of the Bogong High Plains*.

This thesis was publicised from a Melbourne University press release in September 1986 and was eagerly applauded. The study purported to show why woody shrubs are increasing to become an almost impenetrable thicket over a large area and to show what effect cattle grazing had in respect to

this. To achieve this small exclusion plots were established to show the content and composition of regrowth after the ground in them had been mechanically denuded of all vegetation. These plots were one metre square and surrounded by several strands of barbed wire, supported by star posts at each corner to prevent cattle grazing on them. Regrowth was recorded and compared with the adjacent land supporting a range of mixed species of predominately grass land and tall woody shrubs. The grass land was generally overgrown with much senescent material.

Woody shrub varieties appeared to completely dominate regrowth on the plots and despite the fact that numerous hares had free access to eat any young vegetation that they favoured, and that they left many excreta pills upon the barred ground, a conclusion was concocted to denigrate cattle grazing. The presence of the hares upon the plots was completely ignored. Another short coming of the study was that the effects that fire might have were not discussed.

While there has been no fuel reduction fire on the Bogong High Plains for more than sixty years, it is very presumptuous to believe that that area could be exempt from the effects of fire any more than any other part of Australia might be.

It may well be, and some who should know would say a certainty, that the preponderance of shrub growth would be corrected to a much more diverse range of vegetation if moderate fire was used there as a management tool.

In the late 1980s the Mountain Cattlemen's Association of Victoria moved to finance and establish trials for research into forest grazing and hoped that the Meat Research Corporation arm of the Australian Meat and Livestock Corporation would take an interest by at least examining the issues and the potential of the resource, but a tentative enquiry to senior officials of that body suggesting such studies met with discouragement.

Half the funds to support the Meat Research Corporation budget, which was running at up to fifty million dollars annually was provided by growers and processors contributions and half from the Federal government. Cattle grazing on the Crown lands of South East Australia has been the subject of political controversy, and despite the massive producer contribution, staff members of the MRC appeared decidedly nervous at the thought of examining the situation. Surely there is something lacking when an organisation that was set up for the meat industry, and is so strongly self supporting, could be so easily turned off by some perceived political climate.

The years have rolled on since the representation was made to the MRC and during the past decade or so evidence of forest mismanagement has been raised following very devastating and extensive wildfires in National Parks both here and abroad. Some examples are the Yellowstone burn out in USA, the Royal and Byadbo fires in NSW National Parks and more recently the Caledonia fire in the Victorian Alpine National Park. During the Northern hemisphere summer of 2000 much of the western mountain areas of USA are or have been burning mostly out of control. Burning through most, if not all, western states from Montana near Canada in the north to Arizona by Mexico in the south. There is ever increasing risk that sooner or later the same sort of catastrophic conflagration will happen in the bushlands of Victoria and the south east of New South Wales.

It appears as the years pass by that the taxpayer contribution to fire management and wildfire control is continually rising and at the same time the fire hazard on National Parks and other public land is ever increasing.

For far too long we have, in many ways, slavishly followed what is done in the United States of America, and not the least of those is the matter of what is done regarding fire management on public land. Anyone who has travelled through the western states of America and bothered to observe the natural environment there would not be surprised to hear of the widespread wildfire that has devastated vast areas of forest during their summer of the year 2000.

When eventually a similar degree of wildfire occurs here there will be enquiries and recrimination to follow. It is a matter transcending State borders and would be of Federal interest.

I believe that a Senate enquiry should be established to take evidence and ideas from which an original Australia fire management system might develop to protect life and property before an all consuming and costly inferno forces change.

8 Submission by Jack Hicks to the COAG Inquiry following the 2003 Bushfires

I am a farmer living at Dederang a Mountain Cattlemen running cattle on the Bogong High Plains and the captain of the Dederang Fire Brigade.

I was actively involved in the fire fighting campaign from start to finish.

I have made a list of the more serious problems we had during the fires.

They are as follows.

1. Initial attack on the lightning strikes on the 8th of January was too slow.
2. Access tracks: Largely had not been kept open.
3. Equipment: Bulldozers with lights & fuel trailers suitable for fire fighting were not available. Aircraft sat on the ground too much in the early parts of the fires.
4. Water supplies: were not adequate because of the lack of maintenance.
5. Containment lines & back burns: were not carried out correctly. These incorrect techniques were putting lives & property at risk
6. CFA Strike teams: were not utilised properly in a lot of cases.
7. Incident control centres: were too big & lacked local experience in the initial stage of the fires. Radio communication was not good. Parks Vic Staff should not be incident controllers.
8. Local knowledge: was not used enough early on.
9. Fuel Reduction: had not been done properly prior to the fires.
10. Litigation: Some Fire Crews were not performing their duties properly in fear of litigation.

The following is my response to these problems.

1. Initial Attack:

- All Wild Fires must be attacked immediately by the best and safest means available on the day.
- A control centre must be set up for each fire.
- Local people should be consulted at all times.
- Each fire must be managed on its own merits.

2. Access Tracks:

- All fire access tracks must be open before the start of the declared fire restriction season.
- Summer fire crews using chainsaws bulldozers & graders must carry out this work for training and familiarisation of the area they will be working in for the fire season.

3. Equipment:

- Each District or area must have adequate equipment to safely protect the community along with its assets & public land.
- This equipment must include Bulldozers with Lights, Fuel Trailers & Transport to carry them to the fire.
- Crews need hand tools & quick attack units to go straight to the fire.

- Aerial attack is needed on standby 24hrs a day in each area to spot fires, water bomb & back up ground crews when needed.
- 4. Water Sources:**
- Must be maintained at all times. Wherever possible build new storages eg dams, tanks or quick fill access points along streams.
- 5. Containment Lines& Back Burning:**
- Containment lines must be used wherever possible to stop fire. They can be existing roads or be constructed by bulldozers etc.
 - Back burning must be done as soon as possible it should be lit along the containment line first and let suck or run back into the fire front. By using this method the safety of the fire crews is guaranteed.
- 6. CFA Strike Teams:**
- Strike teams must be got onto the fire lines as soon as possible.
 - Local CFA tankers & crews should not be part of a strike team.
 - Strike team leaders should not be part of the fire management team.
 - Strike team leaders must be responsible for the safety and welfare of the team.
 - Strike teams should change shifts on the fire line at all times if possible
- 7. Incident Control Centres:**
- An incident control centre must not get too big.
 - It should cover no more than one fire or a district or a valley.
 - It must be headed by staff from the agency in charge of wild fire suppression in that area. Parks Vic staff should never be in charge of a fire.
 - It must have local knowledge in it.
 - One Radio Channel for each fire.
 - It should be set up at a suitable pre planned site.
- 8. Local Knowledge:**
- Should always be used in control centres to help with planning , With strike teams as guides, To assist bulldozer operators and many other jobs.
- 9. Fuel Reduction:**
- Fuel Reduction must be carried out on all land to prevent wild fire.
 - Also around towns and public places to save lives and assets.
 - Municipal Fire Prevention Committees are already formed in Victoria to deal with fire prevention planning. This public committees role should include, Inspection of all fire prone areas. Assist with the drawing up and implementing fuel Reduction Plans. Conduct Inspections after the fuel reduction burns to make sure they have been successful. If not put them back on top of the list for next season.

Methods of fuel reduction to include:

Autumn Burning.

- This work should be carried out before the fuel load reaches an unsafe level and at least on average once every 5 to 6 years for each area .
- Clearly depending on the timing of autumn breaks, safe autumn burning can take place from late February through to early June.
- Fuel Reduction Burning should be a joint operation between the relevant fire suppression agencies eg in Victoria CFA & DSE.
- Fuel reduction burning is a good means of training and must be encouraged.

Grazing

- Grazing is a very successful means of fuel reduction. This is very evident in the Victorian high Country where the cattle have been grazing for more than 150 years. Large areas (thousands of hectares) of the Bogong High Plains did not burn when the fire came up out of the scrub. Where fuel reduction had been carried out by grazing the fire literally, went out. If the wind or whether conditions did carry the fire across open grasslands the fire was only a cool burn just singeing the tops of the plants The Snow Gums & Bog Communities, have been saved by the cattle grazing around them. The birds and wild life are still there and alive.
- The Mt Nelse areas of the Bogong High Plains that have had cattle excluded from 12 yrs ago against the wishes of the cattlemen & sensible people, have burnt very hot and will never completely recover. The fire has burnt the plants right down into the roots. The heat of the fire has scorched the earth leaving it very prone to wind and water erosion. The cattle should never have been removed.
- Mt Buffalo is a very good example of a national park without a fuel reduction plan. Cattle were excluded some 75 yrs ago. 3 big wild fires in the last 30 years. This must not be allowed to happen any more.
- Cattle Grazing is the only means of fuel reduction for alpine grasslands.
- It will be very important to maintain grazing in the alpine high country that has been burnt. The regrowth of the plants in the grazed areas that have cool burnt will be prolific in the coming year. If this area is not kept fuel reduced it will burn again just like Mt Buffalo has.
- Grazing should be reintroduced back into all alpine areas to prevent future wild fire. Grazing should also be used as a means of fuel reduction in forests, along roads, on reserves and on other public land.

10. Litigation:

- Once a fire is going Occupational Health & Safety has no place on the fire ground. Common sense and good training must prevail at all times. The crews & equipment must be covered by a good insurance policy.

Signed: Jack Hicks

9 Submission by Harry Ryder to the COAG Inquiry following the 2003 Bushfires

Re: Inquiry Into 2002/2003 Victorian Bushfires

I make this submission to the inquiry as a person who has experienced the recent bushfires from a number of different perspective's.

As a landowner in the Kiewa Valley I experienced first hand the effects of the fires entering my land from both Crown Land and National Park. Approximately 400acres on my property was burnt including 4km of fencing.

As a Mountain Cattlemen I continue my family's tradition of grazing cattle on the Bogong High Plains. In this role I have witnessed over the years the unnatural levels of litter building up throughout the alpine and sub-alpine regions. The excessive growth of shrubs (middle story plants) has continued unabated for years and many of the tracks to the high plains have become so overgrown as to be a hazard, not only to the cattlemen and cattle, but to the general public using these tracks.

In my role as CFA volunteer, including six years as Captain of the Tawonga Fire Brigade (1993-1999), I not only fought the fires that threatened my property but went on duty as a volunteer to fight fires in the Mitta Valley.

When I was a child I remember hearing stories of cattlemen burning patches of bush as they moved cattle to and from their licences. This was an activity that history records as happening even before white settlement. Captain Cook called Australia 'this continent of smoke'; Tasman in 1642 recorded seeing smoke, Giles in his explorations of Central Australia recorded that the aborigines were forever burning the landscape and even Hume and Hovell on their way to Port Phillip made repeated references to the aborigines burning. Their diaries even record having to stop in the north east of Victoria for three days due to excessive smoke. And that was in December!

History also shows that most of the country seen by the early explorers was an open woodland. Cook described the Illawarra region of New South Wales as '...trees, quite free from underwood, appeared like plantations in a gentlemen's park.' Hovell in his diary entry of the 18th November, 1824 (in the vicinity of north east Victoria) records that 'The Country all around us has a very fine appearance, in some places there is not more then [than] half a Dozen trees in a hundred acres.' Comments similar to these appear throughout his (and Hume's) diary.

This then begs the question of whether the locking up of land in National Parks is actually 'saving' that very aspect that the park was established to supposedly protect. Certainly the change in the composition of the plant communities means that the Australian bush is radically different to that of yesteryear and pre-white settlement. In fact many high profile environmentalists and scientists repeatedly point to the changes in fuel loads and its effect on the bush. Most recently David Packham OAM has broached the subject of fuel loads in his submission to the inquiry. His comments on fuel loads and current fire management practices, I wholeheartedly endorse.

I have listed below a number of points that I was directly involved in, and affected by. I make the comments in good faith and are not to be taken as criticism of any one individual. I hope my submission goes some way to rectifying many of the problem's that arose during the fires and that the community as a whole will learn from its mistakes.

Submission to the Inquiry Into 2002/2003 Victorian Bushfires Issues/problems that arose during the combatting of the fires

Fire lines repeatedly being breached.

Fires should have been stopped inside the boundary's of the bush, whether crown land or national parks. Active fire lines must not be left unattended or fires will continue to jump containment lines.

Restrictions on backburning.

Restrictions placed on strike teams initiating backburns meant that opportunities to enhance control lines were missed. In the right circumstances (at night or early morning) trained firefighters can use backburning to great effectiveness. Treating volunteer fire fighters like idiots with these restrictions leads to an extreme sense of disillusionment and will lead to a reluctance to provide free labour to help fight fires on government land.

Work Times

Paid fire crews working bankers hours, arriving on the fireground at 11-00am with the intention of starting backburns etc through the hottest part of the day. Backburning etc. should be done at night and be blacked out and completed before the heat of the day, both for control and safety of firefighters. No firefighters have lost their lives fighting fires at night.

Crew changeovers being done away from the fireground.

There should be greater use of buses & 4WD's to transport crews from the staging area to the fireground so that all equipment remains in the area of the fire.

Excessive time being wasted at staging areas waiting for briefings etc.

With modern technology weather briefings and instructions could be done when crews change over on the fire ground.

Lack of communication

Communication between volunteers and Parks Victoria/DSE staff needs clarification. There were examples of end of shift debriefings not taking place as well as confusion over radio channels etc.

Local knowledge

Local knowledge was not sought in many instances and examples of when help was offered, it was often rejected to the detriment of the result. Persons from outside the area brought into ICC's cannot possibly know the little nuances of the district under their control.

I would suggest that every shift at an ICC have either a local DGO or fire brigade Captain of the CFA present to provide that local knowledge.

Existing fire trails not being maintained to allow safe access

Fire lines in timbered country should, where time permits, have more effort put into removing potentially troublesome trees with excavators, dozers or chainsaws before the fire arrives. This would minimise danger of working with half burnt trees during the fire. Many existing fire trails were not used during the bushfires because of the perceived view that putting staff into the bush placed the fire fighters lives at risk.

I would suggest that where the fire pattern is known, many of the fire trails could be used to good effect by commencing backburns (at night) from the trails. (This would also [in many cases] alleviate the need for fire containment lines being constructed on private land).

Lack of accountability throughout the command structure.

The name of the officer in charge at the ICC and at the fireground and the whole chain of command should be printed in the local newspaper or listed on the Internet every day so the general public knows who is responsible for what section, on what day, in order to foster a culture of accountability.

Recovery Support.

Agencies failing to accept responsibility

The 'passing the buck' attitude between government agencies made it difficult for any person affected by the fire to obtain information. At the time of the fire there was very little information available but by the end of the fire, landowner's were inundated by the various government and local government agencies with information. And all of it the same. Surely one information source is sufficient.

Immediate post fire assistance not made available.

Re-tensioning of all fences cut to allow machinery onto private land to construct fire control lines should be done as a matter of course or the landholders compensated.

Fuel reduction programs

Detailed fire reduction plans should be released each Spring and detailed actual post fire reduction results released in Winter.

The total inadequacy of fuel reduction throughout the forests and parks led to the inferno that we just had. A history lesson for the land managers would indicate that the land before white man arrived received regular burns of low intensity by aboriginals and not always in Autumn.

Burning a few dozen hectares here and there accompanied by numerous press releases is virtually useless and may as well not be done.

If a fuel reduction burn is commenced but not completed for any reason, then either a further attempt should be made, or that area becomes first priority in the following season. The public has the right to know what targets have been set by the government agencies and whether they have been met.

I would suggest that these details be published in the local newspaper each year.

Towns in areas adjoining parks and forests must be protected by regular fuel reduction programs

The local CFA volunteers should be allowed to carry out protective fuel reduction burns in zones in the forests around their towns.

Alienation of locals in the fuel reduction process leads to lingering bitterness.

There is a distinct feeling amongst rural people that they are excluded from the process of planning fuel reduction programs and that priorities of those making the decisions are very different from those of people who have to live in the affected areas.

Education of the general public and tourists to places adjoining National Parks and State Forests.

Effort needs to be directed at educating the general population to raise their awareness of the importance of the fuel reduction program being completed each year and the significance of its role in environmental management.

Fire control lines

Fire Line Construction

As I mentioned earlier, in many areas adjacent to private property fire trails exist although many are not well maintained. Fire control lines were put in on private land when the fire pattern was known and in many cases, well ahead of when the fire front was expected. This is inexcusable by DSE or Parks Victoria when they have pre-existing fire trails especially constructed for the purpose of fire fighting.

If it is deemed necessary to construct fire control lines on private property then may I suggest that the agencies concerned liaise directly with the landowner BEFORE they commence any works. Consideration must be given to the placement of the lines, the type of machinery used to construct the lines and any possible damage to structures (fences/watercourses etc).

Fire Line Rehabilitation

The fiasco that occurred in Northeast Victoria over the failure of Parks Victoria, DSE etc to do any rehabilitation of fire lines on private land was incomprehensible. Landholders who watched for weeks while fires burnt inside the National Park, were left wondering if they would still have a house left standing at the end of each day. Then at the end of the fires, these people were given the final kick in the guts by being told that the fire control lines that had been put through their private property to stop the fire coming out of the national park, were not going to be rehabilitated by the government agencies. 'They are the responsibility of the landholder' was the repeated response to repeated requests to have the control lines rehabilitated.

The constant 'passing the buck' attitude between the agencies did nothing to engender goodwill between the bureaucrats and landowners. The issue of the government having the ability to desecrate freehold land without being responsible for its actions and offering any recompense, needs urgent

attention. Malicious damage is a criminal offence - is cutting up freehold land to 'save' a national park malicious damage? Many landowners would say so.

I would suggest that before any further fires occur, guidelines on the construction and rehabilitation of fire lines on private property be developed so that all parties involved, are aware of their responsibility. This could be developed by the VFF in consultation with Parks Victoria, DSE and the CFA.

Assistance available to farmers affected

Fencing

The offer of half cost materials for dog proof fencing which had burnt in the fire was laughable if it wasn't so sad. Fencing between neighbours is on half cost basis, not 3/4 - 1/4. And dog proof fencing is great if you can fence all your boundary's. But what about the landholders who lost kilometres of fencing but do not need dog proof fencing or have neighbours that do not need dog proof fencing?

The Government must accept the status quo and realise that they are responsible for half cost fencing wherever their boundary adjoins freehold land.

As a landholder that has had 400 acres burnt, 4 km of fences burnt and about 5 km of fire control lines put through my property, I have not been eligible for any compensation that is practical to accept. Dog proof fencing was offered but has no value when most of my neighbours are either involved in horticulture or are rural residential allotments. Fence line clearing was also offered but not accepted - unless realistic clearing distances could be offered, then there is little value in doing the work.

Cattle grazing

As a holder of a licence to graze cattle on the Bogong High Plains in the Alpine National Park it is fascinating to observe how the alpine meadows that are grazed by cattle were the only areas of the Alpine National Park that did not burn. Over 4000 ha of alpine grassland were saved from fire because of the fuel reduction done by the grazing of cattle. Ungrazed areas were comprehensively decimated

The potential for increased cattle grazing to reduce fuel loads throughout the mountainous public lands needs to be considered given the present constraints on smoke caused by fuel reduction burning.

Harry Ryder

10 The history of grazing in the high country of Victoria

10.1 Grazing the High Country 1835-1935

The discovery of the high country of Victoria and its suitability as grazing land happened by chance. Graziers, in their attempts to traverse the mountains, and during expeditions to find suitable grazing land for their stock, discovered the grassy plains of the Victorian Alps. The first glimpse of high country in Victoria was made by Edmund Buckley from the Monaro district of New South Wales. Buckley discovered a treeless plain in the Omeo district, and although it was not strictly a high plain but rather an elevated basin 600m above sea, the discovery led the way for other graziers to explore surrounding high country.

Early graziers, wanting to avoid competition, kept quiet about the grassy plains. Hence, grazing and exploration of the high country were kept to a minimum until Gippsland was discovered in the 1850's. Between 1835 and 1837 George McKillop and Janus McFarlane, who had followed Edmund Buckley from the Monaro district, were the sole graziers of cattle around Omeo. Although attempts were being made to establish routes through the mountains, most were unsuccessful due to geographical constraints. In 1854 von Mueller observed no signs of either stock or humans in the Feathertop, Hotham and Cobungra regions. Yet, in the same year the Cobungra plains were discovered. Whilst Buffalo, Mt Buller and Mt Wellington were explored early, Bogong, Nunniong and Baw Baw, like the Cobungra plains, were not explored until the 1850's. Clearly, grazing was either very limited or absent over much of the high country in Victoria during the first twenty-five years after the initial discovery of the Omeo plains.

Government policy and management of grazing in the high country of Victoria has undergone many changes. Between the 1830's and the 1860's squatters could lay claim to large areas of the high country, and be granted guaranteed licences of fourteen years. In the period around 1860 to 1870 the larger runs were subdivided, and at the same time, some land was withdrawn from grazing due to selection for cultivation as outlined in the Land Act of 1869. The Land Act of 1884 then revoked all licences and enabled people to apply, or reapply, for grazing licences. Although there had been public concern regarding the majority hold of grazing licences by squatters, which contributed to the government's reassessment of the landholder, squatters continued to be the main applicants. During the years up to and including the early to mid-1900's, there was little control of periodic increases in stock numbers despite the licensing laws. The increases in stock numbers (including thousands of both sheep and cattle), came both from home properties and outside regions. Exploration and multiple-use of the high country and periodic increases in stock numbers have been due to factors such as the discovery of gold throughout the high country during the 1850's and 1860's, and periods of drought.

Gold discoveries within the high country of Victoria during the 1850's and 60's were the impetus for a surge of people to the high country and enhanced the expansion of grazing. There was an increase in the demand for meat to feed the mining population, and although the mining industry gradually declined, squatters began applying for grazing licences to supplement their incomes. The practice of mining within the high country forced graziers to move stock to higher plains, subsequently expanding the distribution of grazing. By the mid-1870's most of the accessible high country was licensed for grazing.

Periods of drought have also indirectly contributed to increased grazing on the high country in Victoria. During each of the drought events of 1884-85, 1902-3, and 1908 between 20,000 to 40,000

sheep were grazed on the Bogong and Mt Hotham High Plains. Private records of F.E. Whitehead from New South Wales detail the movement of 18,500 sheep, 80 horses and several hundred cattle during these three drought years.

There are few records of stock numbers grazed on the High Plains during the first century of grazing. However, it is known that stock numbers and the duration of grazing varied from year to year. T.M. Hamilton, a grazier from Ensay station, was licensed to graze stock on the Bogong High Plains. During the summer of 1885-86 Hamilton grazed 15% of his total stock (302 of his total stock of 2,000) from early December to late May. However, in the summer of 1895-96 Hamilton grazed only 10% of his total stock (380 out of his total stock of 3,800) for a limited period between February to late April.

Cattle were the primary grazers of the high country of Victoria until the 1900's. Whilst there is speculation that sheep from Ensay station were grazed on the High Plains during the 1870's, the earliest records of sheep grazing are on the Bogong High Plains during drought relief in the late 1800's and early 1900's. Sheep had not been grazed on the high country as the land was considered unsuitable for them. Sheep perished in early snow and after becoming caught in dense scrub. Regular grazing of sheep in the high country started in the early 1900's but was discontinued on the western high country by the early 1920's and on Bogong by 1945.

Horses have also been grazed on the high country of Victoria. Apart from the horses used by squatters for stock-work, horses were bred in the high country from the mid 1880's until the early 1900's to meet the demand for horses in India during World War 1. Osborne Young, a horse breeder, is known to have run between 300 to 600 horses on the Bogong High Plains. Like sheep, horses are not well suited to the unpredictable weather of the high country. Unlike cattle, horses move into higher country during bad weather, which inevitably leads them to their death. Horse breeding of the early years is no doubt responsible for the wild brumbies which live in the high country of Victoria today. (J. Commins, Ensay grazier. pers. comm).

10.2 Grazing the High Country 1935 - 1995

During the 1950's the government began withdrawing grazing from sections of the high country which they considered to be sensitive to the effects of cattle grazing. The highest peaks of Bogong were the first to be excluded. Since the 1950's, in conjunction with legislation of national parks, there has been further withdrawal of grazing from the high country. In 1949 the concept of establishing National Parks within the Victorian Alps was proposed by the Town and Country Planning Associations. The concept was legislated in 1979 following recommendations by the Land Conservation Council (LCC) to establish a number of National Parks and Reserves. Grazing has since been withdrawn from Mount Howitt in the early 1980's, from Howitt Plains and Wonnangatta Station in 1989, from the Avon Wilderness, Wabonga Plateau, Bluff areas, and an additional area north of Middle Creek and Rocky Valley Storage within the Bogong National park in 1991.

10.2.1 The 1980's

The Mountain Cattlemens Association of Victoria entered the 1980's as a small and dedicated group of cattlemen with a low public profile and a relatively small group of Associate members who had supported them over a number of years. The LCC report on the Alpine Study Area had been released the previous year, along with preliminary recommendations that threatened alpine grazing, and in the cattlemen's view, the future well-being of the Alps.

1980 - In January the Liberal Government accepted, with minor modifications, the final recommendations of the LCC report on the Alpine area. This heralded a decision to revoke 11 grazing licences by 1990, and was roundly condemned by the cattlemen.

In February the annual Get Together of the Association was held at Holme's Plain, north of Licola. Veteran cattleman, Norm Chester of Heyfield spoke, and it was obvious that extremist conservationists would not rest until cattlemen had been completely driven from the mountains. This was also the year that the two hallmark books on the cattlemen *Cattlemen and Huts of the High Plains* by Harry Stephenson and *Cattlemen of the High Country* by Tor Holth were published. Both were immensely successful.

1981 - The annual Get Together was held at Shannonvale, and filming of "The Man from Snowy River" commenced.

1982 - Pretty Valley was the site of the annual Get Together, and in New South Wales drought-stricken farmers drove their stock into the Kosciusko National Park, overgrown since grazing had been ended there.

In May the newly-elected Labor government directed the LCC to again examine their recommendations for the alpine area, given the party's policy of creating a large Alpine National Park.

1983 - The annual Get Together at Sheeppark Flat, hosted by the Mansfield Branch of the Association, saw the beginning of new, high profile campaign by the cattlemen, aware that the recommendations of the LCC Special Enquiry were hardly likely to be favourable. The MCAV logo, of three riders on a precipice, was launched, along with the slogan "Mountain Cattlemen care for the High Country". This was also the occasion of the first Cattlemen's Cup, sponsored by the film group involved in the making of "The Man from Snowy River".

In April Harm van Rees of the University of Melbourne announced the results of his three year study of the behaviour and diet of free-ranging cattle on the Bogong High Plains. This contained a number of positive findings for the cattlemen.

In June the proposed recommendations of the Alpine Area Special Investigation were released. They included phasing-out of alpine grazing in a number of areas, and the incorporation of large areas in a massive Alpine National Park. This was vigorously criticised by cattlemen concerned for the future of the Alps, and they invited the Minister then responsible - Rod McKenzie, to tour the Alps with them.

In August the government signalled its intentions of enquiring into lease rentals. In September a report recommended the removal of many huts on Crown Lands, a number of them built by cattlemen.

In November the final recommendations of the LCC Special Investigation were made available and despite 70.3% of the submissions being against the further extension of National Parks, a large Alpine Park was recommended. In December the MCAV conducted a large party of parliamentarians and officials on a tour of the Alps.

1984 - This was the year that our Olympians represented Australia wearing the oilskins and Akubras symbolic of the cattlemen.

In July the Liberal and National parties announced they would support a group of sixteen Shires that covered the alpine area in lobbying for no further extension to the Alpine National Parks. Despite this it was announced that the legislation would be introduced into parliament in the autumn session. Cattlemen then announced they would ride to Parliament House.

In September the MCAV and its supporters rode to Parliament in the largest mounted display on the streets of Melbourne since the Light Horse had left in World War 1. The number of supporters along the route expressed support for the cattlemen and in the following month a large meeting of supporters voted to support the MCAV as a lobby group.

1985 - The annual Get Together was held at Cobungra and the following month cattlemen rode through Melbourne again as part of the Moomba Parade. The Victorian State elections resulted in a tie in the Upper House. The Liberal party would hold the balance of power if it won the re-run of the by election for Nunawading Province.

In July the Minister for Conservation, Forests and Lands, the Hon Joan Kirner, travelled to Bennison Lookout north of Licola, to announce that the legislation for the new National Park would be introduced to Parliament that day, and that she expected to return to Bennison on the 1st December to proclaim the new Park. A small but effective protest by cattlemen put the opposing point of view.

The MCAV then made the decision to fight the proposed park, which became the main issue of the re-run election in Nunawading. This took the form of a letter box drop of the electorate, a mounted ride through the suburb reminiscent of the ride to Parliament House, and the handing out of "How to Vote" cards on election day. The election resulted in a win for the Liberal candidate, Rosemary Varty, and the balance of power in the Upper House going to the Liberal Party. Allegations of impropriety against the Labor party and another "How to Vote" card led to a determined campaign against the cattlemen in an attempt to throw up a smoke screen to hide the actions of certain members of the Labor Party. Graeme Stoney, the Executive Officer of MCAV was summonsed to the Bar of the Upper House to explain the activities of the cattlemen, but on the day a motion to have him speak failed, when the necessary numbers could not be found as division bells rang. The Parks bill was not brought on for debate, and remained on the Notice Paper - waiting.

1986 - February saw two Australian greats - Slim Dusty and R.M. Williams, together on stage in support of the cattlemen at the Get Together at Catherine Station. In Tasmania a version of the MCAV was formed to fight high country evictions proposed for that State.

In April the Alpine National Parks Bill was debated in the Upper House and defeated along party lines. It remained on the Notice Paper, waiting for re-submission.

In September the cattlemen were asked to take part in the Royal Show Parade through Melbourne. A number of cattlemen drove a mob of cattle through the City earning the blue ribbon for the best animal exhibit and providing a delightful sight for the thousands who will long remember the sight of a mob of Hereford cattle in front of Flinders Street Station.

1987 - At the annual Get Together at Sheeppyard Flat Movement at the Station, the Revolt of the Mountain Cattlemen by Bryan Jameson, the story of the enduring fight to keep grazing in the Alps, was launched by Professor Geoffrey Blainey.

In the middle of the year planning proposals for the Alpine Area were launched, as the government began to further regulate the area in an attempt to establish a de facto National Park by regulation. An Alpine Area Advisory Committee was formed to advise government on matters pertaining to the Alpine Park.

MCAV President Jim Commins represented the Association on this Committee.

1988 - Historic cattle property, Wonnangatta Station was purchased by the Government after advising a private purchaser that the high country leases which formed part of the Station, would not be renewed.

In August the MCAV received the inaugural R.M. Williams Outback Heritage Award in recognition of their contribution to the maintenance of the heritage of Australia.

1989 - In February a spectacular and emotional rally on the Bogong High Plains focussed the plight of eleven families due for eviction from their leases.

The Alpine National Park was proclaimed after certain concessions such as seven year licences were gained.

During the 1980's the Mountain Cattlemen became a household name in Victoria and around Australia.

1990's - One issue needing to be addressed is the maintenance, use and values of the huts within the alpine region. If some were to have their way, some of the huts would have been burned down some time ago. It is interesting to note that in the Kosciusko National Park it has been seen to be necessary for a separate organisation of volunteers, known as the Kosciusko Huts Association to maintain, restore and care for the huts within that Park.

Kosciusko National Park is, of course, cared for by the Victorian equivalent of the Department of Natural Resources and Environment. Some may say that this is obvious by the number of blackberry plants allowed to proliferate within the park which are spreading to the neighbouring farm land. With all this care it was found necessary for the formation of the Kosciusko Huts Association. It is unfortunate to see that the Victorian huts may be doomed unless a similar organisation is established here.

At the present time, Cattlemen engaged in their grazing endeavours, are entitled to first call on the hut they have traditionally used, and usually built. A problem is that with increased leisure time, and the increasing sophistication of 4WD vehicles, many inexperienced people are travelling far into the bush. A lack of knowledge of the traditions and heritage of the Mountain Cattlemen often leads to the huts being vandalised. Huts are often left in a filthy condition, and the log books kept in the huts for safety reasons (search and rescue) are often covered in graffiti.

Currently, the alpine region of Victoria is divided into four units (Wonnangatta/Moroka, Bogong, Dartmouth and Cobberas/Tingariny) each with a separate management plan. The planning units

comprise 90.2% National Park, 5.6% Wilderness Park, 2.7% Crown Land Reserve (Classified Historic Areas) 1.3% State Forest (to be added to the park on completion of timber harvesting) and 0.2% Crown Grant (to be added to the park after transfer from the former State Electricity Commission of Victoria). The Alpine National Park is the largest in the State with a total of 636,704 hectares. The four management plans, devised by the then Department of Conservation and Environment (now the Department of Natural Resources and Environment) were legislated in September 1992. The brief account given below of the events contributing to the current status of grazing in the high country of Victoria is taken from these management plans.

Mountain cattlemen of Victoria lease less than 2.4% of the total area within the alpine planning units. However, MCAV estimates that only 26% of the land leased is actually grazed by cattle, and therefore only 0.9% of the total area within the management planning units is was grazed by cattle in 1988. Since 1988 there have been further withdrawals of the land available for grazing, and hence the same calculations for 1996 would be reduced.

The number of cattle grazed on the high country of Victoria has changed considerably over time. Mountain cattlemen in Victoria have much tighter restrictions imposed upon them today when compared with earlier times. The maximum number of cattle permitted on the Bogong High Plains has been reduced from 9000 in 1949 to 3160 in 1996. It is important to note that despite the maximum stocking level of 9000 in 1949 and 1951, it is estimated that only 7030 and 7110 head of cattle were grazed in 1949 and 1951 respectively. These figures show that irrespective of more lenient controls in the past, the mountain cattlemen did not take full advantage of quotas specified by the government. The maximum number of cattle grazed within the Wonnangatta/Moroka management unit is 3600 head, in the Cobberas/Tingaringy management unit 1700 head and in the Dartmouth management unit 230 head.

11 Science and alpine grazing

At first glance, there appears to be a wide range of scientific evidence stacked against alpine grazing.

Some of the scientific papers have a long list of references. The list is less impressive when the repetitive nature of the work and the authors is taken into account.

In 2000, an independent panel established by the former Department of Natural Resources and Environment heard evidence from one of more prolific contributors to the scientific literature. The Panel found that it needed to take a "guarded" view of his evidence. The Panel put it this way.

"Though we have accepted various parts of Dr. Williams' evidence as is set out above and further we accept that Dr. Williams has impressive qualifications and has written widely in the field, nevertheless, the Panel does take a guarded view of his evidence bearing in mind his expressed opinion that the presence of domestic livestock is inconsistent with the basic objectives of national park management." (T.58). (Department of Natural Resources and Environment, Independent Panel on Alpine Grazing Licences, Mr Tony Graham QC, Chairman, Mr Neville Walsh, Mr Jim McColl, 2000.)

A submission opposing alpine grazing might appear impressive, but it needs to be considered whether it has been written specifically to undermine cattle grazing. The same arguments could be put against any land use in high altitude areas such as skiing, lodge construction, roads and walking tracks.

One submission, prepared by the Australian Academy of Science used a report on the condition of the high mountain catchments of New South Wales and Victoria that was prepared in 1957 and said that the "*issues, in terms of ecology ... have not changed*". The fact is that a lot has changed since those days and the area under consideration was not even high mountain catchments of NSW. There have been significant changes in management, stocking rates and areas grazed. Furthermore, there has been a recognition of the need for environmental sustainability and the Mountain Cattlemen's Association of Victoria has sought to introduce a cattle management plan in conjunction with Parks Victoria. Parks Victoria prevaricated over the draft plan and it is now clear that its real agenda was the removal of all cattle grazing.

The cattlemen think the views of some ecologists suffer from selective observation. You will always find an adverse impact if you look hard enough. An objective assessment would involve looking across the whole landscape, assessing damage and alteration and determining the cause. This assessment would include roads, tracks and carparks. The full picture is rarely discussed when issues like the adverse impact of ski resorts has been resolved simply by removing these sites from the Park.

The alpine ecology is a fertile place for myths. The myth about mossbeds highlights the discrepancy between what is promoted as science, and what is actually happening on the ground.

Opponents to alpine grazing launched a classic tactic of the ecological lobby groups. They mythologise a facet of the natural environment and then characterise any recreation or commercial activity as trashing this newly elevated aspect. This has been a highly successful component in the forest debate which mythologised old growth forests. This is spin and hype, not environmental science. In fact the mossbeds form an extremely small part of the Alpine area.

In any event the mossbeds are flourishing after 170 years of alpine grazing. Cattle do have an impact where they cross a stream or visit it to drink. But, if 170 years of grazing impacted so adversely on sphagnum mossbeds, surely they would not be as abundant, as they now are.

There are many mossbeds on private land, below the snowline, which are also flourishing and they are in paddocks grazed by cattle, for the whole year.

Alpine grazing opponents give the impression that there must be hundreds of acres of sphagnum mossbeds scattered across the high plains.

The Research Section of a Latrobe University publication (page 7, August 2004) reported that, "*The Alps are an important water catchment, providing up to eighty percent of stream flow in the Murray-Murrumbidgee catchment in drought years, and all this water passes through bogs.*" (Our emphasis)

Mossbeds are quite common across the high country both in the grazed high country and in the other 85% of the Alpine National Park that is not grazed by cattle. However they have always been found in small patches adding to much less than 1 % of the total area. Simple observation shows that much of the rain that falls in the high country enters streams without being filtered through a mossbed.

Alpine grazing opponents seem to think that mossbeds have a some sort of pre-ordained role in filtering and steadily releasing water to sustain lowland catchments. First, mossbeds are just plants. They have no role pre-ordained by some superior being. Sphagnum mossbeds colonise around springs discharging water where the flow rate is no more than a trickle and are usually found within the first twenty to thirty metres downstream of the spring. Once the flow rate increases in the little streams the sphagnum will not establish and is never found along the beds of bigger streams. This is a very important point as it means that the majority of rainfall that falls in the mountains is never going to be filtered through any sphagnum moss. This would have been the case prior to European settlement.

Following the 2003 Alpine National Park bushfires, the mossbeds in the ungrazed areas fared immensely worse than those where cattle had kept the surrounding vegetation trimmed short, thus offering the only form of protection available. Mossbeds in the ungrazed areas that were inevitably surrounded by a dry thatch of dead material ensured that the fire was lead right into the heart of the mossbeds.

This example of mythologising the mossbeds highlights the manner in which a thin veneer of observation is massaged to support a philosophical belief that is held with a significant degree of obsession.

The aftermath of the 2003 fires also illustrates that conventional Government sponsored science is not the sole source of reasonable analysis. The so-called Stretton Group of highly qualified scientists has come up with alternative analysis, causes, impacts and solutions. One side is not 100% correct and the other side not 100% wrong. There is legitimate dispute and an intelligent response is to resolve these differences. Our inability to do this probably stems from the now obsolete belief that science, being objective, is always correct. These days, science is just another input, it is not the supreme authority.

Nevertheless, the case presented by the cattlemen has been supported by scientists including Professor Peter Attiwill. It is noticeable that the work done by Harm Van Rees, Roger Oxley and Alan Wilson is never quoted by the opponents to alpine grazing because it does not support their views.

In many respects, the ecology of the high country is too complex to be explained by narrowly defined observation. It takes generations of experience to understand the various interactions and whether movements and changes are long and short term.

To have a valid opinion of the ecology of the high plains really requires the combined minds of scientists and cattlemen. While there is disagreement between the two, the only obvious conclusion is uncertainty, and the only obvious recommendation is a combination of minds.

12 An Overview of the Impact of Grazing on the Alpine and Subalpine Lands of Victoria: with Emphasis on Future Research Needs. AD Wilson

A.D. Wilson
Centre for Farm Planning and Land Management
University of Melbourne.

The alpine and subalpine lands of Victoria are prominent areas of the State, with value for many purposes including conservation, tourism, water catchment and grazing. Their conservation value lies in the relatively small areas of alpine land in Australia, and hence the relative uniqueness of its flora. The same unique values apply to tourist activities, such as skiing, sightseeing, trail riding and bush walking. The area is naturally attractive, because of its ruggedness and remoteness from settlement. Part of this attractiveness also lies in its heritage as an area used for cattle grazing in summer and "The Man from Snowy River" image that it evokes. The greatest benefit to Australia will arise from the multiple use of these lands, where the infrastructure and maintenance is shared by all users.

The proviso here is that the land and vegetation resources are not degraded and future uses not foreclosed. The objective is to maintain the land and vegetation resources in perpetuity. This means that cattle grazing has to be carefully managed. Limitations of grazing intensity and distribution will be required to satisfy both heritage grazing and conservation objectives.

This report presents an overview of the impact of grazing on the alpine and subalpine lands, with emphasis on the maintenance of these natural resource values and future research that is needed to guide such management. It follows directly from the review of grazing impact prepared by Oxley (1991) and therefore does not attempt to include all the reference material that is available. It has been arrived at after reading the major research papers on the topic and after visiting the Bogong High Plains research sites, The Bluff, Bryce's Plain and the Nunniong plateau in the company of Roger Oxley. It has been prepared for The Mountain Cattlemen's Association of Victoria, but represents my independent views.

General effect of cattle grazing

The general conclusion from several measured comparisons of exclosures and grazed areas is that cattle grazing has brought a number of changes to the composition of the vegetation of the open plateaus and flats of the alpine and subalpine lands of Victoria. Although there are few exclosures and the direction of changes are sometimes contradictory, the vegetation is usually 'different' inside to outside. There is more bare ground (but still not a large amount) and naturally there is always less weight or height to the foliage on the grazed side. There is also a common observation that there is less of the showy forbs such as the alpine snow daisy, that produce much of the wildflower displays, because these are selectively grazed by cattle. On the other hand, casual observations on the Nunniong Plateau suggest that forb cover may be enhanced at lower altitudes by moderate grazing.

These vegetation changes refer to the major species and are not related to the issue of species extinction (see below). At moderate grazing pressures there are still populations of even the preferentially grazed plants, with some simply reduced in stature by defoliation and others surviving in sheltered places. Alpine snow daisy, as an example, is still present after more than 100 years of grazing, despite being a preferred plant. The overall rate of utilization of herbage has not been

measured, but appears to be about 20% of the standing herbage. On the other hand there may well be one or two plants that are threatened by grazing. These are discussed below.

Grazing has also encouraged the introduction of some exotic plants, such as white clover. Records for the Bogong High Plain show exotic species to constitute 4 to 8% of the plant species present, depending on the vegetation type (McDougall 1982) but this overstates their impact, because the introduced plants are small and inconspicuous. None are classed as noxious weeds. The degree of replacement is probably greater in the subalpine flats, and less in the woodlands. The general conclusion is that these lands remain predominately natural, with about 95% of native species.

A further perspective on these changes in the composition, is that apart from the heath-grass balance discussed below, further change in composition has ceased. The grazed transects recorded by van Rees changed little over 5 years of observation and the Pretty Valley plots also changed little in grass and forb cover between 1947 and 1989. Clearly much of the observed change has occurred in the past, when grazing pressures were higher, and a new relatively stable composition has been reached.

Other parts of the landscape, notably the woodlands, have received little research attention, since it is perceived that they are little influenced by cattle grazing.

Balance of grasslands and heath.

Perhaps the most widespread change that has been recorded in some sites and observed more generally in others, is the gradual shift in the boundaries between the shrubby heathlands, grassy heath and *Poa* grasslands (snowgrass). The trend over the last 40 years has been towards a slow increase in the cover of heath shrubs. Many observers attribute this to the long-term effects of grazing, on the basis of observations that seedlings of these shrubs are only found in bare ground and the area of bare ground is increased by grazing from about 3% to about 7%. (In this context bare ground refers to the small patches of soil between tussocks with no cover of live or dead herbage.) The research done by Williams shows that shrub seedlings do establish when large bare areas are created in snowgrass. However, it is far from proven that grazing is the main cause of shrub encroachment in grazed areas. There has also been substantial shrub increase in ungrazed areas and in Williams' plots there was little shrub establishment within 10cm of the snowgrass edge. Most of the bare ground in grazed areas is in small patches of less than 10cm radius.

Since bare areas also arise from other causes than grazing (e.g. insect attack and fire), it is important to ask why the area is not dominated by heath shrubs in its natural state. Some areas are clearly too cold and exposed to support shrubs, but the areas that are now changing to heath must have been kept grassy by some other factor in the past. The theory for grassland dominance proposed in several research papers is that the shrubs have a finite life and will senesce and die in time from old age, if left undisturbed, leading to a return to snowgrass in the distant future. Shrub senescence has not yet occurred on any of the measured plots, so the theory remains speculative. Furthermore, there has been no discussion on alternative causes, for instance that heath encroachment may also be occurring simply by an increase in the size of existing plants, either because grazing pressure has been relaxed, or because of growth since the fires of earlier times.

It is worth discussing these other possible causes of shrub increase. The first possibility is that there has been a subtle shift in climate, with less exposure to frost and cold winds. A warmer environment, even of a few degrees, would allow an encroachment of heath shrubs, either by slow seedling establishment or sideways encroachment by layering, onto places that were previously too cold. If

climate change is occurring, as has been predicted by climate change experts, changes in the natural boundaries between woodlands, heathlands, grassy-heath and grasslands can be expected.

The more likely major reason for the change in shrub herbage balance is the natural succession of heath shrubs since the last fire. Fire incidence is low in the alpine and subalpine lands, with a frequency of less than once every 50 years at any one place. The natural frequency can only be guessed at, because of the short term of record keeping and the fire suppression policy in recent decades, but the area is thought to have all burnt in 1939 (Carr 1977). We do not know the frequency of fires before 1939 or before settlement, but we could expect a greater frequency than under the current fire suppression policy. Despite the low frequency of fire the effect is nonetheless significant because of the slow rate of recovery of heath shrubs in this cold climate. Fire kills some species directly and reduces others to ground level, so that shrub cover is sharply reduced after even a low intensity fire, as found in the research by Leigh and others at Kiandra. In comparison, snowgrass recovers quickly. A vegetation measured by cover will thus evidence a gradual increase in shrubs relative to grasses and forbs over many years without fire.

Such changes in the relative balance between heath shrubs and grasses, either between normally infrequent fires, or with a change in fire frequency brought about by fire suppression, are a world wide phenomenon of natural woodland and shrubland vegetations, examples are presented from other parts of Australia by Harrington and others (1984). Hot fires kill more shrubs than cold ones, but may also stimulate the germination of more hard seeded species. Some species resprout readily from the base, whilst others depend on re-establishment from seed (Hodgkinson and Griffin 1982). Hence we cannot at this stage predict how individual shrub species will respond to fire, but we can say that the effects will be significant and long-lasting.

In absence of further research we cannot determine the relative contribution of these factors: post fire succession, grazing induced bare ground and possibly climate change, to the increase in the cover of heath shrubs that has occurred over the last 40 years. Grazing may be a factor, but given the similar change in both grazed and ungrazed exclosures and on the basis of experience in other natural communities, post-fire succession is likely to be more significant. It is incorrect to blame grazing with more than a contributory role. The impact of post-fire succession, and fire itself, on the composition of heathlands and grassy heathlands, should be given more research attention in future. This will give a more balanced direction to research which in the past appears to have been driven by the desire to prove grazing as the only cause, rather than determining the contribution of all possible causes. The information is important, not only for understanding changes on grazed lands, but for managing those changes on grazed and ungrazed lands alike. Where cattle are retained, a more comprehensive understanding is required to aid management. Where cattle are excluded, the same understanding is required for management, since changes will still occur. The current fire exclusion policy could have significant implications for vegetation composition that are not presently understood.

Species diversity

An important objective for these lands is to maintain the natural diversity of plants and animals. In common usage the phrase 'species diversity' has several meanings. One meaning relates to the general number of species present at any site and in this sense the diversity has not changed. The abundance of some plants has decreased, but this has been balanced by an increase in the abundance of others. A measure of diversity that combined the number and species and their abundance would not register a difference between grazed and ungrazed. The overall naturalness, compared with other

more intensely used lands within the State, is one of the qualities that makes the region attractive for consideration as a reserve or National Park.

Another usage of the phrase 'species diversity' is in reference to rare plants. There are a number of rare plants on the high country and these must be given special consideration. Most of these will be rare simply because they grow in habitats of restricted distribution, with rarity unrelated to land use. However, a few of these plants are thought to be threatened by grazing and this has influenced decisions to withdraw some areas from use. The Australian National Parks and Wildlife book on rare and threatened plants (Briggs and Leigh 1988) lists about 8 species that are classified as vulnerable. This means that there is a risk of the plant disappearing over 20-50 years or that there are inadequate numbers of plants within reservations. A minimum of 1000 plants is considered adequate. The Bogong Management Plan lists about 8 species that are rare, and of these 3 are thought to be threatened by grazing and one by trampling.

Rarity by itself is not used as a reason for total grazing and fire exclusion. Some plant species will indeed be made rare by grazing, because of susceptibility to defoliation, and these need protection by enclosure. However other species, sometimes known as 'transient species' are made rare by the absence of the disturbances which encourage their presence. Moderate levels of disturbance can enhance species diversity (the number of species present in a given area of land) in a community by reducing competition from dominant plants (Grime 1973). Examples of these different requirements have been outlined by Lang and Kraehenbuehl (1989) for the Mallee country. Hence the requirements for managing a rare plant is species specific and may include a prescribed fire regime, moderate grazing, or grazing exclusion, as determined by each individual case. However in most cases these management needs are not known.

The classifications of rare and endangered species must inevitably be a value judgement, based on factors such as the total number of plants present, the number of sites where they are present or the area of distribution, and their response to disturbance. This information should be made more widely available, both to ensure that the classification is objective, and to gain public support and input for their management. It would also be desirable for land users, including cattlemen, to become conversant with these plants. They would then be in a position to locate new populations and where necessary to cooperate with DCE in the positive management of those populations.

Further research on rare plants is vital if their management is to be successful. This requires sampling by techniques such as species frequency (presence and absence in a large number of quadrats of a given size), that are more sensitive to sparse populations than cover. It also requires research on the impact of disturbance of grazing and fire on their populations, so that appropriate management can be instituted. Such research should include aspects such as intensity, frequency and timing of disturbance.

In one sense rare plants don't take much space. They are small and infrequent. However, in another sense they take up large areas because their special habitat requirements arise infrequently across the landscape. This is one of the reasons for needing reserves that are larger than the small enclosures presently available. Large unused areas become reference areas that allow a broader landscape-wide evaluation of species changes and represents an ideal for the conservation of all vegetation types. The MCAV should support this concept, which is now being put in place. The converse is that there is no need for all the land to be left ungrazed.

Perspective on vegetation change

The effects of post-fire succession, and of grazing, on the composition of the vegetation, should be kept in the perspective of vegetation change in general. The importance we place on these changes represent a value judgement, because there is no absolute standard. The composition of any vegetation is a moving target, with successional change arising from shrub age, climatic variation, climatic change and herbivore use, whether by introduced or native animals, and from the occasional fire. Ecologists no longer subscribe to the theory of a fixed 'climax' vegetation that remains stable in the absence of human disturbance. It is not therefore appropriate to select 1945, or even 1845 as a fixed point from which any change represents 'degradation'.

Similarly a difference between grazed and ungrazed areas doesn't necessarily mean an absolute change because the two states may both be found within the wide range of natural compositions that are possible between the sequences of natural disturbances. For instance, the closed heath and the grassland phases were both present in 1947, as they are today, except that the proportions of each are different now. Also the exclosed and the grazed areas are different in composition, but we cannot say that one is better than the other. The value we place in the various compositions is influenced by our uses for the land, whereby a herbaceous state is preferable for grazing and wildflowers are preferable for tourists. It is a matter of preference rather than of degradation. Vegetation change on its own (without extinction or erosion) should be classified simply as 'change' and not degradation as noted by Harrington and others (1984), despite the common tendency to do so in popular writings on land degradation.

Although the change in composition is not 'degradation' our preference in terms of present uses of the land is to limit the change from grassland to heathland. It is therefore desirable that we know why the change is occurring and that we seek to reduce its extent. The evidence from exclosures is that the removal of grazing will accelerate the change in the short term, and it is quite possible that the change will be permanent in the long-term, unless there is a return to a normal fire regime.

A further point of debate is our attitude to introduced plants. Australian botanists have in the past made a sharp distinction between native and introduced (i.e. post 1788) species. However, they are now beginning to consider these introductions in a wider perspective of time, in which many introduced species can be essentially classified as naturalized. They have become a part of the species diversity, and may in future receive no special classification unless they are undesirable. Thus we should continue to try to contain the spread of blackberry, but give no special attention to brome grass and white clover, which are not problems and cannot be controlled. Furthermore they will remain as elements of the vegetation whether the land is grazed or not. In this context, introduced plants in the alpine and subalpine lands are not an important issue.

Special sites

Apart from the general changes in vegetation discussed above, there are some localized impacts of concern. For instance grazing is thought to have greater impact on small local areas of snow pack and mossbed, by both grazing and trampling, than on the country as a whole. Observations of cattle behaviour (van Rees and Hutson 1983) have shown that they mostly avoid the mossbeds, but cattle do enter them in places to obtain water. This may lead to localized trampling and is said to lead to incisement of the water channels and hence to a reduction in water flow through the beds themselves. Disturbance of mossbed through trampling can be observed, yet the study made by McDougall (1989)

did not show any substantial difference between a mossbed which was open to grazing and one exclosed to grazing for 40 years.

Further attention should be given to improving our knowledge of change in mossbeds, by a more comprehensive monitoring of changes in their size. This requires sampling over long transects to record their extent, rather than a detailed monitoring of species, because the species will survive if the integrity of the mossbeds is maintained. The other requirement is to introduce direct management to reduce trampling whenever it is seen to be severe, either by providing sources of water outside the mossbeds (e.g. by pipe and trough), or by fence exclusion. It is surprising that such management input to alleviate problem patches has either not been attempted or not allowed.

Erosion

Observations of small bare patches (up to 10cm across) within the high plain snowgrass, show some wind movement of lighter organic and sand particles. The movement is apparently short distance (i.e. into the adjoining grass tussock) and the patches do not grow into the larger sheet and gully erosion which we associate with land degradation in the central highlands. These bare areas are too small to affect water runoff (van Rees and Boston 1986). Cattle tracks are not a common feature and from my observation are less prominent than walking tracks.

In some localized sites cattle develop preferred camps which become dust wallows. These need remedial management attention by exclosure, rather than further research.

The general conclusion is that the erosion attributable to grazing is very localized. Whilst some effects can be observed in special places, these could be remedied by management and are comparatively much smaller than erosion from roadworks and ski developments.

Research methods

Several requirements for future research, relating to gaining a better understanding of the factors influencing vegetation composition, and on the management of rare species, have already been outlined. There are also some other issues relating to the conduct of research that should also be mentioned.

1. Foliage cover has so far been used as the sole measure of vegetation. This is appropriate for many purposes, but not for others. For instance it cannot differentiate between an increase in plant size (i.e. from getting older) and an increase in plant number, so the interpretation of a change remains uncertain. It also gives a quite inadequate sample of rare plants. More use should be made of the fate of tagged shrubs and of changes in density of various size classes. The changes recorded in shrub cover are thus open to two interpretations. The first is that there is now more heath shrubs. The second is that the shrub number has not changed, but they have grown larger. The implications of the two conclusions are very different.

2. Comparisons of grazed and ungrazed areas have been essentially unreplicated. One exclosed area has been compared with one ungrazed area, leading to uncertainty in some of the conclusions as to whether the difference between them is attributable to exclosure, or to natural variation between one patch and the next. In scientific language this is referred to as the fault of 'pseudo-replication', where replicate samples are taken from the one patch, rather than from a number of independent patches.

As a consequence the statistical analyses of data from the major exclosures are invalid and only the larger changes that have been recorded can be given any credence.

3. Most of the research has been confined to small sites or transects that are measured in detail so that we lack information of the extent of the changes. Greater use should be made of rapid broadscale methods for monitoring overall change, such as species frequency. As a consequence we have little information on the extent of changes in vegetation composition.

4. There has been an emphasis on proving grazing to be an undesirable land use. Perhaps the assumption was the grazing would be excluded from these lands if the changes could be blamed on cattle. There has thus been an absence of any research into managing the observed impacts. I have already mentioned the options for excluding grazing from areas of localized impact, whilst other management options such as the timing, or rotation of grazing, or the exclusion of grazing for single years, are open for trial. It is quite feasible that a year's rest would restore the seed stores of preferred plants, whilst a later start to grazing in some years may achieve the same result. Controls on the number of cattle grazed are also important, but these have already been implemented. Total grazing exclusion is not required to alleviate specific problems and even if some areas are excluded from grazing, others will remain grazed and would benefit from improved management.

Conclusion

The general writings on the alpine and subalpine country, especially relating to the Bogong High Plains, conclude that cattle grazing has a very large impact on the ecology of this region. There are observable changes, with a diminution of perennial forbs, but in the total perspective of possible changes, the impact is small. The vegetation is still largely natural and its diversity is intact. The composition has been somewhat changed, but not degraded. Erosion and trampling effects are present, but quite localised. Land degradation is not a big problem.

However, the public interest in the region is high, so that a high standard of management is required. Different standards apply than to other parts of Australia. It is therefore important that cattlemen take a knowledgeable and positive approach to management of the area. At the same time it is unfortunate that the Government agencies in charge of the land have not taken a more positive approach to management that might alleviate the small problems that remain. The approach has been to ask for the removal of cattle whenever a problem has been identified, rather than to seek alternative solutions. There is room for some experimental work on grazing management that has the objective of decreasing or eliminating any undesirable consequences of grazing and trampling.

The more widespread change of an increase in cover of heath shrubs may be largely attributed to a long period of recovery from earlier fires, although grazing may also be a contributing factor. Because fire has been absent for a long period, its possible long-term effects have been discounted. It is infrequent, but will still have a long lasting effect on the cover of heath shrubs. I do not believe that grazing is the major cause of long-term changes in the shrub-grass balance.

Cattle grazing and a policy of fire suppression would have both contributed to the lower frequency and intensity of fires since 1939. The effect of grazing on fire frequency is circumstantial, but since grazing reduces fuel loads, a logical link between the two can be expected. Grazing may therefore reduce fire frequency, with advantage to the Government in terms of fire suppression costs. However, in ecological terms this may not be seen as a benefit, because it is contributing indirectly to the long-term shift in vegetation composition towards heath shrubs.

13 The Disaster of the Trial Plot - Percy Weston

In the early fifties, conservationists, urban politicians and others, started a crusade to show cattlemen the error of their ways and eliminate grazing from the alpine areas. They agreed to secure an area that could be securely fenced on the Bogong High Plains. A small catchment of some 30 acres was selected on the far side of the Rocky Valley Dam and suitably fenced at some expense to prevent grazing.

Over the years, field days were held at various times and reports on the condition of the plot and its contrast with the grazed country alongside were made available to the media. It was my view that the reports or propaganda that followed only reflected on the wishful thinking of its sponsors. Usually I made personal visits to see what was happening but I was also there when the field day was held in 1957. Yes, the group of some 50 persons stood beside the fence of the trial plot and they could see the contrast between the short grazed growth outside and the profusion of growth inside. Nobody made an effort to examine what was going on inside.

This is what I saw happen after a careful study over the three years and it will illustrate that changes in the ecology take place. Although free from grazing in the first summer, there was only a thin growth of seed head of native grasses. In the second summer, the seed heads were thick and over two feet high.

While large numbers of crows could be seen roaming about on the grazed plains, never could one be seen alighting in the high cover of the plot area, where a slow ominous change was taking place. At first, some eggs of mountain grasshoppers, which had lain dormant for some years or laid by survivors that had escaped crows, were encouraged to hatch out by the moist warm cover. From year to year, they soon bred up to plague numbers and when I entered the plot in 1957, they were in swarms in all shapes, colours and sizes as I had seen them on Buffalo. While there, I watched several small flocks of crows fly over the plot but not one dared alight in the area through fear of ambush by foxes.

In the years that followed, as the mountain grasses would attempt to make growth and seed cover, the hoppers would slowly desiccate all leaf and stems of the grasses, sucking out the sap rather than eating the growth. This dead material then formed a damp, warm mulch that encouraged the seeds of the shrubs and snow gum which remained dormant for many years, to strike. With the growth of grass restricted by hoppers, these shrubs and trees grew and flourished, and in a span of twenty to twenty five years, you have the transformation from grassy plain to wilderness area that makes travel difficult.

Had a fire started there, possibly as a result of lightning, the heat would have been so great that the plot would have been a scar enduring for years. If cattle are removed from the alpine areas, that transition to wilderness areas will become general and sooner or later there will be the greatest conflagration in our history. Even in my boyhood days, crows and ibis would visit the alpine areas to control insect life; but before that, the scientist, William Howitt, gave a great description of the exodus of thousands of those birds down the Mitta as winter storms came in 1854.

The dramatic pattern of change from clean pasture to acute fire hazard, as happened to the trial plot, has long been duplicated by events since the end of grazing on Buffalo in 1923. Since my grandfather, James Fitzgerald, began to run cattle there in 1858, I have only heard of two fires that

gained access to the plateau, in the summers of 1914 and 1918. Both fires were easily controlled by two men as there was little long grass to carry fire.

My father ran cattle on Buffalo from 1888 to 1923 and his policy of management ensured easy control of fire. Sensible grazing and a burning that singed any dry grass was all that was necessary, when mustering took place in April or May as weather allowed.

Since the end of grazing on Buffalo in 1925, there has been a slower but identical change similar to that at the little patch plot. But by January 1926, there was so much long grass that a hot fire raged across the plateau until quenched by rain. Apart from the hideous sight of fire killed Snow Gum and Woolly Butt, even the plain areas have a bedraggled appearance.

While they present enough fox cover to frighten off the wary crows, the grasses are under dual attack from hoppers and grubs of the Bogong moth. These grubs are identical to the cutworm grubs that damage our garden plants. By day, they hide by burrowing up to an inch under the soil beside the host plant.

On a visit to the high plains, I noticed a group of crows busy on some short grazed pasture where there was not likely to be any hoppers for food. Curious of the reason, I found they were locating grubs from loose patches of soil beside tufts and relishing the grub just as much as the Aborigine enjoyed the moths which used to swarm around such formations in countless millions.

So, slowly but surely, since grazing ceased, grubs take over the plains of Buffalo and it will take an army of rangers to safely maintain the mount as cattle did.

The trial plot clearly showed that the policy of conservationists must surely lead to the ruination of the alpine regions. In the massive report on the proposed management plan for the national parks, there is no mention of the mediums - foxes, hoppers, grubs, fungi and frosts - that now govern the ecology there.

14 Drought, Fire and Ideology Gone Mad - Bill Cumming

W.L. (Bill) Cumming

The year 1998 has been very tough for all who grazed cattle on the High Plains, particularly the first half of the year. Unfortunately those of us who grazed cattle on the Snowy and Bennison Plains, Mount Arbuckle and Mount Wellington areas suffered more than most.

We were already going through a very severe drought on the lower home properties and then to be burnt out on our mountain leases was the ultimate disaster.

I first received news of a fire burning in the Caledonia River area on New Year's Eve, Wednesday 31st December 1997, at 3pm, and contacted the DNRE at Heyfield. They seemed to think the fire could be controlled. By Thursday 1st January, it became obvious the fire was spreading and I received a phone call in the late afternoon from the DNRE informing me that the fire had spotted onto Mount Reynard. At 11pm that night the Heyfield police phoned to say that the area around Kellys Hut and McMichaels Hut was burning and wanted to know if I had cattle in the area. There was little that could be done at that stage but an early start enabled me to arrive at Kellys Lane by 9am on Friday 2nd January.

It was possible to drive up to Kellys and McMichaels Huts and I was pleasantly surprised to find my cattle undamaged although the surrounding grass country was blackened.

The fire at this stage had again spotted, this time in the Arbuckle Junction area and was burning back towards our paddock along Shaws Creek. Driving back down Kellys Lane I found two or three small mobs of our cows and calves and was able to put them into our paddock where the grass was short and green along the creek. At this stage most of the area around was burning and I headed back to Higgins Hut and took refuge near the bridge. Those at Higgins Hut had worked hard to save the building, with the fire burning right up against the north wall of the hut.

Earlier that morning the Higgins brothers had mustered what cattle they could find from the area known as Back Creek and placed the cattle in their freehold paddock, an area kept well grazed. This no doubt saved most of their cattle.

Two hours after the fire had gone through I went back to our own paddock and was overjoyed to see most of the cattle I had put back in there were okay. There is no doubt that if Higgins' cattle and our cattle had not been shifted the losses would have been much heavier.

Aerial photographs can show that where cattle had been constantly grazing the grassland, the severity of the fires was much less. This no doubt saved the cattle we had shifted.

On Saturday 3rd, Parks Victoria arranged a meeting of cattlemen at Licola and we were told that all the cattle would have to be mustered off the burnt area and for us to find alternative grazing areas. A difficult task considering the drought conditions on our home properties. The option of selling the cattle was not possible as prices were at their lowest for many years.

We were also told at this meeting that it was most likely that cattle would not be allowed back for three years. We were naturally shocked at this comment, believing it would be very presumptuous to assume that the area would take that long to recover. We were desperate to find an area to place our

cattle and approached Parks Victoria for permission to take cattle either out to the Howitt Plains or the Wonnangatta Valley, both areas being inside the National Park. Parks Victoria officers have made it quite clear to us that they would rather not have cattle in the Alpine National Park, the cattle are only being accommodated because of the Alpine National Park Act, which provides for grazing in certain areas within the park, so we were not very optimistic regarding our request. The answer was an emphatic NO, so we decided to lobby our local politicians for assistance. They were not able to reverse the decision and our situation was getting worse. We had naturally been seeking the help of our own MCAV, and we will be forever thankful that the Association wrote to the Minister reminding her of Government policy in respect of the former freehold of the Wonnangatta Station. The Management Plan for the area states that: "Cattle grazing could also reduce the fire hazard in this agricultural setting. However, under the National Parks (Alpine National Park) Act 1989, only the former freehold land may be grazed.". Immediately Bryces Paddock came to mind, being part of the Wonnangatta Station property and owned by the Guy family for many years and later by the Gilder family from Glenfalloch.

The Minister then gave her consent for the use of Bryces Paddock. We were fortunate that the western and northern fences of the paddock were in good order, which meant only fencing the roadside and eastern side to hold the cattle. We were told that no cattle were to be allowed to stray outside the paddock.

On Tuesday the 13th of January, we began the fencing that was required, receiving great assistance from our president, Harry Ryder and friends, and also some cattlemen from Omeo and Benambra and some locals. By Thursday we had a mob mustered from off the burnt areas, and we walked 187 head over to place in the paddock. It was a marvellous effort, and the affected cattlemen sincerely thank all who helped. The cattle did well and remained in the paddock until the 23rd of March.

Fortunately the winter rains came and for most the drought was just a bad memory, apart from the ongoing financial hardship.

As the grazing season for 1998/1999 approached, it became obvious that Parks Victoria was reluctant to allow grazing in the fire-affected areas. A meeting was arranged with them for the 20th of November and various sites that had been burnt were inspected. As there had not been any data prepared on these sites prior to the fire, it was hard to understand how comparisons could be made. My own observations have lead me to believe that the floristic display is better than before the fire. Areas not well grazed were being choked out by the snow grass, the fire opened up the snow grass, allowing the wild flowers to thrive. To our minds the recovery was excellent. However Parks Victoria was not convinced and we received a letter on the 11th of December stating that cattle grazing will not be allowed within the burnt area of the Alpine National Park this season. A number of alternative areas were put to us and two of the cattlemen reluctantly accepted these proposed areas. That still left approximately 150 head that would normally be grazed in the High Plains without an option.

The cattlemen again inspected the burnt area on the 14th of December, accompanied by David Treasure MLA for East Gippsland. We were all amazed at the improvement in the cover, particularly on the open country. David's words were, 'You could milk dairy cows up here'.

Another meeting was arranged with Parks Victoria's officers for an inspection, and this took place on the 16th of December. At this meeting we suggested that cattle could be contained within a fenced area on the least affected burnt sections. These were the areas mentioned earlier that had not been so

severely burnt. The numbers of cattle that could be grazed would be considerably less than normal, seasonal conditions in the past had taken care of that.

At this stage we are still waiting for a response to our compromise. In the meantime, the grass on the High Plains continues to grow.

I have been involved with a few bureaucratic/political decisions that have disappointed me, such as the Land Conservation Council's decision to increase the Alpine Park's area and the recent shire council amalgamations. However this decision not to allow grazing in the Alpine Park this season 'takes the cake'.

15 Take Heed from the Past and Learn for the Future - Brian Higgins

Brian Higgins

How many times have we heard it is only a fool that does not learn from mistakes, but this is what appears to be happening again after the Caledonia fire. It is now over 60 years since the devastating fires of 1939 covered much of the State. Little appears to have been taken on board to prevent the fuel build up that lead to this and the Caledonia disaster.

The main brunt of the blame for the 1939 fires was laid on the settlers, miners and graziers. The settlers and graziers were the very people complaining to the Stretton Royal Commission. They had no trouble with bush fires until the restrictions on burning arrived with the Forests Commission.

The criticism of forest management has not started just recently. Over 100 years ago Alfred Howitt was concerned about changes he was seeing, following the breakdown of the Annual burning by Aboriginal people. Here is part of what Howitt had to say in the Journal of The Royal Society of Victoria in 1890.

The influence of settlement on the Eucalyptus forests has not been confined to the settlements upon lands devoted now to agriculture or pasturage, or by the earlier occupation by a mining population.

Before this the graminivorous marsupials had been so few in comparative number, that they could not materially effect the annual crop of grass which covered the country, and which was more or less burnt off by aborigines, either accidentally or intentionally, when travelling, or for the purpose of hunting game.

The annual bushfires tended to keep the forests open, and to prevent the open country from being overgrown, for they not only consumed much of the standing or fallen timber, but in great measure destroyed the seedlings which had sprung up since former conflagrations. The results were twofold. Young seedlings had now a chance of life, and a severe check was removed from insect pests. (RSV 1890, p109)

In the upper valley of the Moroka River, which takes its rise at Mount Wellington, I have noticed that the forests are encroaching very greatly upon such open plains as occur in the valley. I observed one range, upon which stood scattered gigantic trees of *E. Sieberiana* (Silvertop), now all dead, while a forest of young trees of the same species, all of the same approximate age, which may probably be twelve years, growing so densely that it would not be easy to force a passage through on horseback. Again at the Caledonia River as at the Moroka, the ranges are in many parts quite overgrown with forests not more than twenty years old. The valleys of the Wellington and Macallister Rivers also afford most instructive examples of the manner in which the Eucalyptus forests have increased in the mountains of Gippsland since the country was settled. (RSV 1890, p.110)

During the 1939 fires, 71 lives were lost, 69 sawmills were burned, millions of acres of fine forests of almost incalculable value were destroyed or badly damaged and townships were obliterated in a few minutes. The Stretton Royal Commission looked into this fire and was scathing in its criticism of forest management. Much of this criticism is just as applicable now as it was then. The following are extracts from transcripts of witnesses to the 1939 Royal Commission. Harry Lewis Treasure from the Dargo High Plains was not happy about being burnt out for the third time.

We had a hard fight to save the buildings. Eight men worked hard all day and we finished up the day with hardly a man able to see, we were blinded with smoke. (Stretton Royal Commission Transcripts, p 1174)

I have been there for 60 years, practically all my life, and I have a good idea of the conditions and of what has happened there.

We have been burnt out in 1918, in 1926, and in these fires. Prior to that we never had a bad fire. I do not say that there were not fires that killed a small patch of timber in little places. Prior to 1918, before there was much restriction on the lighting of fires, that country was populated with miners, diggers, fossicking along the rivers for gold.

There were up to 100 diggers working along the Dargo River and each man had his hut. They had no fear of ever being burnt out and they never were burnt out. If they had been there during the recent fires, not only would their houses have been burnt, but (the) men themselves would have been burnt to death.

In those days there were no restrictions on the lighting of fires and yet the travellers, tourists, etc. were safe. The country was burned regularly whenever it would burn and that stopped any fires from getting hold and going a long way. If one man happened to light a fire in one location it could not get far because it would run into burnt ground. That was all right. No timber was destroyed.

Later on the restrictions were imposed and in 1918 I suppose there was a lot of debris, bracken, leaves and undergrowth that had been hoarded up in the bush, I think a fire started in February over the other side of the dividing range. It came through our country and killed thousands of acres of beautiful woolly butt timber. We were lucky with our cattle but it burned down a lot of our fences.

We had no more fires from then until 1926, when another one occurred under similar conditions. There was a heavy fire in February, which killed more valuable timber, and almost exterminated the woolly butt on the northern side of the range, leaving it on the south side, where it was more shady. After these fires the woolly butt trees died. Once they are burnt they will never sucker, but a new lot will come up from seed. I know of places where a light fire has thinned out the young seedlings and the forest has been remodelled. It is there again but if another severe fire goes through the young seedlings, before they grow to about 15 years of age and shed more seed, the woolly butt in that area will be exterminated for all time.

There has been practically no fire there since 1926. Odd patches may have been burnt here and there, but there had been very few. We had no fire until last January. In our area [of] approximately 100,000 acres, hardly a tree was left living on the other side of the spurs and ranges except in very small patches, where there had been a fire within the last two or three years. (SRCT, pp 1175 and 1176)

I think we were lucky in this fire on the Dargo Plains last January, but had we been down on the runs or on the river. I do not think we would have lived. I do not see how a man could have escaped. There is not a living tree left along the Dargo River for 60 miles, and all the logs and debris washed up by the water is scorched right out.

With reference to erosion, I think the mountain country is lucky this year. Erosion is bad after heavy rains. It washes the soft soil down into the rivers. Had we got heavy thunder storms after the January fire, the valleys would have been practically filled up. However rain came down very steadily and nothing worth speaking of it was washed away.

There is little or no erosion after a light burn, but it is different with heavy fires such as we have had. They not only burnt the debris and wood on and above the surface, but they burnt into the soil itself. There are acres of ground that have been burnt right down to the grass roots and if we get heavy rain on top of that, it will cause much erosion. Luckily, we did not have it this year. (SRCT, p 1177)
It is my belief that the longer we hoard up debris to be burnt, the worse our situation is going to be (SRCT, p.1179)

Harry Treasure was quite satisfied at the time that lightning lit any amount of fires. This suggestion was strongly refuted by the Forests Commission up until around 1965. On 7 February 1965, a fire was started by lightning in New Place Creek, north of Briagolong. Over the next month another fire from Glenmaggie, linked up with this burning out over half a million hectares. From this period on, cattlemen ceased to be blamed for starting most bushfires.

William Francis Lovick of Mansfield held 54,000 acres of Crown Forest lease in the area from the top of Mount Howitt to Mount Clear and the Jamieson and Howqua Rivers. He had been there from 1910 up until 1936, when he stopped grazing. He considered it was not safe to have 500 or 600 head of cattle in the mountains, as in a year like 1939 the lease would be burnt out. He said it was the common view of every experienced man in the mountains through Gippsland and the North East, that the condition of the forests was too dangerous to hold a lease. Lovick advocated going back to the cattleman's methods that were in use prior to 1926.

We do not advocate and have never practised burning the whole forest at once, either in autumn, the spring or any other time. We practised burning a proportion of each run, each autumn. On a 10,000 acre run we might burn 3,000 acres, and the next year 1,500 acres, depending on the season and conditions. The area would not burn in the following year. In that way we always had the country practically safe, and the proof is that we never burned anybody out and never lost any lives. ... A man simply burned on his own run, but all his neighbours were doing the same. (SRCT, p.695)
We burned for 25 to 30 years. We were told by the Forests Commission that we were ruining the forests, but this year three mills have been put into the country that was said to be ruined, and they have 50 years timber to cut.

The fires [of the cattlemen] would certainly ruin odd saplings but not many. ... It would only amount to a natural thinning. ... It would not matter. The fires that have gone through the forests this year have ruined more timber in two hours than all the cattle men of the east ruined in 50 years. (SRCT, p.696)

The Forests Commission has fallen down on the job in this year, at any rate. If I had a manager and he had three bad crashes in 13 years, I think I would sack him. (SRCT, p. 697)

I am not there now, I have no axe to grind. ... I loved those mountains as a boy and I have been in them ever since. I have travelled more than most men, and I still love them, and it hurts me to see them ruined. ... I have no cattle. There may be a stray bullock there, but I am not worried about it. I have nothing to worry about, but I do not want the mountains to be ruined. Any Walking Club member in Melbourne can tell you that I am a lover of those mountains. (SRCT, p.698 and 699)
Sometimes you could burn with safety in the middle of March and sometimes you had to wait until the middle of April. ... If the autumn was wet early, there would be a fair amount of dry weather later, and that would be a beautiful time to burn. The fire would run in the lower country, and everything would be safe as a church. (SRCT, p.699 and 700)

William Lovick said he had seen a fire start after a lightning flash, he also said they kept the country safe and protected the lot from fire.

John Dennis [Jack] Guy of Dargo held a lease on Mount Howitt and started off by telling the inquiry when he would burn on the high country:

I would say up until October in most years, after the snow. A lot depends on the season. ... The only feed we have left is in the patches that we burnt in October. That saved the big fire going over the lot. (SRCT, p.1188)

He said they would not light a fire that would be dangerous to anyone. They were practical men who had been in that country all their lives.

Gavan Michael [Kevin] Molphy of Glenmaggie, had leases in Mount Useful and Mount Selma areas, described how he survived the fire in the bush:

We were up there, I think on Tuesday when the fire came through. We got in a patch of mountain ash that had been burned last October, and waited until the fire went past us. The fire never touched that patch at all. (SRCT, p.1187)

It was very hot. As far as we could see, the fire on the tops of the trees seemed to be hundreds of feet ahead of the fire. ... That was on Wednesday, two days before Black Friday. ... It was very choppy wind up there, the wind came from the gullies. The wind was strong enough on that day, but nothing like the wind on Friday. (SRCT, p.1188)

Most bush people remember Judge Stretton's report for three things: attributing the clean forest floor to the absence of fire before European settlement, failure to blame lightning for starting many fires and putting fuel reduction solely in the hands of the Forest Commission who mostly failed dismally to do the job. There is however another side of the good Judges report that is not quoted by environmentalists, alpine ecologists and Parks Victoria, that we should take seriously. Here are some extracts:

... to expose and scotch the foolish enmities which mar the management of the forests by public departments who being our servants, have become so much our masters that in some respects they loose sight of our interests in the promotion of their mutual animosities.

No person or department can be allowed to use the forest in such a way as to create a state of danger for others. (Stretton Royal Commission Report, p.7)

The rest can be set down to its failure to recognise until recently a truth which is universal, namely, that fire prevention must be the paramount consideration of the forester. (SRCR, p.15)

Controlled burning. This consists of strip and patch burning. The amount of this burning which was done was ridiculously inadequate.

It was apparent during the course of the Inquiry that the Commission's officers had not considered the question of their duty to protect the adjacent land holder. (SRCR, p.16)

It has been found that the [Forests] Commission has been too closely pre-occupied with questions of revenue production to the comparative exclusion of considerations of reclamation and rehabilitation. Both reclamation and rehabilitation of forests bear a close relationship to the question of prevention of fire and protection of life and property. (SRCR, p.29)

According to the Forestry Authorities of the world the first consideration of the forester is, or ought to be, the prevention and suppression of fire. (SRCR, p.30)

Burning. It has already been recommended that the Forests Commission must recognise the necessity of protective burning in its areas. It is not suggested the practice be followed in mountain ash country, except to a small extent, where necessity demands that it should be done. In all other parts where less valuable timber, less susceptible to fire, occurs, this method of prevention of outbreak and spread cannot, either in public or private interest, be ignored. (SRCR, p.31)

Before the flood that followed the 1939 fire, old timers describe the Macalister River as being about a third the size it is now, with gentle banks and virtually no erosion. Stretton was critical of erosion.

From the types of erosion, disastrous siltation occurs, the eroded matter being carried in suspension and precipitated when the speed of water is reduced. After the fires of January 1939, rich river flats were buried to a depth of several feet beneath deposited silt of inferior quality. (SRCR, p.28)

The Melbourne Board of Works came in for special attention for the way it managed Melbourne catchments.

Thus the water supply authority has in many instances, in furtherance of its desire to give full supply of uncontaminated water, allowed its area to become a menace to the rest of the forest. (SRCR, p.10) The difference in substance between the methods of these two bodies is that the Board refuses to use burning as a general protective method. It is long established by foresters in other parts of the world that in conditions such as exist in many parts of the Board's areas - burning is the only effective safeguard. (SRCR, p.14)

Erosion and water quality following the Caledonia fire has caused considerably community concern, with regular mud-flows down the Macalister River, over the last three summers. It would appear Parks Victoria have spent more time and money closing roads hiding the problem, than addressing it. Little appears to have been learnt from the destruction caused to Charlie's Country and the Caledonia Valley.

Most people who have been associated with the mountains consider another fire like 1939 or 1851 is inevitable with present management practices. Many of us are amazed it has not already happened.

Gippsland would be in a serious position if this occurred again, from more than the fire. The Gippsland Comprehensive Regional Assessment for the Regional Forests Agreement has some concerning information relating to water supplies after fires destroy large areas of Ash (Woolly Butt) forests.

The ash-type forests yield 70 to 80 per cent of Melbourne's water, and therefore most catchment research has concentrated on the ash forests. (Gippsland Comprehensive Regional Assessment, p.108)

As the forest regenerates, water yield decreases to a minimum of about half the original yields at 20-30 years, and then steadily increases to pre fire yields at around 150 years. (CRA, p.110, based on research after the 1939 fires by Kuczera 1985)

The 1939 fire was after about 25 years fuel build-up. Most Melbourne catchments now have 60 years. If the Ash Wednesday fire had started at Cockatoo another two and a half hours earlier, Melbourne's catchments would now be producing far less water.

We have seen first hand just what happens to gullies, streams and rivers from erosion following a hot fire. The Macalister River is showing no sign of stabilising in most areas from the 1939 flood.

The problems are not going to go away in the Caledonia valley. Many water courses and gullies have severely eroded channels with near-vertical sides. As the banks are undercut, they are falling in, with landslides developing in some places. The problems could be expected to decline over the next five years, as vegetation growth slows runoff from thunderstorms. However, like the Macalister, it is unlikely it will go away. Neglecting to learn a lesson from what has happened in the Caledonia valley could have dire consequences for Melbourne's water supplies.

If, due to excessive fuel build-up, Melbourne's catchments were burnt out by a big, hot fire, they would have to build dams on the Aberfeldy and Macalister Rivers, just to make up for the shortfall. This would have local irrigators competing with Melbourne for water. Most people would be excluded from a large area of mountains, similar to the Thomson catchment.

It was interesting to note the private land on the Bennison Plains managed using traditional burning and grazing, survived the Caledonia fire remarkably well. Much of this land was not burnt at all. Three weeks after the fire, the burnt areas were a sea of green with fresh grass shooting.

Parks Victoria have not been able to substantiate claims that big hot fires are natural, as opposed to the cool burning of the Aboriginal people and cattlemen. There needs to be a full and open public inquiry into park and forest management before any more of the Victorian environment is seriously damaged by the people charged with looking after it.

16 Judge Stretton 1939 Royal Commission Report

In the State of Victoria, the month of January of the year 1939 came towards the end of a long drought which had been aggravated by a severe hot, dry summer season. For more than twenty years the State of Victoria had not seen its countryside and forests in such travail. Creeks and springs ceased to run.

Water storages were depleted. Provincial towns were facing the probability of cessation of water supply. In Melbourne, more than a million inhabitants were subjected to restrictions upon the use of water. Throughout the countryside, the farmers were carting water, if such was available, for their stock and themselves.

The rich plains, denied their beneficent rains, lay bare and baking; and the forests, from the foothills to the alpine heights, were tinder. The soft carpet of the forest floor was gone; the bone- dry litter crackled underfoot; dry heat and hot dry winds worked upon a land already dry, to suck from it the last, least drop of moisture.

Men who had lived their lives in the bush went their ways in the shadow of dread expectancy. But though they felt the imminence of danger they could not tell that it was to be far greater than they could imagine. They had not lived long enough. The experience of the past could not guide them to an understanding of what might, and did, happen.

And so it was that, when millions of acres of the forest were invaded by bushfires which were almost State- wide, there happened, because of great loss of life and property, the most disastrous forest calamity the State of Victoria has known.

These fires were lit by the hand of man.

Seventy- one lives were lost. Sixty- nine mills were burned. Millions of acres of fine forest, of almost incalculable value, were destroyed or badly damaged. Townships were obliterated in a few minutes. Mills, houses, bridges, tramways, machinery, were burned to the ground; men, cattle, horses, sheep, were devoured by the fires or asphyxiated by the scorching debilitated air.

Generally, the numerous fires which during December, in many parts of Victoria, had been burning separately, as they do in any summer, either 'under control' as it is falsely and dangerously called, or entirely untended, reached the climax of their intensity and joined forces in a devastating confluence of flame on Friday, the 13th of January.

On that day it appeared that the whole State was alight. At midday, in many places, it was dark as night. Men carrying hurricane lamps, worked to make safe their families and belongings. Travellers on the highways were trapped by fires or blazing fallen trees, and perished.

Throughout the land there was daytime darkness. At one mill, desperate but futile efforts were made to clear of inflammable scrub the borders of the mill and mill settlement. All but one person, at that mill, were burned to death, many of them while trying to burrow to imagined safety in the sawdust heap.

Horses were found, still harnessed, in their stalls, dead, their limbs fantastically contorted. The full story of the killing of this small community is one of unpreparedness, because of apathy and ignorance and perhaps of something worse.

Steel girders and machinery were twisted by heat as if they had been of fine wire. Sleepers of heavy durable timber, set in the soil, their upper surfaces flush with the ground, were burnt through. Other heavy wood work disappeared, leaving no trace.

Where the fire was most intense the soil was burnt and destroyed to such a depth that it may be many years before it shall have been restored by the slow chemistry of Nature. Acres upon acres of the soil itself can be retained only by the effort of man in a fight against natural erosive forces.

The speed of the fires was appalling. They leaped from mountain peak to mountain peak, or far out into the lower country, lighting the forests 6 or 7 miles in advance of the main fires. Blown by a wind of great force, they roared as they travelled. Balls of crackling fire sped at a great pace in advance of the fires, consuming with a roaring, explosive noise, all that they touched.

Houses of brick were seen and heard to leap into a roar of flame before the fires had reached them. Some men of science hold the view that the fires generated and were preceded by inflammable gases which became alight. Great pieces of burning bark were carried by the wind to set in raging flame regions not yet reached by the fires.

Such was the force of the wind that, in many places, hundreds of trees of great size were blown clear of the earth, tons of soil, with embedded masses of rock, still adhering to the roots; for mile upon mile the former forest monarchs were laid in confusion, burnt, torn from the earth, and piled one upon another as matches strewn by a giant hand.

Judge Stretton on the causes of the fires

No one cause may properly be said to have been the sole cause. The major, over-riding cause, which comprises all others, is the indifference which forest fires, as a menace to the interests of us all, have been regarded. They have been considered to be matters of individual interest, for treatment by individuals.

Judge Stretton on the settlers

Settlers, miners and graziers are the most prolific fire-causing agents. The percentage of fires caused by them far exceeds that of any other class. Their firing is generally deliberate. All other firing is, generally, due to carelessness.

Judge Stretton recommendations

1. The Forests Commission should have complete control of all forests.

The Forests Commission should be given responsibility for forest fire protection in all unoccupied Crown lands, except where special exemptions exist.

This would include 'protected forests' as well as 'reserved forests' (the two categories that made up the whole of the State Forests). In addition, the Forests Commission should control the use of fire on a strip of land (at least half a mile wide) beyond state forests and national parks.

2. The Forests Commission must pay greater attention to the reclamation and rehabilitation of forests and cease to be too preoccupied with revenue production.

Commercial interests have had too much influence on forest policy. Forest debris and waste from sawmilling should be cleared by means of light fire and mobile equipment. Prevention and suppression of fire is an absolute priority.

The capacity for early detection and containment of fires needs to be improved, through the provision of more look- out towers, roads, fire- fighting equipment, better communication and water conservation in dams and tanks throughout the forests.

3. A State Fire Authority should be established.

This body should consist of representatives of the Bush Fire Brigades, the Country Fire Brigades, the Forests Commission and the relevant municipalities.

The new authority should define general policy for preventing and suppressing bushfires outside State Forests, protecting life and property, organising and recruiting local brigades, and maintaining discipline of brigades and local fire authorities.

The State Fire Authority must not be involved in the internal policy of public bodies that control forests. The authority should zone Victoria according to environmental and social conditions that affect fire risk, and should have the power to proclaim acute fire danger periods in particular areas.

4. A Land Utilization Control Committee should be established.

Such a committee, comprising experts from all relevant public departments, would help reconcile the conflicting claims and duties at present invested in forest lands. Bush fires are an important contributing cause of soil erosion, and a land utilization committee would consider methods of prevention of destruction of soil and its products.

5. The Forests Commission must recognise the necessity for protective burning in its areas and should respect local forest lore.

Where practicable, autumn burning is preferable for protective purposes. Forest officers should be stationed in one district for as long as possible. It is essential that forest officers who manage fire practices have a thorough knowledge of local forest lore and of the district in which they have authority. It is equally important that the local rural populace recognise that the officers have such knowledge.

6. Safety precautions at sawmills must be improved.

Better clearing about sawmills and better provision of water is essential. The construction of dug-outs at all mill settlements, and at winches during the fire season, should be compulsory.

7. The education of adults and children about fire prevention and protection must be taken seriously.

A law which is not acceptable to the many is made to be broken.

Witness statement:

WILLIAM FRANCIS LOVICK

Grazier, lives at Mansfield, has held a Crown Forest lease since 1910

[Mr. Gowans]: You are a grazier and you live at Mansfield?

Yes.

Since 1910 you have held a Crown Forest lease in this neighbourhood?

Until 3 years ago.

Why did you cease to have it 3 years ago?

The conditions got too dangerous under the present system of managing the forests. It was not safe to have 500 or 600 head of cattle in the mountains, because in a year like this the lease would have been burnt out.

Is it the common view around here that the condition of the forests is such that it is dangerous to hold forest leases?

It is the opinion of every experienced man in the mountains through Gippsland and the north-east.

It is impossible to prevent fires. All kinds of things cause fires. Mostly they are caused by careless people, and by careful people with insufficient knowledge.

The idea is to go back practically to the cattle man's methods that were in use prior to 1926. We do not advocate and have never practiced burning the whole forest at once, either in the autumn, the spring or any other time.

We practiced burning a proportion of each run each autumn; on a 10,000 acre run we might burn 3,000 acres, and the next year 1,500 acres, depending on the season and the conditions. That area would not burn in the following year. In that way we always had the country practically safe, and the proof is that we never burned anybody out and never lost any lives.

Your suggestion is confined to burning on your own property?

Mine is not a suggestion. It is a proved fact that the practice was followed from Wangaratta right through North Gippsland, from the Snowy Plains to Mount Wellington.

Was the practice confined to your own run?

A man simply burned on his own run, but all his neighbours were doing the same.

Would you burn your neighbour's run if necessary?

He would not growl if you did, in the autumn.

We burned for 25 to 30 years. We were told by the Forests Commission that we were ruining the forests, but this year three mills have been put into the country that was said to be ruined, and they have 50 years timber to cut.

Is it your view that it would not matter if some [mountain ash] saplings were damaged [by your autumn burning]?

It would not matter. The fires that have gone through the forests this year have ruined more timber in 2 hours than all the cattle men of the East ruined in 50 years.

The Forests Commission has fallen down on the job in this year, at any rate. If I had a manager and he had three bad crashes in 13 years, I think I should sack him.

17 Summary and recommendations of *The People's Review of Bushfires, 2002-2007, in Victoria*

1 Summary of People's Comments, and Recommendations

1.1 Summary of People's Comments

A Review such as this that invites and encourages comments from the people, and it will inevitably draw out far more responses that are critical of the system than responses that endorse the system. We must ensure that these criticisms are taken in context. Underlying it all is the feeling that Victorians at every level have done a good job in fighting fires under difficult conditions. The criticisms then aim not to destroy the system, but to see how we can improve our efforts, not just in fire suppression but particularly in fire prevention.

The comments covered a huge range of topics. While we have not attempted an accounting system, it is clear that there is a very great similarity in comments and responses across the State. We emphasize here and elsewhere that we have recorded the comments accurately, and they are available to everyone on CD; however we do not see it as our duty to check that the comments themselves are accurate. Whether accurate or not, they demand our attention; if they are shown to be wrong, then the authorities must act to correct the people's perceptions.

The dominant themes from The People's Review are:

- The use of fire prescribed burning to maintain low fuel loads has decreased dramatically in area around Victoria since the early 1980s. This decrease is due to:
 - A huge reduction in the number of forest workers, both government and private, employed in the country to look after our forests;
 - Lack of expertise, skills and local knowledge;
 - Bureaucratic control, far removed from the bush;
 - Too much concern with litigation and Occupational Health and Safety.
- The main cause of the mega-fires is the high fuel loads that have accumulated. Accordingly:
 - We should increase asset-protection burning to about 30% of the land each year, and broad-scale burning to about 10% per year;
 - The cost is of the order of \$20 million per year, a small cost relative to the money spent on the mega-fires of 2003-2007;
 - Prescribed burning should be in the hands of locals who have the knowledge and the skills, and who are on hand to take advantage of the right time to get a cool burn
 - Prescribed burning is invaluable as training for fire-fighting.

We are not prepared for fire:

- Fuel loads have accumulated to dangerous levels, as discussed above;
- There has been a huge reduction over the past 25 years in the number of forest workers, both government and private, employed in the country to look after our forests;
- Lack of expertise, skills and local knowledge;

- Lack of equipment and infrastructure in forest areas:
- Many tracks and roads have been closed, denying access for fire-fighting;
- Many fire towers have fallen in to disrepair, or are simply not manned over summer;
- Firebreaks have not been maintained;
- Water-points have not been maintained, directing a dependence on water for fire suppression to privately-owned water supplies.
- Immediate and aggressive first-strike to extinguish fires as soon as they start has not been effective. Local people and fire crews with local knowledge and expertise have been refused permission to enter the forest or national park.
 - First-strike can be very effective if it is immediate hand-tools are often sufficient.
- Fire suppression is very bureaucratic. Centralized control is poor because:
 - It does not make use of local knowledge;
 - It is cumbersome, and cannot take advantage of immediate decision-making on the ground.
- The government uses inexperienced staff in leadership positions, including the fire front. This means that;
 - The best people, with the greatest expertise and local knowledge, are not always used to direct the attack;
 - Back-burning is not well-planned (again, due to bureaucracy, might have to wait days to get permission to burn);
 - Briefings are often hopelessly inadequate, and are often a waste of time.
- Cooperative arrangements between Country Fire Authority, Department of Sustainability and Environment, and National Parks are often unsatisfactory:
 - Pay (including overtime) for government staff is always of concern to CFA volunteers. There is a strong feeling that the government staff have little incentive to put a fire out quickly.
 - CFA volunteers do not want to sit around, sometimes for days, waiting for orders from a distant, government bureaucracy;
 - There is little sympathy for the competencies of many of the staff in Parks Victoria;
- Many people who have lost their properties or livelihoods in fires that swept out of the forest have found the government to be unconcerned or even unsympathetic.
 - There is no proper costing of damages and losses due to bushfire;
 - The partnership between CFA, DSE and Parks Victoria is one-sided. CFA works on fires in the forest. However, once the fire is controlled, DSE and Parks Victoria do not come out of the forest to assist CFA to fight fires on private property.

1.2 Recommendations

The people reported on a wide range of inadequacies in fire prevention and suppression and these are reported on in this document in considerable detail. We cannot make recommendations on every detailed issue; our recommendations are broad and general.

This report deals with both fire prevention and suppression, but the main focus of our recommendations is on prevention; it is obvious that it is better to prevent fire than to have to suppress it. This Review will not only assist in resolving problems that arose during the fires of the early 2000s but perhaps more importantly will assist in setting in place mechanisms designed to avoid problems occurring in future fires. More particularly, our recommendations will head Victoria in the direction of reducing the incidence of fire or at least in preventing small fires becoming large, feral fires.

1.2.1 Fuel reduction burning

For many years, governments in Australia have been requested, urged and encouraged to increase the area of prescribed burning to reduce fuel loads. While governments have to some extent accepted the need to undertake more prescribed burning, there is increased scrutiny of its purposes, goals and achievements. The people report overwhelmingly that prescribed burning is grossly inadequate and must be increased.

Recommendation 1: The People's Review recommends that goals, procedures and accounting of prescribed burning in Victoria are totally revised, with the view to aiming toward a target of 10% of public land per year.

Prescribed burning in the bush and along roadsides provides excellent training opportunities for the training of young and new volunteers in larger-scale fire-fighting, as well as increasing the health and safety of our forests.

Recommendation 2: The People's Review recommends that the authorities capitalize and maximize the opportunities for prescribed burning to be used as an essential part of training in fighting fires

1.2.2 People and resources in the bush

There is increasing concern about the drastic reduction in the number of government people employed to work in the bush. Twenty-five years ago, many government departments maintained offices, staff and equipment in country towns throughout the State, whereas these services are now centralized in regional centres. Having people in the bush provides the local knowledge about topography and conditions that is essential in the prevention and suppression of fire.

Recommendation 3: The People's Review recommends that the government increase the number of departmental people living and working in country towns and the bush.

Recommendation 4: The People's Review recommends that the government increase the resources available in the country, both for fire prevention and for general maintenance and upkeep of State lands.

1.2.3 Restoring and maintaining infrastructure

Roads and tracks and other facilities and structures must be restored and maintained to allow quick and safe access to fires.

Recommendation 5: The People's Review recommends that the system of roads, tracks, fire towers, firebreaks, and water-points throughout State land (State forest, national parks and unoccupied Crown land) be thoroughly reviewed, with a view to opening up and maintaining access and maximizing fire-fighting capability over the estate.

Recommendation 6: The People's Review recommends that, together with employing more staff in the bush, the government utilize public land resource and recreation groups, individually and in groups, to assist in general maintenance and in keeping roads and track open and in good condition.

1.2.4 Aggressive first strike

Recommendation 7: The People's Review recommends that that all steps are taken to provide an immediate and aggressive first strike capacity across the State so that fires are contained as soon as possible.

1.2.5 Fire suppression

Fire suppression is complicated by multi-departmental organization of the control and management of Crown lands, by relationships between government and volunteer fire-fighters, by bureaucratic control versus local knowledge and expertise, by occupational health and safety regulations, by privacy legislation and by concerns about litigation.

Recommendation 8: The People's Review recommends that there should be a thorough review and overhaul of bushfire suppression activities in Victoria, including the line of command in fire-fighting, the line of command in granting and enabling access across State tenures, and communications.

1.2.6 People's future involvement - People's Fire Forum, Fire Policy Group, and local control of prescribed burning

In many fields of endeavour, the main location of knowledge is in institutions created to maintain and develop that knowledge. In the case of fire, however, much of the basic knowledge about local topography, fire and wind conditions lies not with city-based institutions, but with the local people themselves. This is why the people need such a strong voice. The following recommendation is not directed to Government but to the people of Victoria to urge them to pick up where this People's Review concludes and carry forward the imperative that the people have a right to be heard, their views assessed and changes implemented.

Recommendation 9: The People's Review recommends the establishment of a State-wide peak fire forum for the people, which we shall call the People's Fire Forum.

The development of fire prevention and suppression policy must be in the hands of people of all ecological persuasions. There is undeniably strong anecdotal evidence that the staff of Parks Victoria and Department of Sustainability and Environment is, simply put, seen as being too green. Fire policy must broaden from bureaucratic control and city-based politics to reflect the views and aspirations of the community, especially of rural communities. After all, it is they who live in the area, respond as volunteers to fight fires and bear massive social and economic cost of bushfires.

Recommendation 10: The People's Review recommends that fire prevention and suppression policy be set and reviewed by a Fire Policy Group that includes representatives of the People's Fire Forum.

Recommendation 11: The People's Review recommends that Prescribed Burning Groups, on which local communities have at least 40 percent of the representation, decide arrangements for prescribed burning including targets, timing, location and accounting.

1.2.7 The conservative use of resources on State land

A major perception across the State, right or wrong, is that governments have progressively restricted the conservative use of resources, not just in national parks but across all tenures. The perception that government has a 'lock it up and leave it alone' to policy for forest management is strongly and widely held. Exclusion of the conservative use of forest resources has resulted in the land being largely left to itself not only by the government, but also by the timber workers, the graziers, the bee-keepers and others etc. whose livelihood was the forest but who have now been displaced. Meanwhile, the problems of deteriorating infrastructure, the spread of pest plants and animals, and the accumulation of forest fuels continue to escalate.

Recommendation 12: The People's Review recommends that the government investigate ways in which forest workers can be employed, not solely for economic gain, but so that the bush is once again cared for.

Recommendation 13: The People's Review recommends that the grazing of domestic livestock on public land be honestly and objectively reviewed, bearing in mind the extent to which grazing can be managed to reduce fuels.