Committee Secretary,
House Select Committee on the recent Australian bushfires.

Submitted by Mr Peter Curtis,

Date 12/5/2003 **Submitted late under a granted extension on May 5th by E-mail**

INQUIRY INTO THE RECENT AUSTRALIAN BUSHFIRES

Dear Madam/Sir,

Submission No.302

My submission will address the following points:

(i) Currently there is little known on the ecology of Australian plants

(ii) An important aspect of a plant's ecology is the primary juvenile period

(iii) Hazard reduction burning (aka prescribed burning, controlled burning, fuel reduction burning) has been a major strategy to control bushfires.

(iv) Many bushfires have resulted from poorly controlled prescribed burning.

(v) From 1991-2003 I have been a part-time MSc and PhD student in the Botany Department at La Trobe University, Bundoora. My field of research is in Fire Ecology and Mycology. My thesis is now completed and is being examined

(vi) Methodology of prescribed burning employed by Parks Victoria

(vii) Pine plantations and housing subdivision and development near them.

(viii) Building regulations for fire-prone areas.

(ix) Should insurers be able to access premiums based on the fire history of an area and refuse to insure if they consider the area too fire-prone? Should they be able to demand certain standards in the house and garden design to lessen the effects of fire?

(x) Without the co-operation of the states the effectiveness of this enquiry will be reduced

(xi) Does the Commonwealth have the constitutional power to control state building regulations and fire management controls in State National Parks and State Parks?

(xii) The areas where the Commonwealth could help are by:

(a) providing more funding to increase staff teaching ecology subjects

(b) providing more tertiary funding for ecology research

(c) providing more funding to fire section of CSIRO for research

(d) lessening the chance of a climate conducive fire seasons like that of the last 3 years by reducing atmospheric warming due to the greenhouse effect.

(e) providing more aerial and ground equipment

(f) Disaster control- apparently there is little integration and co-ordination between the organisations involved within the states and between the states.

(xiii) I would welcome appearing before the committee to develop and discuss some of the points made in this submission.

Development of statements

(i) Currently, very little is known of the fire ecology of Australian plants (Gill *et al.*1991). The only way that this problem can be solved is to have more ecological research done.

(ii) One very important aspect of a plant's ecology is the primary juvenile period. This is the time from when a seed germinates until the resulting plant grows and flowers. If burning takes place during the primary juvenile period and the plant dies, no seeds are produced and the chances of the survival of the species in that area is threatened (Gill and Bradstock 1992). Frequent burning can therefore cause the loss of plant species in an ecosystem. It should be remembered that the survival of other life could depend on the survival of certain plants. Knowledge of the primary juvenile period is vital in setting the frequency of prescribed burning.

(iii) For many years hazard reduction burning (aka prescribed burning, controlled burning, fuel reduction burning) has been used as a strategy to control bushfires. Historically techniques gradually developed so that large areas could be burnt in a single day. Simultaneously, environmental awareness developed, resulting in opposition to widespread controlled burning (Gill 1981). This may have been in part due to the unwanted wildfires that resulted from prescribed burning (Benson 1994) and the fact that the burning was not prescribed on environmental principles.

(iv) Many bushfires have resulted from poorly controlled prescribed burning (Benson 1994). A

recent example is a prescribed burning done by the Department of Sustainability and Environment (DSE) in the Cobaw State Forest in early April this year. The fire got out of control and became a 1000-hectare fire (The Age 8/4/2003) and later involved the Country Fire Authority (CFA). The comment of a local resident was "it's foolish... the Cobaw forest has never been so dry in white history ". This illustrates the foolishness of trying to prescribed burn when conditions are unfavourable.

(v) From 1991-2003 I have been a part-time MSc and PhD student in the Botany Department at La Trobe University, Bundoora. My field of research is in Fire Ecology and Mycology of *Xanthorrhoea australis* (Grass-tree), a plant growing in the Warby Range Northeast Victoria that has adaptive traits that were thought to indicate that the species was fire tolerant. My thesis is now completed and is being examined. Papers published from my research are Curtis (1996), Curtis (1998) and Curtis (2001).

(vi) My studies of prescribed burning in the Warby Range State Park has shown that Parks Victoria often light the area in strips 50-100m apart which on a sloping terrain allows the fire to burn uphill and become more intense. For example, in an large area on Spot Mill Track the burning was not started until near noon and the fire was left to burn up slopes which caused high mortality in Grass Trees and destroyed many habitat trees. I don't consider this to be burning that was prescribed on environmental principles. Since publishing my fire research (Curtis 1998), Parks Victoria have protected the Grass-trees by clearing around individual plants and isolating communities before prescribed burning. However, on steeper terrain the protection was not successful.

My earlier research showed that after prescribed burning in the Warby Range State Park in 1991, there was an annual increase in mortality *X. australis* in all sites (Curtis 1998). By 2001, mortality had increased in all sites, and in two sites mortality was up to 52% and 45% respectively. This was not expected for a fire tolerant species.

The recent fires in NSW, ACT and Victoria have promoted a flood of public comments based on emotional rather than environmental issues, saying that there should be more prescribed burning in National and State Parks because of a build up of fuel loads. This is analogous to authorities saying to a farmer 'your grass is a fire hazard and we will need to burn it. Your stock will have to look after themselves'. This approach would not be tolerated by the farming community so why should it be applied to National and State Parks? It should be remembered that prescribed burning can only be done in in the narrow window of the ending of fire restrictions which usually follow early autumn rains and the onset of winter rains. The previous two autumns in North-eastern Victoria have been very dry and to prescribe burn could have resulted in large fires similar to that seen in the Cobaw forest.

Environment issues must also be considered in the control and management of bushfires. An

example of this was reported in the Wangaratta Chronicle (May 5th) when a CFA captain reported his disgust at the unnecessary environmental damage that resulted from the containment lines that were put in during the recent fires at Tawonga, Victoria. Having disaster plans prepared for fire-prone areas would help to alleviate environmental damage made by *ad hoc* decisions such as the one cited. Planning committees should comprise agencies involved in fire control such as DSE, CFA, the district Fire Management Officer, an officer with knowledge of soil conservation and an ecologist.

(vii) The planning processes which allow building subdivisions close to existing pine plantations needs to be examined. This occurred in Canberra and in Victoria at Beechworth, Bright and Porepunkah. It should be remembered that prescribed burning in pine plantations kills the trees, so that these plantations will accumulate a lot of fuel and the pines are very inflammable. Other factors are the topography of subdivisions. If building is allowed on steep slopes there will be a greater risk because fire will move more rapidly uphill than on level ground.

(viii) Also, buildings in fire-prone areas should conform to standards that will afford the maximum protection against the effects of fire. CSIRO have the facilities to develop and test home designs and materials that will provide more protection to homes erected in fire-prone areas. Home owners in these areas should have some onsite firefighting equipment and water storage.

(ix) Perhaps insurance companies could refuse to insure new homes that fail to meet these requirements. Existing buildings in these areas would need to bring buildings up to a certain standard or face increased premiums.

(x) It would appear that this enquiry will only be effective if there is complete co-operation between the Federal Government and the states of New South Wales, Victoria (and possibly South Australia) and the ACT.

I feel that a member of this select committee, Ms Panopoulos MP, has not helped this cause by making two inflammatory political statements regarding the Victorian State Government enquiry. The first was reported in the Wangaratta Chronicle on March the 28th 2003 "This inquiry will be an independent investigation into the Victorian bushfires and surpasses the Victorian State Government inquiry. It is inconceivable and blatantly wrong for Premier Bracks to instigate a half-baked inquiry into his own Governments policies". The second was enclosed with terms of reference for this inquiry. " This inquiry will be an independent investigation into the Victorian bushfires and surpasses the Victorian State Government inquiry. The people of North-East Victoria can be assured that this Federal inquiry will be fully-independent and will not shy away from examining the relevant aspects and consequences of the recent bushfires". I would point out that the Victorian panel of enquiry includes two eminent and experienced fire ecologists. Does this committee have similar

representation?

(xi) However, there is a question of what control the Federal Government can constitutionally have over State Governments in relation to building subdivisions, building regulations and prescribed burning on their public land.

(xi) **Some areas where input of the Commonwealth would be important are:**

(a) More funding is required to increase staff teaching ecology subjects. In the time that I have been at La Trobe University, Bundoora, a typical work load for an Associate Professor in the Botany Department has gone from 40 lectures per annum (plus the necessary practical classes and excursions) to 80 per annum (plus many more practical classes). As well, since there are now no laboratory assistants to prepare materials required for the practical classes the lecturers have to prepare these materials. Supervising post-graduate students is still part of their job and they are also expected to conduct research of their own. This situation is typical for the department.

(b) More funding is required for ecological research. As pointed out earlier in this submission, there is a paucity of knowledge on the ecology of Australian plants. The only answer to this problem is to encourage more post-graduate research in the field of ecology.

(c) Prior to funding cutbacks the Department of Bush Fire Services of CSIRO, Canberra were able to publish such literature as 'Bibliography of Fire Ecology in Australia', which is a review of published research on the fire ecology of Australian plants. More funding to this body would ensure that more of this important literature could be published and more research done into house design and materials to reduce flammability.

(d) Long-term research in United Kingdom has showed that flowering in 350 plant species has occurred significantly earlier in recent times compared to 50 years ago (Fitter and Fitter 2002). As well, long-term research in the alpine areas of Victoria have shown that many plant species are only surviving at higher altitudes. These effects are indicative of atmospheric warming of which there is evidence that it is most likely to be due to the greenhouse gas effect. The unusually dry conditions found over the last 3 years and the unusual meteorological conditions found in this fire season may indicate a pattern that will develop in future summers. The Government should take measures to ensure the greenhouse gases are kept to a minimum by implementing measures as outlined in the Kyoto Agreement.

(e) Large water-carrying helicopters have proved their worth over the last bushfire season. The Commonwealth Government needs to have arrange an increase in the number of aircraft and other integrated equipment well before the start of the next fire season. More

funding for fire vehicles would also increase the means to control fires.

(f) There is a need to integrate the various roles of the departments involved in fire control. Although some of this has been set up at state level there is a need of integration between the three states, the ACT and the Commonwealth. It is here that the Commonwealth could act as the co-ordinator between the states and ACT.

(xii) I feel this committee would benefit from consulting fire ecologists such as Dr R. A. Bradstock, Dr A.M. Gill and Dr J. E. Williams who are the editors of a recently published book 'Flammable Australia, the Fire Regimes and Biodiversity of a Continent'. All have had long and diverse experience of the effect of fires in the Australia biota.

(xiii)Finally, if required, I welcome opportunity to appear before the committee to develop and discuss some of the points made in this submission.

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