



HAMILTON FIELD NATURALISTS CLUB



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Hamilton Field Naturalists Club response to Victorian Parliament's cross-party Environment & Natural Resources Committee report on the fires of 2003 & 2006.

The Parliament's Environment & Natural Resources Committee has blamed the lack of prescribed burning as the major reason for the disastrous fires of 2003 & 2006 and recommended a trebling of prescribed burning, to an annual target of 385,000 ha.

The committee's recommendation for a major escalation in the large-scale prescribed burning program, if implemented, may have two serious adverse outcomes:

- A drastic long-term impact on vulnerable fauna species (and perhaps flora, too), in contravention of Victoria's Biodiversity Strategy 1997, the Fauna & Flora Guarantee Act 1988 and the Federal EPBC Act – the Parliamentary Committee virtually ignored the plight of endangered fauna, and DSE's current prescriptions for prescribed burning also do not give a weighting to the requirements of fauna.
- An extremely expensive annual operation that, on past experience, does not significantly reduce the incidence and extent of catastrophic summer wildfires when conditions are extreme (the burning may only be effective in moderate conditions).

The lack of effect of comprehensive fuel-reduction burning to prevent losses in severe weather conditions was dramatically demonstrated in the 1961 fires at Dwellingup, WA, where extensive fuel reduction program in many years prior did not save the town (Report of the Royal Commission, 1961, pp.15 and 21). We also observed, in the Grampians fire, that the fire front burned across an area fuel-reduced adjacent to the Halls Gap-Dunkeld Rd a year earlier. Unless we find the right solutions – including tactical early response teams that can prevent fire from developing in times of extreme weather – we will be exposed in the future to similar disasters. And we will certainly have made matters worse in the environment, to no good purpose.

A comprehensive review on fire effects was conducted by Charles Meredith in 1988 ("*Fire in the Victorian Environment – a discussion paper*"), funded by the then Department of Conservation, Forests & Lands. The review was wide-ranging, presenting all the information known to that time, and acknowledged contributions from 45 scientists, including DCF&L. Key conclusions at that time were:

- "*Failure to accept and understand the real level of risk meant that, in these cases [Ash Wednesday and preceding fires], too much management effort was directed to fruitlessly attempting to reduce fire risk to zero and not enough to developing procedures to cope with the inevitable disaster fire*".
- "*All studies found an immediate reduction in soil and litter invertebrates after fire*" – i.e. the decay organisms were affected and this results in a rapid fuel accumulation after fire.
- "*Due to the initial rapid rate of fuel accumulation, many forests reach high fuel levels in 3-6 years*".
- Fuel reduction burning "*is effective in helping control fires for three years after a burn*". "*For fire on less severe days, fuel reduction burning is likely to aid suppression for longer than three years*".
- "*As the plateau phase is usually reached 8-10 years post-fire, the fuel loads at 8 years may not be much different from those at 20 years or more after fire in most drier forests*". [i.e. "fuel" does not build up beyond that time, despite claims to the contrary by the Committee and Mr Bruce Esplin].
- "*It has been suggested that some burning practices may increase flammability by promoting a dense shrub layer*".
- "*Very frequent burns would lower small mammal diversity further, and affect some of the species restricted to dry forests and heaths*" [this would happen with fires more often than every 5-10 years]
- "*More frequent and complete broad-scale fuel reduction burning will have significant environmental consequences*".

- “Patch burning is the technique of burning a carefully planned mosaic of relatively small patches...designed to be effective, not just an unplanned and uncontrolled patchiness [resulting from broad-scale fuel reduction burns]...have the environmentally desirable consequences of maximizing diversity of fire ages in an area, restricting the areas affected by any unplanned fires, and reducing the need to burn any one area too frequently”.

Do we have better information derived from more research conducted in Victoria? Is there any good evidence (as opposed to unsubstantiated opinion) that prescribed burning in Victorian forests, woodlands and heathlands results in effective fuel reduction beyond 3-5 years? Or that frequent fires do not simply add to the problem by encouraging an inflammable shrub layer?

We need an independent review of the research conducted in the 20 years that have elapsed since Meredith’s review. Until that is done, DSE should hold off on any dramatic escalation of broad-scale prescribed burning. Public hysteria should not be driving our actions. We need to be sure that effective measures are applied that will not drive our vulnerable fauna to extinction, yet can prevent disastrous summer wildfires. What we do now will have grave consequences in the long term.

Tolhurst and Cheney (1999) found that dry sclerophyll forest fuel loads in Victoria increase rapidly for 10 years before reaching a plateau level of around 15 tonnes/ha, where decomposition matches accumulation (see p. 58 & 79 of Parliamentary Report). That scenario is in broad agreement with older work cited by Meredith that shows an early build up is rapid to year 3 to 5, then plateaus off, so that there is not much difference between year 8 and year 20 fuel levels. The committee looked at this evidence, and noted on p. 80, Meredith’s (1994) contention that prescribed burning may suppress fire spread for longer than 3 years on less severe days, but omits to note his statement that under SEVERE days that may not occur. The committee suggest that more frequent/intensive burning is needed, without looking at the implications for fauna, some species of which certainly cannot survive under that regime. Yet, the Committee acknowledged that the Fire Ecology Strategy “does not currently account for effects of planned fire on fauna” (p.86).

DSE has conducted good research in Victoria concerning relationships between fire frequency and flora dynamics, but many within Fire Section of DSE have assumed that a fire regime that is “good” for flora must also be appropriate for fauna. A review paper by MF Clarke of La Trobe University entitled “*Catering for the needs of fauna in fire management: science or just wishful thinking?*”(Wildlife Research, 2008) provides a good analysis of this proposition. Clarke concludes that meeting the needs of plant species may not mean that the needs of animal species are met. There is a critical dearth of research – especially long-term studies – on the habitat requirements for fauna, yet fire ecologists and land managers either assume that current data is adequate or they ignore impacts of fire on fauna.

Thirty per cent of native fauna and 44% of native flora in Victoria are threatened with extinction (CSIRO, Environmental Sustainability issues Analysis of Victoria). The draft Victorian Green Paper (Land & Biodiversity at a Time of Change) acknowledges that threat and is concerned to “*develop policy and program directions that will guide the Government’s investment decisions in Victoria’s biodiversity and land management for the next 20-50 years*” (Dr Kevin Love, Deputy Secretary DSE).

About 50% of the State’s forests and reserves are less than 10 years since fire and the ecosystems are still under stress from drought. Further critical refuge habitat has been removed by prescribed burns that are of an intensity similar to summer wildfires. These hot “cool burns” arise because of current political pressure to get much larger areas burned in late summer-early autumn to achieve the new targets. We have seen the effects of this first hand in the Serra Range part of the Grampians in 2007 and 2008. The new burn areas abut large areas burned in the 2006 fires, and they leave no effective unburned patches within each Ecological Vegetation Class unit, conditions which cannot ensure survival of vulnerable fauna species. How much habitat loss can be tolerated before there is an irreversible loss of more fauna species?

HFNC does not dispute the need for some fuel-reduction burning to reduce fuel loads and so reduce the severity of summer wildfire. This must be done in a way that is sympathetic to the environment, achieving both an adequate fuel reduction to protect private assets and the long-term survival of flora and fauna in the forest when severe summer fires arrive. We strongly oppose the current DSE plan to burn very large areas, where any “mosaic” is obtained by chance (if at all), and cannot ensure that unburned areas of an adequate size for fauna are retained in each EVC unit in the burn area. We must do better than that.

There is a contention that frequent burning actually makes matters worse by creating a flammable shrub layer. There is also some doubt whether such burning does materially prevent fires from spreading on extreme weather days in summer. The Parliamentary Committee cites several examples that support that contention but ignore cases where it did not. There is always the possibility of attributing a reduced fire spread to a prior fuel reduction burn when there are other, sometimes unrecognized, factors that may have also been influential. That is why it is necessary to look at the negative evidence – the cases where no such effect was found – to get an unbiased assessment of probability.

Our aim is to get a better outcome for endangered fauna. That can be achieved by genuine patch-burning on an appropriate scale, time interval, season and pattern – but we are yet to see that applied. A true mosaic burn must leave unburned sections within each EVC unit that exists in the planned large burn area. Thus, a Potoroo, Brown Bandicoot or Heath Mouse that must have dense understorey to shelter in, cannot survive in an unburned dry, stony ridge, yet that is what Mr Geoff Evans (DSE Horsham) appears to regard as acceptable in the Grampians NP (see Hamilton Spectator, 29 May, 5 June & 14 June 2008). Regrettably, if the Parliamentary Committee's suggestions are implemented and/or current DSE practice is not amended, extinctions of vulnerable fauna is certain, contravening both Victoria's F&FGA and the Federal EPBC Act. Those who manage prescribed burning in our reserves cannot now plead ignorance of these dangers.

HFNC suggest the following approaches to fire management and environmental impact:

- Pre- and post-fire fauna assessments and integrated predator controls are required for each burn.
- The presence of vulnerable fauna species must be considered when formulating a fire plan.
- An effective mosaic (a “patch” burn) must be achieved in each EVC unit within the prescribed burn.
- Prescribed burns must not abut large, recent wildfire burns or large, recent prescribed burns.
- Portable long-length sprinkler systems, as trialled at Wilson Promontory, would allow back-burning from a wetted line, enabling unburned sections to be left within the larger burn area. This allows the creation of a true mosaic with unburned areas large enough to sustain fauna.
- Burning later in the day or evening when conditions are milder in order to reduce fire intensity.
- Review the procedures used by the Fire Section of DSE when applying prescribed burning, in order to protect old hollow-bearing trees that are so important for wildlife. This would include protecting significant old trees by “candling” (burning loose bark on trunks) and removing debris from beneath hollow-bearing trees before fire is applied. (We note the progress made by DSE in this matter).
- DSE Code of Practice for Fire Management on Public Land (2006) needs to provide specific instructions for environmental management, including protection of habitat trees (the 2006 revision of the Code is sadly remiss in this regard, with general statements that are meaningless to the operator in the field – see Section 1.10.5 of the Code). What is required are direct statements about what fire crews should achieve or protect from fire – e.g. protecting hollow-bearing old trees.
- Multiple burns/staged timing of burns, e.g. burn around edges at a time of low risk and burn the remainder later.
- Back-burns after wildfires – any extensive back-burn should aim to leave patches unburned as fauna refuge (David Lindenmeyer, ABC Radio National, 14 June 2008). That is not aimed at by DSE.
- No camp fires in Reserves, Parks and Forests during the fire season – such a ban applies in most other States. A campfire at the Fulham Streamside Reserve on the Glenelg River escaped and swept through the Black Range State Park too, creating much damage in both reserves, particularly from bulldozers that were used to push over scores of large, hollow-bearing trees that are becoming a scarce natural habitat resource.
- Effective strike forces for tackling wildfires in times of extreme weather conditions – rapid response teams are imperative, with water bombing aircraft available to assist. Canada, in particular, has recognized the need for such an expert “commando” unit to suppress wildfires before they develop.
- Buffers are needed in private land, where new buildings are not permitted adjacent to public lands – that would provide better protection for private assets and obviate the call for altering the fire-zone status of adjacent forest or reserve. Some landholders want a 500-m break inside the reserve but that would be hugely expensive, ineffective in severe fire conditions and environmentally most destructive, since it would eliminate some EVCs from reserves such as the Grampians/Gariwerd NP. The outwash slopes provide narrow strips of heaths that adjoin private land, and that habitat – and the vulnerable fauna such as Potoroo, Heath Mouse and Brown Bandicoot – would vanish.

Yours faithfully

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Hamilton Field Naturalist's Club