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MAY 2005
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The Bushfire Front
"The alliance against bushfire damage"

The Executive Officer
Select Committee Inquiring into Bushfires and Bushfire Damage
Parliament House,
Canberra, ACT

Dear Sir or Madam,

Submission to Inquiry

We welcome your Inquiry. I wish to submit this brief written paper and request an invitation to present a full verbal submission when the Committee visits Western Australia.

1. The Bushfire Front

The **Bushfire Front** is an organisation dedicated to protecting householders, farmers and forests from the ravages of bushfires. Our focus is the southwest corner of WA, where hundreds of thousands of people, valuable property, public assets and priceless forests are threatened by wildfire. We are practical bushfire specialists, with hundreds of years accumulated experience in preventing bushfires, fighting bushfires and studying bushfire science. We can draw on a wide spectrum of bushfire experience, for example;

- We all have first-hand experience of fire fighting in WA forests and semi-urban bushland, going back to the 1950s, including working in fire brigades;
- We experienced the last bushfire disaster in WA, the great fires of 1961 and of the resulting Royal Commission, and learned its lessons;
- We have many years of research into bushfire prevention and firefighting, including the development of prescribed burning technology, and the pioneering fire ecology studies in forest areas.
- We have many years of actual experience in bushfire prevention and control programs in forest districts in the jarrah and karri forests. We are practical men, not just theorists.
- We have bushfire training, and experience in legislation and administration;
- Members have undertaken study tours of bushfire prevention and control in the USA and Canada;
- We have been contracted to provide advice to foreign governments on fire management policies and strategies
- We have personal networks with bushfire specialists all over Australia and the world; and scientific training in land management, including fire.

Members are listed and described in an attachment to this report.

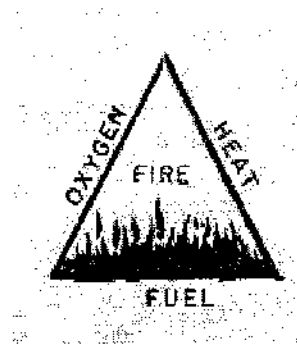
The Bushfire Front has one over-riding concern: a catastrophic bushfire crisis is imminent in Western Australia. By this we mean a Canberra-style disaster on the fringes of Perth or extensive damage to a major southwest town such as Bridgetown, Denmark or Margaret River. Alternatively, the disaster could be a major forest fire with large-scale loss of old growth karri forest, associated birds and animals,

pollution of drinking water and deaths of fish, marron and other water living creatures. Such a disaster is not just possible but highly probable.

All the factors leading to the terrible bushfires in the eastern states in recent years are present in WA. At the same time, the government's bushfire damage reduction program has been allowed to slip to danger level. There are two critical problems. The first is a massive buildup of bushfire fuel in public and private forests. The second is that the resources available to fight fires are in decline. Waterbombing aircraft and helicopters can assist at a fire, but are not a substitute for on-ground firefighters who can only succeed in suppressing intense summer wildfires where the fuels have been previously reduced. .

2. Bushfire basics- The Fire Triangle

The basic science of a bushfire is highlighted in a diagram known as The Fire Triangle



The “Fire Triangle” illustrates the three essential components of a bushfire: heat, oxygen and fuel. If any one of these three is missing, fires cannot start or keep burning.

Fuel is the only element of the fire triangle, which can be controlled by land managers. If bushland fuel levels are reduced before a summer bushfire starts, the fire will burn less intensively, will spread less rapidly, will cause less damage and can more easily be controlled by firefighters. This is the principle on which the practice of “prescribed burning” is based.

Fresh **oxygen** is always being delivered to a bushfire by the wind and cannot be controlled.

Heat cannot be usefully reduced in a summer bushfire even with helicopter water tankers. Pouring water on a fire is traditionally used by firemen in urban areas to put out fires in houses and factories where there is ready access to fire hydrants and mains water supplies. In a forest bushfire situation the huge quantities of water needed to put out a fire are simply not available. This principle is well understood and supported by science and field experience. In Western Australia a whole bushfire control strategy was designed around it, and practiced with great success from the 1960s to about the late 1990s. Records show that during these years, the number of damaging bushfires in southwest forests was greatly reduced.

But the system has been let slip. The government is no longer meeting bushfire damage reduction targets, and is increasingly devoting funds to fighting fires after they start. This is necessary, but is only one aspect of an effective bushfire management program, and cannot succeed by itself. .

3. The essential elements of an effective bushfire program

Research and experience all over the world has demonstrated that a successful bushfire program must comprise several elements – all are essential. These are:

- The government must have a clear bushfire policy, stating the priorities for fire protection, and setting out who is responsible for achieving them. [The WA government has no all-embracing policy. The current policy for national parks and State forests is under review]
- There must be a strong program of fire prevention and mitigation, including reducing fuels in forests. [This program was set up years ago, but has been let slip and is now dangerously out of date].
- There must be an organisation set up to tackle fires, comprising well-equipped and well-trained experienced firefighters [The WA government has done some good work in this area, but the best firefighters in the world will be defeated by hot fires in heavy fuels].
- There must be an ongoing and effective campaign of community education, teaching people about the risks of bushfires, and action needed to minimise risks.

4. Preventing bushfire damage in WA – what are the options?

There are basically two options for tackling bushfires in Australia. The first focuses almost exclusively on fighting fires after they start – known as “fire suppression.” The second recognises that to **suppression** must be added another key element: **prevention**, which includes the use of fire to reduce fuels before a summer bushfires occur.

For a great many years after European settlement, the people of the southwest of WA drew upon their European background to develop their approach to bushfire control. This led to the adoption of the suppression approach. This involves the establishment of fire fighting brigades who rush to a fire after it starts and attempt to suppress it. This approach is still the best for most inner-city urban situations and works well on open farmland where there are light fuels and farmer/brigades have developed co-operative arrangements and rapid early attack on fires to a fine art.

But in the Australian forests, the suppression approach is deeply flawed. This is because of three things:

- (i) In the Australian bushland, ground fuels do not rot away. The litter on the forest floor of dry leaves, twigs and branches accumulates year after year until a “steady state” is reached with massive quantities of fire fuel..
- (ii) Bushfires burning in heavy fuels under hot, windy and dry conditions are too intense to be controlled by any means known to firefighters.
- (iii) Bushfires generally come in numbers, especially under bad weather conditions. When this happens suppression forces are overwhelmed.

The “suppression-alone” approach was tried in WA forests from the 1920s to the mid-1950s, but it did not succeed. This approach culminated in the massive fires of the summer of 1960/61. Several towns were burnt and hundreds of thousands of hectares of forest severely damaged.

There was a Royal Commission into the 1961 fires.

5. The natural option: using fire to help control fire

During the late 1950s and especially after the Royal Commission into the 1961 bushfires, a new approach was introduced to southwest forests. A firefighting force to suppress fires was maintained (and enlarged) but to this was added a new dimension: the regular “controlled” burning of forests, so as to reduce the quantity of fuel on which a bushfire could feed.

The new approach was based on a large and careful research program, conducted by the CSIRO and the Forests Department. Studies were made into fire behaviour in relation to fuel and weather, and into the effects of fires of different intensities on native plants and animals. This research showed that the native bushland was well adjusted to occasional mild fires. Since those days, the technology of prescribed burning has been further advanced -- it is now a State of the Art practice, a modern concept able to be applied by skilled operators.

Using mild fire to help prevent the damage caused by intense fires can be likened to vaccination in a community health programs.

Using controlled or “prescribed burning” is not a “scorched earth” policy as is claimed by environmentalists. The controlled fires are lit under mild conditions, so that the flames are only a half-metre or so in height, and many patches are left unburnt. The usual aim is to achieve a burn on 70% of the total area. The unburnt areas provide refuge for birds and animals. The overall goal is a simple one: to maximise the area of forest where fuels are kept below the level at which a fire suppression attack would fail. In the jarrah forest, the ideal burn interval is 5 to 6 years, in the karri forest it is 8 to 9 years.

As this new system was applied to the majority of southwest bushlands from the 1960’s to the mid-1990’s it was demonstrably successful. Bushfires still occurred – a burning program does not stop this! But the fires, which did occur, were more easily and safely suppressed, and did little damage. This was well demonstrated during the hundreds of bushfires that occurred with the passage of Cyclone Alby in 1978. Another telling outcome was that over nearly a forty-year period there were no serious bushfires in the jarrah forest, and none after 1970 in the karri forest. There were no losses of townships or major incinerations of old growth forest in the parks and reserves.

At the same time, ecological research has demonstrated that there are no long term impacts of occasional burning on native plants and animals. The main threats to our native fauna are intense wildfires plus introduced cats and foxes, not mild prescribed burns.

Unfortunately, from the early 1990’s this highly successful system began to fall into decline, for reasons to be explained later in this paper. By the summer of 2002/3 massive bushfires began again to occur in the forest, including one at Mt Cooke in January 2003. This fire could not be controlled until it had severely damaged 18,000 hectares of prime jarrah forest in a conservation reserve where fuel levels had been allowed to build up to over 20 tonnes per hectare. Another fire in the Walpole area reached 38,000 hectares and was also burning in areas where fuel levels greatly exceeded levels where effective firefighting is possible.

Annual programs for fuel reduction burning in southwest bushlands are now years behind schedule. As each year goes past, and targets are not met, the situation worsens, making very serious and uncontrollable summer bushfires more likely.

A significant fact is that if the level of fuel in the forest is doubled, the fire intensity is quadrupled. Intense fires can become “fire storms” which inflict massive damage.

6. Why has this situation developed?

There are several reasons why the proven successful approach used up to the 1990s has been allowed to let slip. These are well known to members of the **Bushfire Front**, who include former and current firefighters and bushfire planners and managers in the southwest.

The main reasons are:

1. **Many people still think of the bush in European terms, and regard all fire as "bad".** Much of the opposition to use of prescribed burning is based on the fear that burning causes environmental and ecological damage. **The Bushfire Front** supports environmental protection and responsible ecological management, but opposition to fuel reduction burning to minimise wildfire damage cannot be supported.
2. **Concerns about air pollution and especially the health impacts of bushfire smoke.** Burning, like bushfires, generates smoke and sometimes this drifts into the city, causing haze. It is not generally appreciated that this smoke is a natural component of the Australian environment and a necessary part of responsible land management. Bushfires also cause smoke, and it can be extremely thick and persist for days. This happened in Sydney, Canberra and Melbourne in 2003.
3. **Lack of resources.** The main land management agency in forest areas is the Department of Conservation and Land Management (DCLM). DCLM has suffered major reductions in its permanent staff numbers over recent years to about half what they were in 1980. Critical fire management experience has been lost. Forest Districts have been closed.
4. **Costs of bushfires.** Bushfire fighting is far more expensive than preventative burning. For example the 2003 Mt Cooke fire of 18,000 hectares cost over \$1 million to suppress. This could have been cut to a tenth of the cost with a prescribed burn costing less than \$100,000. Similarly, in March 2001 an intense bushfire in a conservation area in the Nuyts wilderness area on the south coast cost \$350,000 to control and this could have been prevented with a prescribed burn costing \$10,000.
5. **Bushfires are dramatic.** The public (so long as they are not affected) are fascinated by the drama of bushfires, and regard firefighters as heroes, especially volunteer firefighters – which they are.. However they take little interest in preventive burning or tend only to see "negative" aspects like smoke in the city. What is needed is for the public to see the real value of prescribed burning, compared to the disbenefits of bushfires.
6. **Creation of wilderness areas.** The government is designating extensive areas of forest as "wilderness". In these areas, it is intended that roads will be closed, making both fuel reduction burning and fire suppression more difficult. Once a fire starts in a wilderness area it will be able to pick up energy and burst out with huge intensity, threatening any communities in its path. The expansion of "wilderness areas" has gone hand in hand with the drop in annual fuel reduction burning. Since the introduction of "no burn" wilderness areas very few have not suffered a severe wildfire due to the build up of fuel levels.

The WA government could remedy this situation if it had the will and the support of a concerned and informed community.

Attachment: Members of the West Australian Bushfire Front:

Roger Underwood (Chairman): over 40 years experience of bushfire management in Australia and overseas. Former General Manager of CAEM in WA, responsible for fire management across the State, a regional and district forest manager, a research manager and bushfire specialist. Currently runs a consultancy practice with a focus on bushfire management.

Don Spriggins (Secretary): 45 years experience in bushfire management in WA and Victoria. Formerly a Regional and District forest Manager, member of the Lands and Forests Commission and long-time Chairman of the Institute of Foresters.

Dr Frank McKinnell: 45 years experience in bushfire research and management in WA, including being responsible for bushfire management in WA forests and parks in the 1980s, and a research manager overseeing bushfire behavior and ecological research. Has advised overseas governments on bushfire policy and management.

George Peet OAM: over 45 years experience in bushfire research, prevention and control. Internationally recognised bushfire researcher. Undertook pioneering research in bushfire behavior and prescribed burning techniques which led to the development of aerial ignition and many other changes to fire operations in Australia and the USA. Ran Fire Protection Branch in WA for >10 years.

Bruce Beggs ISO JP: >60 years experience with bushfire prevention and control in WA. Formerly Conservator of Forests and Director General of the Dept of Premier and Cabinet. Experienced the 1961 bushfire disasters in WA and participated in the subsequent Royal Commission. Respected leader, administrator and manager of land management organisations.

Frank Campbell: 45 years experience of bushfire management in Australia. Formerly Assistant Conservator of Forests in WA, Chairman of the WA Public Service Board and innovative Fire Operations Officer. Representative of the Minister for Forests on the Bush Fires Board of WA for 15 years and responsible for the rewriting of the WA Bushfires Act in the 1970s. Experienced the 1961 bushfire disasters and the subsequent Royal Commission.

Jim Williamson (Treasurer): over 45 years experience in land use planning and land management in WA, formerly a Planning Manager and a specialist in forest mapping and inventory, currently undertaking PhD studies. Was a firefighter at Dwellingup in 1961 at the time of the great fires.

Steve Quain: over 50 years experience as a firefighter and bushfire manager in WA forests. Formerly a district and regional manager, Chief of Operations and Assistant Conservator in WA. Special knowledge of fire management in the karri forest as well as in the Pilbara and Kimberley regions..

John Evans: over 40 years practical experience as a firefighter and fire specialist in WA, now runs his own bushfire management consultancy practice. Special knowledge of southern conservation reserves, and has strong working networks with volunteer brigades and Shire councils.

All of the above worked in fire crews as young men, on burning and bushfire control and so have experienced the full gamut of bushfire management.

The **Bushfire Front** believes that the mostly likely outcomes of the present scenario are these:

- (i) There will an increasing number of damaging bushfires of the type we have seen around Perth this summer. People will continue to needlessly lose homes and possessions and insurance premiums will escalate.
- (ii) There will be a massive and highly damaging bushfire soon in the southwest of WA, or more than one if the "right" conditions occur. If the fires reach the sort of intensities seen in recent ACT and Victorian fires, there will be appalling loss of assets and forests, and possibly loss of life.
- (iii) The costs of suppression and rebuilding and the losses of public infrastructure and forests will be immense, and a huge drain on the public purse. This will lead to increased taxes, redirection of funds from other priority areas such as health and education, and to increased insurance costs for the ordinary man in the street. The cost of the recent Canberra disaster to insurers alone, is put at \$257 million. The total cost is much greater than this.
- (iv) Steadily increasing risks to firefighting crews, which may impact on the ability of volunteer brigades to maintain their strength.

7. Our recommendations to the Inquiry

We seek the support of the Select Committee in the following:

- The WA government must develop a comprehensive bushfire policy which places prevention alongside fire fighting as having equal priority, amending the CALM Act, if necessary, to achieve this. Protection of lives and property should be given top priority.
- Both State and Commonwealth governments must support this by funding fire prevention work. This will require a rebuilding of the staffing structure of DCLM, providing them with sufficient funds annually to overcome the deficit in the fuel reduction program within a 5-year period, and then ensuring on-going work over the years. It may be necessary to fund more fire prevention work by volunteer brigades.
- A campaign to change community outlook so that it is accepted that some smoke in the city from prescribed burning is better than whole suburbs burned to the ground by bushfires.

I look forward to the opportunity to make a verbal presentation when you visit WA on this critical issue.

Yours sincerely,

Roger Underwood
 Chairman of **The Bushfire Front**
 May 5, 2003