Sub 367

23 May 2003

The Chairman
House of Representatives Select Committee Inquiry
Parliament House
CANBERRA ACT 2600

Dear Sir/Madam,

BUSHFIRES

My interest in this matter began on 30 March, 1995 when a cloud of black smoke reached Canberra from a controlled burn-off in what has since become the Brindabella National Park in the Brindabella Range east of Wee Jasper.

The point of this submission is to argue that fire protection should be undertaken in and around Canberra, if Canberra's assets need to be protected, not 30 km away in the Brindabella National Park or in my garden in the Brindabella Range.

Thank you for the opportunity to have my opinion considered.

Yours faithfully,

Margaret Logan

CONTENTS

MYTHS

- Regeneration

There is a widely held belief that Australian plants need fire. I have never found any proof that this is so even though for years I have been growing native plants from seed. For example, I have a crop of Mountain Ash (Eucalyptus regnans) seedlings. Mountain Ash die if they are burnt as shown by the death of 'El Grande' recently in Tasmania (The plight of El Grande 2003, 15), (Appendix 1).

My Mountain Ash seeds sprouted in the refrigerator after being kept there for 6 weeks - not at all fire like. A copy of Appendix II from (Hall 1972) and a copy of Appendix IV from (Brown and Hall 1968) are attached (Appendix 2). Both copies list many Australian plants and detail any treatment if required for their seeds to germinate but fire is not mentioned.

It is frequently claimed that Australian plants evolved with fire and that many of their particular characteristics prove this. A good example of the broad range of these claims is in Episode 6 of the ABC TV series Australian Environmental Studies: The Unique Continent entitled "The Burning Bush" (1992).

That TV program said 'Many plants have evolved to actually require fire for regeneration...' and 'Many of these same plants have also developed characteristics that enable them to survive fire and regenerate after it.' Beliefs like this seem based on the fact that some of the Myrtaceae family, principally the eucalypts, have epicormic buds, lignotubers and woody fruits.

However, it has been observed in Canberra that such regenerative characteristics are not at all exclusive to Australian plants but to some conifers as well (Warden 2002), (Appendix 3). Given how badly Pinus Radiata and other conifers burn and die it came as a surprise to experts that North American conifers had regenerated after being burnt in December, 2001, near Fairbairn. The Californian Redwoods subsequently began to 'sprout lush new growth either all along their trunks or from their bases'. So they too have epicormic buds and lignotubers!

> One odd possibility, Dr Boden mused yesterday, was that given that the trees occur naturally in wet places where fire may not be any more likely than flood the Redwoods may even have used a response developed to meet damage by Californian flood to survive.

Perhaps it is just as likely that our plants also developed independently of fire; possibly to survive droughts or the wetness of an ice age, or

Some scientists hypothesise that the earliest evolution of characteristics enabling flowering plants to exploit the new, dry, Australian conditions developed in response to a different stress, lack of soil nutrients. (Plants through the Ages, 1992).

- **Diversity**

Another myth is that fire is required to maintain diversity.

Costermans (1981, 35) contains an interesting contradiction concerning how vegetation will change if burnt and if not burnt:

3. Frequency of Fire

> This is the most important selective factor. Species which regenerate only from seed must have sufficient time to reach seed-producing maturity before another fire if their populations are to survive. As an example, Mountain Ash (E. regnans: 338) needs at least 15-20 years to produce adequate seed; more frequent fire can eliminate it.
>
> However, the various life-spans of different species are also significant. Eucalypts may live for hundreds of years; in contrast, most wattles have relatively short life-spans of 10-25 years. If, in a relatively fire-free area, fire does not occur within the life-span of a forest species such as Alpine Ash (E. delegatensis: 339), its populations may die out after 300-400 years and be replaced with those of other species. Such an outcome may be observed particularly in higher-rainfall montane areas where Alpine Ash and other eucalypts have given way to a self-perpetuating community of 'rainforest' species such as Myrtle Beech (Nothofagus cunninghamii: 150), Sassafras (Atherosperma moschatum: 178), Blackwood (Acacia melanoxylon: 327), and others; these constitute the climax of the succession.

Following from this it is obvious that some species must die out, whatever the frequency of fire, or none. In the above example it will either be the Eucalyptus delegatensis or the the short-lived (less that 15 years) wattles: that plant communitity cannot remain unchanged.

Should rainforest triumph then there will be a gain in diversity, although this is not the common view, because in rainforests 'You will find one of the greatest numbers of species of plants on earth'. (Rainforests, 1994), (Appendix 4).

> Though rainforest covers less than 1/2 of 1% of Australia, it contains over 50% of our plant species and a large proportion of our insects and other animals.

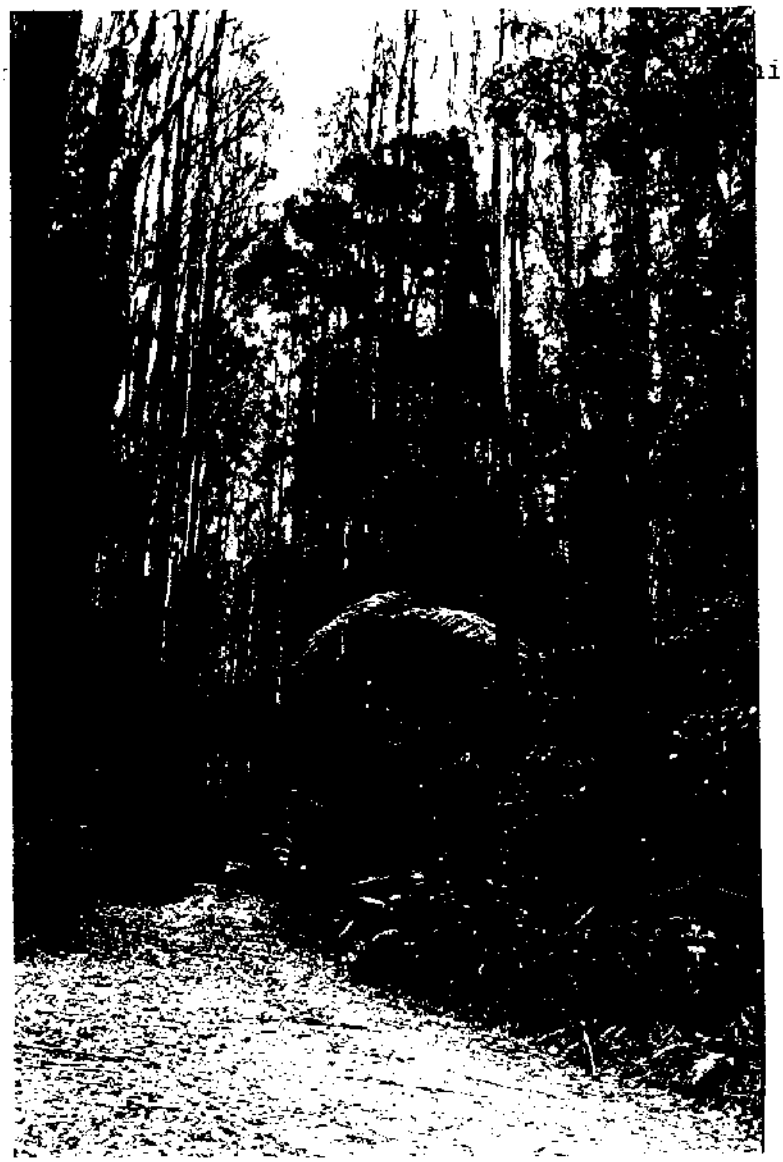
> The dark topsoil of A horizon ... is rich in humus which has come from decaying plant roots, leaves and dead animals. In nature it is constantly being built up by further leaf fall and animal matter. As the humus sets down it releases nutrients, or plant foods. The humus, or organic matter, not only provides plant foods but it also improves the tilth, the crumbly nature of the soil (Levy n.d., 3').

This is the humus that supports the beautiful flowers which grow there.

There are other ways to ensure there is no humus to release nutrients to the plants, apart from regularly burning the leaf litter in fuel reduction exercises. One can employ a bulldozer to scrape it clean in order to form a fire break.

This can be followed by raking up any organic material that falls on the cleared earth. This was the fire break that saved my building in the McIntyre Hut fire of 18JAN03. But it only needed the fire break, not the whole forest to be routinely devastated with bushfires and send all the nutrients up in smoke.

a lar[illegible]imals.



The forest in this photograph, taken near Healesville, contains Mountain Ash (Eucalyptus regnans, the tallest trees) which are all the same age, 63 years old. The previous generation of Mountain Ash all died in 1939 because, like El Grande and Alpine Ash, they cannot tolerate fire. Their seeds grew after their parent trees died on Black Friday.

But suppose there were no seeds! There would be none if the fires were more frequent than every 15-20 years which is the maturation age range for Mountain Ash.

The frequency of fire was much greater next door to my piece of forest near Wee Jasper. Next door is the Brindabella National Park which has been burnt frequently while mine has not. Where my land meets the Park boundary it is 29.5 km as the crow flies from Black Mountain Tower but the last controlled burn in the Park "caused a pall of smoke to cover parts of Canberra..." (Macdonald and Kazar 1995, 4), (Appendix 5). ABC local radio 666 broadcast reassuring messages at lunch time on 31Mar95 because ash was falling over

Below 1m. What the newspaper article does not say is that the fire went west for a week towards the Goodradigbee River before it burnt itself out.

I photographed the consequences of that controlled burn because it was a crown fire, not a "low intensity" fire such as Alan McArthur recommended for fuel reduction (Brown and Hall 1968, 178 , (Appendix 6).

PROBLEMS ASSOCIATED WITH FUEL REDUCTION

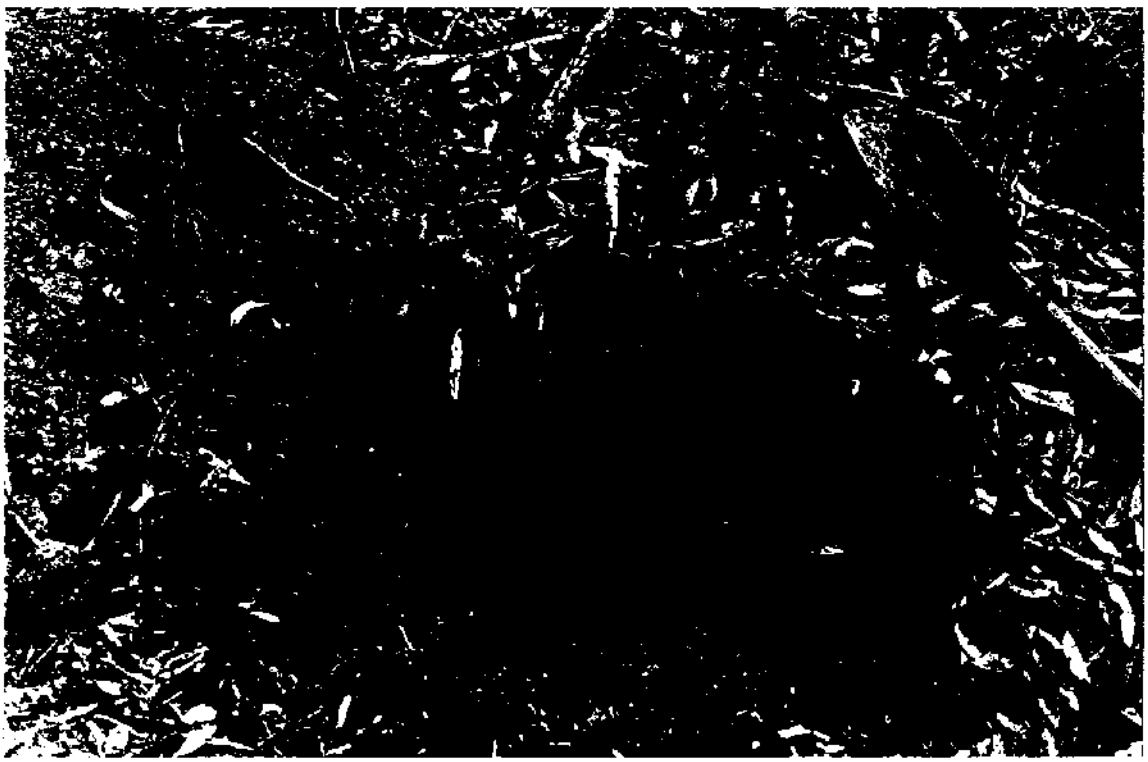
The photographs are arranged in categories to illustrate some of the problems associated with fuel reduction (NSW Bush Fire Services, The Burning Question, 12), (Appendix 7).

- **Removal of an integral and critical segment of nutrient cycling.**

A full description of the nutrient cycle is available for rainforests (Rainforests 1994) but not, it appears, for wet Sclerophyll forests. However, the concept is exactly the same and the full extract is attached as (Appendix 8).

> Narrator:
> It's hard to believe, with all this lush growth around that the soil a rainforest grows on is actually quite infertile. So how can it support such a variety of living things?
>
> Presenter Malcolm Florence:
> And the answer is here, in the leaf litter. This is where the nutrient that feeds the whole ecosystem is created.

This photograph of "hole with spade" shows the soil profile in my area of the Brindabella Range.



- **Removal of habitats of small mammals, invertebrates and soil microorganisms.**

The mammals and lyrebirds have a desperate need for cover, particularly to protect them from the red fox and cats. Foxes prefer to walk in open areas such as along a track or fire trail but if the whole country side is open then there is no refuge for the wildlife. This type of vegetation once provided protection.

The situation of the lyrebirds is/was (I do not know if any survived) critical because they are poor flyers and nest close to the ground. There used to be lots of them because everywhere I looked was scratched over.

It was only possible to view this aspect of the middle stratum of the forest because of the 30MAR95 controlled burn which cleared the vegetation in the foreground. The lyrebirds require this density of undergrowth so that it is difficult and uncomfortable for the foxes and cats to pass through it and hunt them. It does look like a lot of fine fuel but it is over 30 km from Canberra .

The fire trail was used as a fire break to mark the boundary of the controlled fire. It can be seen from the size of all the felled-by-fire trees that burning was done often enough for there to be no mature trees to provide seed for regeneration. It will take some years for enough or even some cover to return for the hunted creatures.

The invertebrates and soil microorganisms must also have adequate cover to survive. The lyrebirds and small marsupials hunt the invertebrates and here is a site where lyrebirds scratch to find tiny creatures. They use this site so frequently that nothing grows.

The invertebrates and soil microorganisms must have a moist environment and the leaf litter as seen in the above photograph acts as mulch. It is a necessary input to the humus in the topsoil. Another necessary input is adequate rainfall. The rainfall map (Appendix 9) shows that the further into the unbroken forest, the higher the rainfall; my rainfall is 50% higher than in Yass which is surrounded by cleared paddocks. The mountains are important to catch rain but I believe that the vegetation has a much greater influence than acknowledged. When I lived on the heights of Honiara, which was, relative to the rainforest, quite dry, I could easily see the storm clouds follow the line of the trees. As the trees had been cleared from Honiara, the clouds usually traced an arc around the town.

The importance of a reasonable rainfall in the context of fires, supposedly controlled or otherwise, is that a lot of moisture is held in the mulch. That mulch moistens the soil which in its turn keeps the vegetation supplied with water. This water cycle does not work if the mulch and humus are regularly incinerated into ash.

Which is more important - fuel for fire (to be removed) or fuel for a sustainable nutrient cycle (to be preserved)? The effectiveness of moist mulch can be proven by the fact that although my block was burnt out by the McIntyre Hut fire this year my forest was less damaged than was the adjoining, regularly burnt country during the 1995 controlled burn.

- **Soil degradation, erosion and fertility.**

These factors are affected by the comments made in the section above regarding habitat for the smallest organisms, those that break down the organic matter including the fungi, worms, bacteria and tiny multi-legged creatures.

If a controlled fire is too hot it burns the organic matter in the soil and other living things such as this tree where the fire burnt out the tree's root, 300 mm into the earth.

The effects of erosion can extend well beyond the boundary of the controlled burn. If the soil is totally exposed it can be washed away with rain, leaving just stones and rocks as in the next photograph.

The soil is washed to the lowest point via gullies, creeks and rivers until it reaches a dam like this one (Levy n.d., 9) in (Appendix 10) and silts it up.

Out of curiosity, I read the Encyclopaedia of Life Sciences to understand exactly what the microorganisms in the soil are and what they do. When one examines any part of the ground in unburnt bush it is seething with tiny creatures but more is the life one cannot see. I have attached the chapter labelled 'Soil Ecology' (Appendix 11) which explains '... soil - a complex, dynamic, living system that covers most of the terrestrial surface of the Earth, and without which there would be no life' (Hanson c1996, 1271).

This article makes understandable why the soil is a living organ, the Earth's skin, and must be protected.

> 'More animals live in soil than in all the other environments of the Earth put together'.
> '... more creatures live below the surface of the Earth than above.'
> 'Bacteria are the most abundant life-form in most soils and are responsible for the decay of crop residues'.
> 'Other microorganisms ... include algae and various fungi ... ' 'Slightly larger than these microorganisms are the nematodes ... ' 'Ants abound ... '
> 'Earthworms do an essential job ... ' (Hanson c1996, 1271-4).

THE EFFECTIVENESS OF HAZARD REDUCTION BURNING

Little is said regarding the extremely short period for which hazard reduction is effective (CSIRO n.d.), (Appendix 12). For example, hazard reduction of annual grasslands is effective only for the current dry season. Therefore all grasslands would need to be burnt every year so that 'fire behaviour may be modified'. But just as I do not want my garden burnt the local graziers would object to losing their feed.

According to the CSIRO pamphlet, the longest period for which hazard reduction may modify fire behaviour to any extent is 10 years.

'Dry Eucalypt forests	Generally will not support fire for 1-2 years after treatment. Will reduce rate of spread and fire intensity for 5-10 years.
Moist Eucalypt forests: (warm, coastal)	Burning primarily to reduce flame heights. Rate of spread may be reduced for 1-2 years. Flame heights may be reduced for 5 years or longer.'

This is not a compelling argument to support the repetitious burning of forests.

The CSIRO findings are based on burning experimental plots but the real life situation is that burning the bush does not prevent another fire soon afterwards.

For example, the article 'Burn-offs to clear debris' (Appendix 13) in The Canberra Times (14MAY03, 7) pictures a "wall of fire during a hazard-reduction burn". But this "pine-forest debris" was burnt in the January firestorm so its fire modifying effect in less than four (4) months may have reduced the wall height from, say, a skyscraper wall to an office block wall but the flames in the picture with the lower flame height would still be uncontrollable if there were severe weather conditions; windy, hot and dry.

From memory, the Royal National Park near Sydney, since being severely burnt some years back, now burns every year, because it was so dried out in the initial fire.

Megan Doherty (2003, February 8, pp. C1, C3), (Appendix 14), reports on the current frequency of fire in the Kosciuszko National Park:

> "A lot of the fires have been burning in areas that have been fuel reduced up to two times in the past 12 months," Woods said.
>
> "So some areas have had three fires in 12 months and they're still burning with great intensity".

Rural fire losses caused by Hazard Reduction Burning can be disastrous. This extract (Brown and Hall 1968, 273) illustrates the inherent danger in grass.

> 'The Mangoplah Fire, which originated from railway burning-off operations south of Wagga, burnt 960,000 acres of some of the most highly developed agricultural land in Australia and did damage estimated at $14M. This fire is of world significance insofar as it is the largest recorded area burnt by a fire originating from a single source. To give some idea of the tremendous damage which may be done by a grass fire, the Mangoplah Fire burnt an area of 850,000 acres between 7.30 a.m. and 2.30 p.m. on 25 January 1952. The fire thus burnt over 100,000 acres per hour and caused monetary losses in the order of $1,400,000 per hour.'

RURAL FIRES ACT 1997 No 65

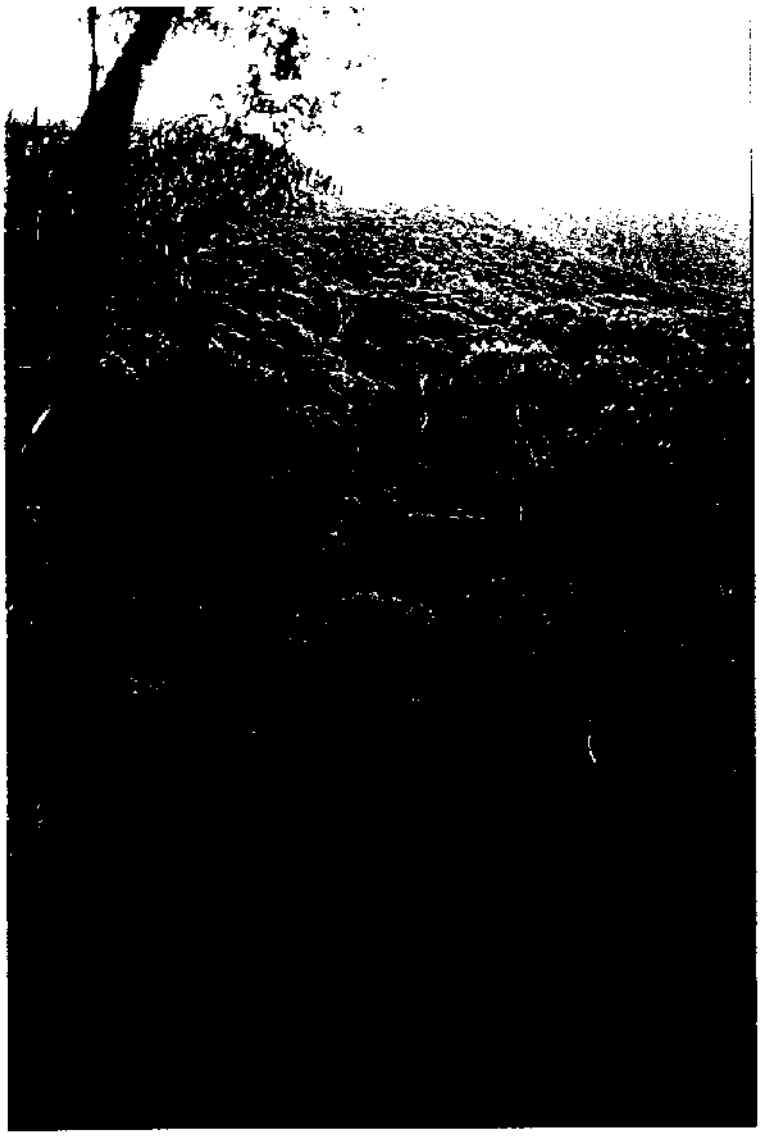
The earlier version of the above Act was The Bushfire Act 1949. The impact of this legislation upon the individual is overwhelming on two accounts: it can be used to make unreasonable demands and one cannot appeal against them.

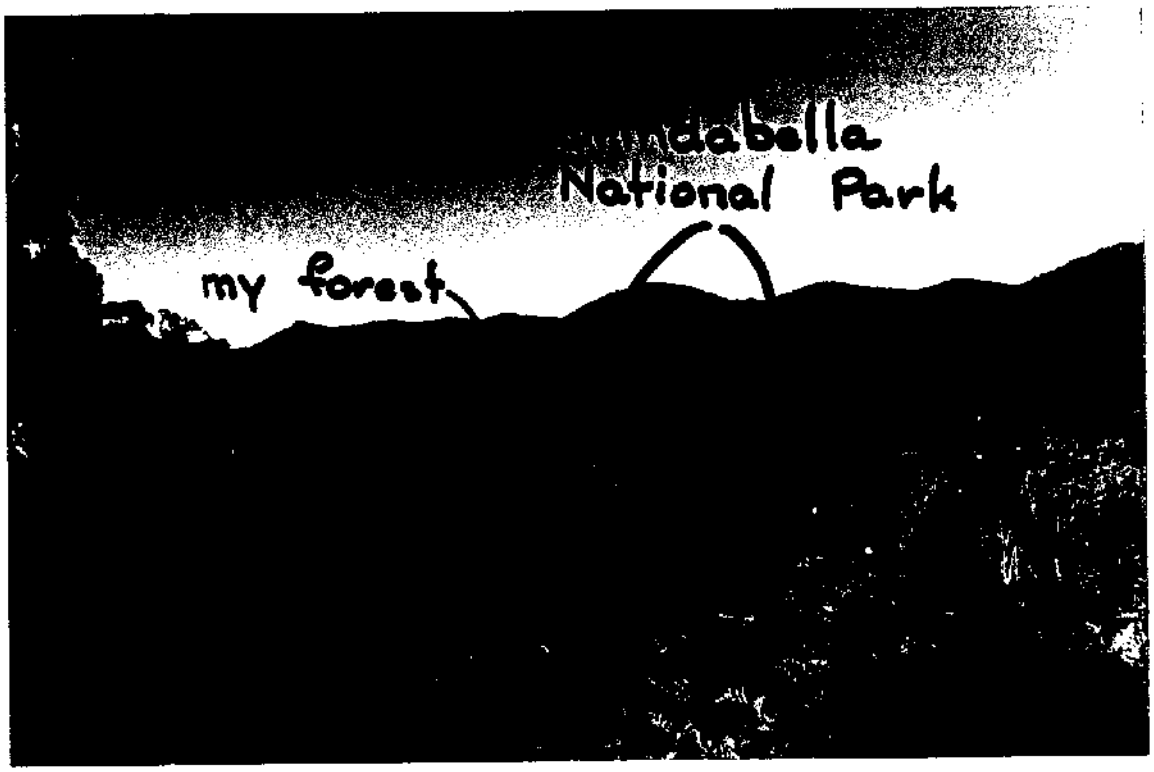
The attached letter (Appendix 15) explains that 'no appeal mechanism exists'.

The unreasonable demand against which I wished to appeal was issued under the earlier Act. In this later 'Section 66 Notice', dated 21MAY98 (Appendix 16), the General Manager of the Yass Shire Council writes:

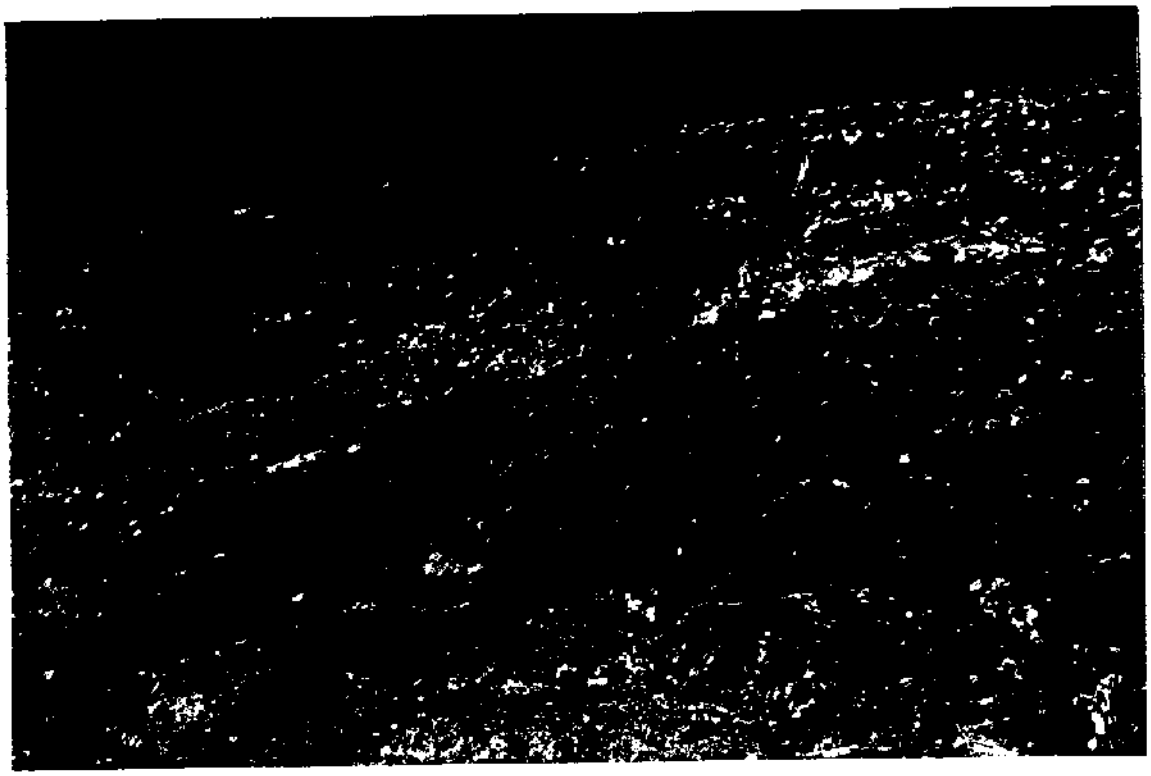
Work to be carried out:	Land clearance by bush fire hazard reduction work.
Method of removal:	Light a fire to reduce combustible matter.

I believe that such a demand was unreasonable because forest covers both my 80 ha block and all the surrounding area as shown in these photographs. The first view is taken from my block looking towards the neighbours and the second is looking towards the area which I am required to clear. It is environmental vandalism to clear the Brindabella Range, the site of my block. Also, as a senior citizen, it is a big demand on one's physical capabilities to clear it all as there are 500 tonnes of vegetation per hectare, or so I have been told.





The land which lies on the Yass side of Wee Jasper has been cleared by farmers and looks like this:



I find even more distressing and unreasonable the demands made under Section 44 (2) of the Rural Fires Act 1997 (Appendix 17). Some local members of the Cavan rural fire brigade tell me (these are not their words but how it comes across) that they interpret Section 44 as meaning that they can enter my property at will, at any time and do anything they please. All my rights as a property owner are totally eliminated by this assertion. Whether it is intended by the Act or not, that is the effect because ultimately might is right.

That is the reason I did not return in January 2003 from Victoria to attend to spotting on or around my building from the "firestorm"; I anticipated that the fire brigade members would turn me away claiming to have evacuated the area. I could not bear the prospect of the emotional anguish that would ensue so let nature take its course. My preparations for fire were, in the event, effective.

My building showed no signs of fire although the glue in a plastic down pipe gave way in the radiant heat. Because my vegetation had not being burnt before it fared well.

It certainly suffered less damage that the Park next door in the 1995 controlled burn and the pine trees, after the January fires, nearer to Canberra, pictured on the next page.

CT 17MAY03 P.2

Burnt forests seeded to stop erosion

Help is coming from above for 7000ha of burnt-out forests — aerial grass sowing starting this week to minimise soil erosion.

ACT Forests has called in a Grumman cropduster from Goulburn to drop 82,000kg of ryegrass/fescue and clover mix on damaged plantations in Uriarra, Pierces Creek and the steeper areas of Mt Stromlo to protect soil while the Government decides on the future of the territory's forest industry.

Planning manager with ACT Forests Ian Shakespeare said the seeding would hold the topsoil in place in the face of possible winter storms.

Mr Shakespeare said the aeroplane, which could carry 700kg of seed at a time, would sow the areas from a height of 100ft.

ACT Forests lost 10,500ha to the January bushfires and those areas not sown aerially would be protected by staked straw bales and other measures.

The Department of Urban Services said aerial application of the seed was the most cost-effective distribution method.

Sowing would continue over the weekend, weather permitting.

❑ The ACT Government needed to take on board constructive criticism of emergency services, and not just shoot the messenger, the Liberals said yesterday.

An Auditor-General's report issued this week slammed emergency services management.

Opposition spokesman Steve Pratt said the Government had to take on board the comments, instead of being defensive and ignoring important advice.

Experienced bushfire fighter and captain of the southern brigade, Val Jeffery, said the report seemed positive and practical.

A cropduster spreads seed over a stark Uriarra Forest yesterday. Picture: GRAHAM TIDY

In response to the Section 66 Notice I did do some burning along Doctors Flat Road for about 1 km until I neared the Brindabella National Park where the regular hazard reduction fires had changed the vegetation. The ground was covered by one species, a little bush that took off like a fire cracker with high flames and was quite uncontrollable because I was by myself. This photograph shows the volatile, inflammable shrub that replaced the original vegetation in the Park next to our shared boundary.

Fortunately the fire burnt back into my moist vegetation and died out.

A DIFFERENT POINT OF VIEW

Farmers in the Wee Jasper/Cavan area say that they want hazard reduction burning every five years in the Brindabella Range to destroy the habitat so that dogs and other feral animals cannot breed; it is an indirect way of protecting their sheep. The consequence of destroying the dogs' habitat is that the wildlife is eliminated. The sheep graziers could ease unemployment by hiring a shepherd to stay with their flock by night, or buy a malamute or alpaca to protect them.

There is a strong push from farmers Australia wide to attack national parks and they are too successful having a lobby group with the deputy prime minister at their head. I come from farming stock and do not agree with many of their views. Attached (Appendix 18) is an extract (Moore 1999, 69, 70-71, 132) which clearly conveys the attitude of local farming families towards wildlife.

'The residents of Bulga Creek, who were mainly families of free selectors, had much in common with their neighbours at Uriarra and combined for social events such as house parties, sports meetings and wallaby drives' (Moore 1999, 132).

'William Davis' other main sport was shooting. He was an excellent marksman and led parties each year on shooting expeditions to the mountains west of the Murrumbidgee River. Some idea of the numbers of the red rock wallabies which were in the area can be obtained from the published reports of these expeditions. ... 184 wallabies shot in 3 days ... 558 wallabies were shot over ten days ... 1,507 wallabies and 11 wallaroos ... a further 300 wallabies.

'In 1875 ... in the Naas hills where 1,723 wallabies, 16 wallaroos and 3 snakes ... 1,400 wallabies ... 1,806 wallabies and 23 wallaroos fell to their guns. ... The red rock wallaby, once so numerous, is now extinct in this area and has been so for many years' (Moore 1999, 70-71).

WEALTH TO SHARE

On the Australian mainland and Tasmania, 10.08% (2002) of the land is held in "Terrestrial Protected Areas" which include national parks, wilderness, state reserves, historic sites, nature reserves, state recreational areas etc. but not Indigenous Protected Areas. In NSW 6.76% (30JUN02) of the land is open to public access.

Sixty-four per cent (64%) of the total land is farmed. That figure was once higher but some former agricultural land has passed to aboriginal ownership. A total of 225,000 persons are owners of farms and/or are employed on farms, even if unpaid. The above figures were obtained by ringing the relevant government departments.

As such a small percentage of the land is open to public access I object to the accusations that are being directed towards National Parks as if they were the primary source of fires and ferals. Whoever or whatever is to blame for the farmers' problems there must be some areas left unspoiled for other living beings in this country. The majority of Australians live in the six state capitals: 63% (12 million) in 2001 ("Landline" ABC TV, 2MAR03), and to experience healing activity or solitude in a natural environment very few areas are accessible to them. The public is excluded from farming land.

If 225,000 farm workers/owners and their families enjoy exclusive use and control of 64% of the total land area then surely the 10% could be left alone for the other 19 million people. The farmers are trying to grab control of that too.

Our Katrina, our National Party state member, spells out what the farmers want, including burning and the "reintroduction of grazing in National Parks", in The Yass Tribune (Katrina calls 2003, 9), (Appendix 19).

Humans need contact with the natural world. Just consider the misery that permeates our urban society: the suicide rate for young men has tripled (Canberra Times 1APR03 p.16) and they kill themselves & others in cars. There are high rates of depression, domestic abuse of women & children, drug abuse including the legal, excise paying drugs. It is a worry that our society is so unbalanced that it is necessary to pay out 42% of our total national budget (2003), that is $1.432 billion per week, in Social Security and Welfare.

To regain some balance many people seek a rural retreat. Along Doctors Flat Road, Wee Jasper, are two institutions which were developed to assist young people in recovering their spirits and well-being.

> 'Mountain Trails is a non denominational Christian camping organisation. Their purpose is to provide a safe, caring and relaxed atmosphere for self discovery and good old fashioned fun. ... School groups from Sydney and Canberra use the programs for their outdoor studies curriculum.' (Mountain Trails 1997, 59).
>
> 'Project Saul is a community based youth at risk program supported by the Police.'
>
> 'The project primarily targets youth at risk, involving wilderness therapy to facilitate change with a focus on early intervention and crime prevention.
>
> 'Youth at risk are those youth who have self-esteem problems and/or are in direct and immediate distress as a result of substance abuse, family conflict, domestic violence or other extreme social or physical difficulties.'
>
> 'The Eagles Rest Outdoor Education Centre is a registered charity supported by many organisations including, ACTEW, TRANSGRID, The Queen's Trust, The Southern Cross Club and Calvary Hospital to name a few'. (Project Saul: Showing a better way 2000, 8).

Another establishment in our road, "Kangaroo Flat", offers "wilderness cottage accommodation". A brochure is attached (Appendix 20) with a diagrammatic representation of the delights of the Wee Jasper area.

So do not make decisions that burn and destroy our natural remnants. One day our leaders will understand how vital is the people's connection to nature.

ERRORS OF JUDGEMENT

The path to hell is paved with good intentions and this country has a litany of them. Here is a small sample as a warning of how readily one can cause harm; in every case below there was inadequate knowledge.

- **Soldier Settlement**

A.G.L. Shaw in his chapter 'History and Development of Australian Agriculture' describes the monumental blunder of the small-scale farming policy implemented after World War I (Williams 1967, 17):

> 'Land settlement schemes for ex-soldiers and British migrants were pushed ahead without preliminary soil surveys and other investigation and without much use of expert scientific and technical knowledge. Emotional gratitude encouraged a policy of putting ex-servicemen on the land, but it was so meanly implemented that men were settled on small blocks, often on mediocre land, and usually over-capitalised in the high prices paid for them, in circumstances in which even if the holder had been "a practical farmer, capable and industrious", it would have been impossible for him to make a living. Still this was only a particular application of what Professor Wadham had in mind when he complained that "of all the foolish policies of land settlement which have been advocated for general application in many parts of Australia, the endeavour to create a system of small-scale farming is probably the most stupid"'.

- **Land Degradation and Extinction of Animals and Plants**

> 'Land clearing throughout NSW is continuing at an excessive rate with the state government either unable or unwilling to enforce legislation brought in to control the problem ...'
>
> 'Land clearing is the greatest cause of land degradation and extinction of animals and plants throughout NSW'...
>
> 'More than 60,000 hectares are being cleared annually ...
>
> 'More than 110 animals and plants listed as nationally threatened - which is 80 per cent of all nationally threatened species - are declining as a result of land clearing.' ...
> (Western Magazine 18FEB03, 15)

- **Salinity**

> 'Over-clearing of surrounding farmland is causing a cancer which is now affecting more than 20 towns in the central belt (in the Western Australian wheat belt).

'... one of Australia's most pressing environmental problems ...'

'More than half of Australia's arable land is salt effected in some way. In the West Australian wheat belt the problem is especially severe with 200 hectares, about 40 football fields, being ruined by salt each and every day.

'Experts say it will cost hundreds of millions of dollars just to turn that problem around, money not likely to come from any Telstra sale'. Salinity. (1996 June 4 or 6) The 7.30 Report, ABC TV.

- **Blackberries**

Don Burke presented an item 'Baron Ferdinand von Mueller' on Burke's Backyard (23FEB96), WIN TV. Von Mueller was director of the Melbourne Botanic Gardens from 1857 to 1873:

'Not only did he do an enormous amount for conservation but he also was part of those acclimatisation societies so he wandered around the countryside, particularly in Victoria here, with **handfuls of blackberry seeds, throwing them everywhere** so that they would grow up and travellers would have something to eat. So I suppose he has got something to answer for.

'Baron von Mueller really was one of our most famous botanists, ever. And particularly, he was famous around the world, so he finished up with a huge number of awards'.

Blackberries have invaded both our bushland and farmland.

- **The Railway Gauge Muddle**

When Australia's railway networks were developed in the nineteenth century, three different gauges were standardised in the states; 3 ft 6 in, 4 ft 8½ in and 5 ft 3 in. A full account is in (Reader's Digest 1971, 34), (Appendix 21).

- **Rubber Vine**

'Rubber vine was introduced into Australia as an ornamental plant ... a 1990 survey revealed it covered 700 thousand hectares in Queensland'. 'Going to Blazes' on Landline (9NOV97), ABC TV.

- **Paterson's Curse**

'Paterson's Curse was named after the Paterson family of Albury, NSW from whose garden it reportedly first spread'. (Burke's Backyard 14JUN96 WIN TV)

- **House Mice**

House Mice "have been described as the ultimate mammalian 'weed'". (Berry cited in Menkhorst 1995, 210).

> 'Perhaps the major role of House Mice in bushland is as **a primary coloniser after disturbance such as fire** or clearance. (Studies in coastal heath and heathy forest (Newsome et al. 1975, Fox 1982b, Fox & Fox 1984) have shown that House Mice successfully invade recently burnt or cleared sites and breed there within a year of the disturbance. Populations can grow rapidly, but once the vegetation becomes suitable for colonisation by native small mammals such as the New Holland Nouse, usually at about five to six years old, House Mouse populations decline rapidly (Fox & Pople 1984)'. (Menkhorst 1995, 211).

Deborah Knight reporting in 'Taking the Bait' on Landline (2NOV97), ABC TV:

> 'The 1993 mouse plague, is south eastern Australia, is estimated to have cost the community more than $125 million in lost production and direct costs."

- **Cats**

> 'Feral populations of Cats probably became established in Victoria shortly after initial settlement by Europeans. The spread of Cats increased during the 1880's when **they were deliberately released in the forlorn hope that they would help control plagues of European Rabbits** (Rolls 1969)'. (Menkhorst 1995, 242).

- **Red Foxes**

> 'Red Foxes were introduced to Victoria in the mid 19th century by enthusiasts of the hunt (Rolls 1969).' (Menkhorst 1995, 238).

> 'Foxes are now common predators in Australian heaths and forests, but they forage preferentially along existing tracks and trails and not in dense undergrowth (N.H. Robinson, pers. commun. 1986). **Fire would therefore permit more widespread hunting until a dense vegetation cover had regenerated**'. (Whelan 1995, 227)

> 'Less than 20 Red Foxes were introduced to Australia in the 1860's for hunting ... since then they have colonised all but Tasmania and the north of Australia.' (Burke's Backyard 14JUN96 WIN TV)

- **Mosquitoes**

Changing the natural environment may result in unintended consequences. Canberra is my home town and after World War

II we lived in Griffith where there were no mosquitoes. Canberra has mosquitoes today because Lake Burley Griffin provides vast areas of still water, a mosquito breeding habitat.

Mosquitoes cause more death and illness throughout the world than any other insect.

- **Bufo marinus**

  'In 1935 the Queensland government imported the South American cane toad to eat scarab beetles which had been plaguing their Queensland sugar farms: the experiment was a failure but the toad was a great success'. (60 Minutes 4MAY03 WIN TV)

CONCLUSION

Deliberately and repeatedly burning the country, thus damaging the soil, its vegetation and wildlife is immoral. The appalling extent of land degradation should be sufficient to convince you not to continue **managing Australia's environment by trial and error.**

If there is any doubt in your minds about the inevitable damage fire causes fauna and flora, borrow a drip torch and burn the courtyards at Parliament House and also your own gardens. Observe the reactions. Repeat every few years. It is not a one off but a routine that is being proposed by the burners.

The damage caused by burning to reduce fine fuels is irreversible, just as we have been unable to fix rabbits, adolescent male suicide rate, the Stolen Generation, pollution, chemical waste, sewage pumped into rivers and the ocean from where we harvest our fish, weeds, erosion, wheat streak mosaic, and now we are determined to bury radioactive material above our underground aquifers.

May we learn from previous mistakes and not take the environmentally damaging path for short term political gains.

The solution is to develop a 'Bushfire Survival Fire Safety Plan' for every home. Victoria has developed a practical scheme called Community Fireguard and local councils encourage residents to participate. The pamphlet from the Shire of Yarra Ranges labelled 'Your life! Your Property! Your Decision' (Appendix 22), has it all organised (note the TWO Fire Radio Stations!).

REFERENCE LIST

Brown, Alan and Norman Hall. (1968). Growing Trees on Australian Farms: The use of trees for ornament, shade, shelter and timber production in the coastal and tableland areas of temperate Australia, including planting in streets, roads, parks and reserves; together with a chapter on rural fire control. Canberra: A.G.P.S.

Costermans, Leon F. (1981). Native Trees and Shrubs of South-eastern Australia. Sydney: Reed New Holland.

CSIRO. (n.d.). The Effectiveness of Hazard Reduction Burning in Reducing Fire Intensity and Assisting Fire Control Operations. Canberra: National Bushfire Research Unit CSIRO. Pamphlet.

Doherty, Megan, 'Death in the wild', The Canberra Times Saturday Forum 8 February 2003, pp. C1, C3.

Hall, Norman. (1972). The Use of Trees and Shrubs in the Dry Country of Australia. Canberra: A.G.P.S.

Hanson, B. (c1996). 'Soil Ecology'. In Encyclopedia of Life Sciences. New York: Marshall Cavendish. 9: 1271-1274.

'Katrina calls for new approach to Bushfire Management'. (2003, 26 February). The Yass Tribune, 9.

Levy, Chris. (n.d.). Saving Our Soil: Soil erosion and its control. (n.p.): State Bank of NSW.

Macdonald, Emma and Andrew Kazar. (1995, 31 March). Smoke, without the fire. The Canberra Times, 4.

Menkhorst, Peter W. (1995). Mammals of Victoria: distribution, ecology and conservation. Oxford, Melbourne.

Moore, Bruce Richard. (1999). Cotter Country. PO Box 138 Lyneham, ACT: Greg Moore.

Mountain Trails. (1997, 7 May). Yass Tribune, 59.

NSW Bush Fire Services. (n.d.). The Burning Question: The rationale and the problems. Rosehill, NSW.

Plants through the Ages. (1992). Australian Environmental Studies The Unique Continent. Ep. 3. (n.p.): ABC and University of New England. Videorecording.

Project Saul: Showing a better way. (2000, 31 May). Yass Tribune, 8.

Rainforests. (1994). The Living Landscape, an Australian Ecosystem Series. Queensland: Gulliver & Dept of Education. Videorecording.

Reader's Digest. (1971). How it began: Episodes in the story of Australia. Sydney: Reader's Digest.

The Burning Bush. (1992). Australian Environmental Studies: The Unique Continent. Ep. 6. (n.p.): ABC and University of New England. Videorecording.

The plight of El Grande mirrors fate of our forests. (2003, 6 May). The Canberra Times, 15.

Warden, Ian. (2002, 16 May). Redwoods' survival stumps botanists. The Canberra Times, 7.

Whelan, Robert J. (1995). The Ecology of Fire. Cambridge: University Press.

Williams, D.B. (Ed.) (1967). Agriculture in the Australian Economy. Sydney: Sydney University Press.