REPORT OF PROCEEDINGS BEFORE

JOINT SELECT COMMITTEE ON BUSHFIRES

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At Sydney on Thursday 2 May 2002

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The Committee met at 9.00 a.m.

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PRESENT

Mr J. C. Price (Chair)

The Hon. Rick Colless
The Hon. Tony Kelly (Deputy Chair)
Mr E. T. Page
Mr R. H. L. Smith
The Hon. John Tingle
Mr G. R. Torbay

PHILIP CHRISTIAN KOPERBERG, Commissioner, New South Wales Rural Fire Service, 8 Linksview Road, Springwood, New South Wales, sworn and examined:

COMMITTEE MANGER: The Committee's terms of reference are to examine:

(a) Hazard reduction and other fire prevention measures.

(b) The environmental impact of bushfire management and control on biodiversity and biophysical processes and the application of research, technology and management techniques to minimise the impacts.

(c) The causal factors of the bushfires including an investigation of land use decisions, development planning, and the responsibilities of property owners that will reduce bushfire risk and the environmental impact of bushfire management.

(d) The adequacy of equipment available to, and training of, Rural Fire Brigades

(e) The adequacy or otherwise of building regulations currently in operation in New South Wales with particular emphasis on the Australian community bushfire safety standards for houses.

(f) The use of aircraft in firefighting

(g) The adequacy of changes made to bushfire planning and fighting, development planning and other relevant matters since the 1994 bushfires.

CHAIR: Commissioner Koperberg, have you been issued with a copy of the terms of reference and the Legislative Assembly Standing Orders 332, 333 and 334 that relate to the examination of witnesses?

Commissioner KOPERBERG: Yes.

CHAIR: In what capacity do you appear before the Committee:

Commissioner KOPERBERG: As Commissioner and Chief Executive Officer of the New South Wales Rural Fire Service.

CHAIR: Did you receive a summons issued under my hand to attend before the Committee?

Commissioner KOPERBERG: Yes, I did.

CHAIR: Do you wish to make an opening statement?

Commissioner KOPERBERG: Yes, I do. New South Wales has recently emerged from what has been variously described as one of the most protracted bush fire fighting campaigns in Australia's recent history. Even though the community normally tends to measure the severity of bushfire events by the losses incurred, a different approach would suggest that in the past 30 or 40 years, at least, there has been no series of meteorological events which would give rise to a protracted period of very high to extreme fire activity as was the case during the Christmas/New Year events which occurred in eastern New South Wales. We tend to look at bushfire seasons, the likes of 1967 in Hobart where there was massive loss of life and many thousands of structures destroyed, the Ash Wednesday fires of 1983 in Victoria and South Australia where again there was significant loss of life and again many thousands of structures were destroyed, as being the worst of fire seasons.

I guess it depends very largely on whether you judge the severity of a fire season on the losses you incur or on the potential impact that a fire might have on any given community and its assets. It is true to say that in recent history there has been no fire event on this Continent with greater potential to match the losses of which I spoke than the events of Christmas and New Year in eastern New South Wales. Notwithstanding that, the relatively recent improvement to training across all agencies, the adoption on a national basis of an integrated emergency management system, vastly

improved equipment, a greater level of co-ordination, the likes of which is largely unprecedented, has accommodated New South Wales emerging from that particular event with unprecedented low losses. It is testament to the tenacity and expertise exercised on the ground, in the field by firefighters, their commanders, their planners and their operations people that not one single serious critical injury was recorded and, most pertinently, not one life was lost. I have to say that so far as records are able to reveal it is the first time during any major fire fighting campaign of that magnitude anywhere in the world that there has been no loss of life and no critical injury recorded.

It is true to say that from all such events important lessons are learnt and this particular series of fires is no exception and there will continue to be improvements in the application of technology, particularly as technology emerges. It is pertinent to say that the managers of any campaign only have access to whatever technology is available at that particular time and this series of events was no exception. Whatever technology was available was utilised as it became available. It is true to say that lessons learnt from this fire, as indeed from similar events in New South Wales, most pertinently in 1994 and 1997-98, will also be the basis for further improvement in areas such as co-ordination, if that indeed is possible and the continued refinement of the application of aviation as a critical component in the firefighting effort.

I note for the record that every single firefighting agency in Australia was engaged in this campaign and many of the land management agencies, such as the National Parks services and Forestry services were also engaged and support came in various forms from as far away as New Zealand. It is to the credit of all the New South Wales and State agencies involved that the integration of all of their resources was effectively seamless and almost flawless. It is a matter of record that each of the inter-State chief executive officers wrote to me following the events and commented on the relatively flawless and seamless integration into the New South Wales emergency management system of all of their resources. Without exception, they were able to comment that they detected vast differences between the situation which prevailed, for argument sake in 1994 which was the last occasion on which national resources were used to a very large extent, and the events of 2001-02

In summation, I believe that whilst all such events will provide fertile ground for further improvement, New South Wales is fortunate to have been served on this occasion by a very skilled, well co-ordinated and well integrated emergency services structure. It is due to those skills having been brought to bear that we look back upon this event—and history will show this event—as a relatively light fire season, simply because the losses could be described in that particular vein.

The Hon. JOHN TINGLE: As you know, one of the principal briefs of the Committee is the question of hazard reduction. I suppose most people would agree that hazard reduction is to an extent fire prevention. Hazard reduction was raised several times in the Committee's hearing at Nowra recently. Some comments were made about the level of hazard reduction carried out by the National Parks and Wildlife Service. Dr Tony Fleming told us that of the 1.6 million hectares under the control of the southern directorate, only about 22,000 had been cleared of hazards in the previous four years. Do you believe that there is a need for a greater co-operation between agencies like the Rural Fire Service and the National Parks and Wildlife Service to ensure that hazard reduction is adequate? Do you consider the 22,000 hectares adequate?

Commissioner KOPERBERG: When you contemplate the role of hazard reduction as part of a fire management strategy, it is important not to confuse quantity with quality. It is far more important that hazard reduction is carried out on a strategic basis and not randomly across any estate. The extent to which hazard reduction can be utilised is also a critical part of the land management charter that an organisation might have and, perhaps lastly, hazard reduction on its own is not the panacea. It is a question of integrating fuel management with a whole range of other fire management issues.

If you were to treat hazard reduction as the panacea, in order to contain fires across a broad landscape to the point where they were manageable under extreme fire conditions, such as we experienced on most of the 23 days which constituted the duration of this campaign, you would almost have to keep fuels reduced to about two tonnes per hectare. In order to maintain the two tonnes per hectare level, you would have to hazard reduce all of the landscape about every nine months, which means that all of the communities would… live permanently in a fire-scarred environment; any thought of maintaining any level of biodiversity would be an exercise in futility; and much of the

native vegetation and native fauna would long since have disappeared. It is just not feasible to maintain a landscape in a condition where hazard reduction is the sole criteria, to have no extreme fire conditions across that particular landscape.

So it is a matter of where you do it, and not how much of it you do, depending on what your land management charter is. There is continuous improvement in that, as a result of analysis, as a result of risk management, and as a result of identifying the assets at risk. The level of co-operation between the National Parks and Wildlife Service, other land management agencies and the suppression agencies is of the highest level possible, and there is constant consultation to ensure that what is done is of strategic value.

Mr R. H. L. SMITH: I appreciate your comments with regard to quality and not quantity. When you consider that the national parks have declined by 60 per cent over the last seven years and State Forests is now hazard reducing 15.5 per cent of the land under its control, as against the National Parks and Wildlife Service land 0.37 per cent, it seems that one is doing a lot of quantity and the other is doing a lot of quantity. The disparity between the two amounts seems to indicate that somebody must be getting it wrong. Which one is it?

Commissioner KOPERBERG: It is a bit like trying to compare apples and oranges. The Forestry Commission has a totally different charter. Its principal task is to produce productive forests and allow them to be harvested. Whilst the commission obviously has some level of environmental responsibility and charter as well, it is not its principal one. Whereas the National Parks and Wildlife Service has a clearly defined charter of conservation, maintenance of the natural heritage, and maintenance of biodiversity, et cetera, et cetera, et cetera. So it does not have the luxury, I guess, of simply looking at the situation where the primary responsibility is to protect the commercial asset, such as a commercial forest, for argument's sake, and having to worry about all the other things at same time.

There is no doubt that as the system evolves there will be greater emphasis on the strategic value of hazard reduction done by all agencies. The Government has already indicated quite clearly that it proposes to introduce legislation which will streamline the approval processes. It is true that some practitioners perceive the current system as providing some level of impediment. The reality is that whilst it is an exacting process, it is not a prohibitive process. But, clearly, it is necessary to streamline the process even more, and the Government has indicated that it proposes to do that. I think you will find, again, a re-evaluation of where hazard reduction should be done and what its principal purpose is—and that, certainly on the urban bushland interface, is to provide a level of protection for the assets of the community. But I reiterate, hazard reduction on its own is not the only issue here.

Mr R. H. L. SMITH: Can you assume from that that it is its charter, whether it to be involved in forestry or the conservation of public land, which dictates its fire policy as to how much hazard reduction it does on its land?

Commissioner KOPERBERG: No, I do not think so. As is the case with all land management agencies, the National Parks and Wildlife Service also has a responsibility to its neighbours in terms of fire management. It has been often said, "Here comes another fire raging out of another national park." The reality is that there are more fires which escape from private lands into national parks than there are fires which start on national parks escaping into private lands.

The other thing that should be noted is that there is a very sophisticated system which provides for community concerns, in terms of hazard reduction, to be aired, explored and implemented. Throughout the State there are in excess of 100 district bushfire management committees, on which are represented all elements of the community, various land management agencies and just about everybody else, including local government representatives, brigade representatives, community representatives and emergency management representatives. It is their task to look at the total landscape for which they are responsible, and strategically plan fire prevention methodology and provide for operational planning.

It is possible for anyone within the community to bring their concerns about what they perceive to be a hazard at any particular time to the attention of their representative on that committee, and then a process of evaluation as to the need or otherwise to do a particular thing takes place. So

there is quite a large and sophisticated system designed to capture community concerns about what they perceive to be a hazard in relation to any asset.

The other thing that is noteworthy is that, whilst it sounds relatively simple to identify a piece of land on which fuels should be reduced, the reality is that the windows of opportunity are extraordinarily small. In any given year, for argument's sake, the months of March, April and May and the onset of the following spring, you may well find that you only have 10, 15, 20, or perhaps 30 or 40, days on which this work can be done, due to meteorological conditions: it is too wet, it is too dry, it is too hot, it is too cold, and so on. Then you have to ensure that you are able to marshal the resources on a day which meteorologically provides you with an opportunity to do that. Chances are that you are not going to know that a day or two before that particular window of opportunity arises. So it is not simply a matter of saying, "There's a piece of land with its number of tonnes per hectare of fuel and we should hazard reduce it." It is very much at the beck and call of a number of constraints, not the least being meteorology.

The Hon. TONY KELLY: You provided extensive written and verbal evidence to General Purpose Standing Committee No. 5 when it inquired into the Rural Fire Service in early 2000. Specifically, you provided a lot of detail about the wide-ranging use of firefighting equipment that was available to brigades. Could you inform the Committee of the current position in relation to fire tankers, in particular the various categories and capacities of the tankers?

My question follows on from the suggestion some years ago when you and I were involved in a public meeting in Wellington at which you talked about trying to get tankers within a certain period of time. Do you recall that?

Commissioner KOPERBERG: Indeed, only too well. It continues to be the Government's priority, so far as the Rural Fire Service is concerned, to decrease the average age of tankers dramatically, and there are two pertinent points in that regard. Firstly, since 1995-96 some 1,844 tankers have been put into the field, which is probably an Australian record within that time frame, at a cost of some $155.2 million, which is probably also a record in Australian terms.

The range of firefighting equipment is greater in New South Wales than in any other State of Commonwealth. There are some 15 categories of various types of tankers, ranging from category one, which is a 3,400-litre forest firefighting unit used largely in mountainous terrain, right through to a category nine tanker, which is a striker unit specifically designed to operate with minimal crew. Perhaps even one or two people can effectively operate such a thing. We have in mind changing demographics, particularly in rural New South Wales, where there is not any longer an abundance of people to staff such appliances, hence the design and supply of vehicles like that. Between them you have 13 categories that are designed to meet the topographic, geographic and demographic needs of brigades to which they are supplied.

The Hon. TONY KELLY: Is there are a problem sometimes when there is a fire in a particular area of the State and you bring in equipment from, say, the coastal area to the Central West or vice versa? Sometimes the units are different in those areas.

Mr KOPERBERG: Yes and no. There are obviously incompatibility problems when you bring, for argument's sake, a tanker or firefighting vehicle which is specifically designed to fight fires in heavily forested country or in mountainous areas, to a grass fire environment, and vice versa. Nevertheless, those items of equipment and the skills that the firefighters who staff them bring to the supporting role of the principal firefighting effort, which is largely managed by people and equipment trained and designed to deal with those particular fires. What is pertinent is that under the co-ordination system and under the integrated emergency management system and under the integrated communication system we are now able to access resources from any part of the State and readily integrate them with the resources from any other part of the State. We still have a lot of work to do.

For argument's sake, very recently in Orange I was able to meet with some representatives of the farming community and they made a very pertinent point when they said that while they were very appreciative of assistance from the east, there was the issue of knowledge of the local area. They suggested that in future task forces that are sent from any part of the State to assist any other part of the State have a local person assigned to them if for no other reason than to show them the way

around. We readily agreed with that. It is a question of evolution. There will always be problems when you send a particular type of resource and personnel to an area, a firefighting environment, with which they are not familiar. Some of the Queenslanders, some of the people from around Brisbane, when they were confronted with the fires in the Eurobodalla shire, were inquiring how fast they could hop on something to take them back to Brisbane. A lot of it is alien. It is a question of cross-training, familiarisation programs, and it is a vast improvement on the situation as recently as perhaps 15 or 20 years ago.

The Hon. RICK COLLESS: The National Parks submission says, "There is no significant relationship between fuel condition and trends in wild fire incidents and size at a landscape level." Would you agree with that statement?

Commissioner KOPERBERG: If the reference is to fuel quantity rather than fuel condition—

The Hon. RICK COLLESS: It says fuel condition.

Commissioner KOPERBERG: I am not sure what fuel condition means. It could refer to the state of the fuel, its moisture content or anything else. I assume it relates to fuel quantities. It is true that meteorological conditions in certain circumstances will give rise to fire behaviour of such intensity that even the minimal fuel levels will produce high-intensity fires. There were many examples during the most recent campaign, where hazard-reduced areas which had been treated as recently as four or five months before nevertheless produced fires of such magnitude as to make them incapable of immediate suppression or containment. There is no doubt that fuel quantity in most cases, in the range of normal firefighting weather or fire weather, will make the difference between being able to contain it and not being able to contain it.

You have to remember that in most normal firefighting conditions we do not witness the likes of the events of Christmas/New Year 2001-02. When conditions are so severe as to produce fire behaviour of that magnitude, yes, the more fuel you have the greater the intensity. But there is a cut-off point where, if the fire danger index, for argument's sake—and it is measured on a logarithmic scale of zero to 100—reaches 50, it is extreme and if those conditions prevail, fire agencies refer to defensive firefighting as opposed to offensive firefighting. You will see, as we did, that those conditions will produce fire behaviour that will make fire suppression on even hazard-reduced areas very difficult if not impossible. So, during normal firefighting, yes, it is of significant relevance. During conditions that are extreme, the relevance is not as great.

The Hon. RICK COLLESS: Questions stem from your answer in regard to the areas that were hazard reduced four or five months previously. Did any fires start in those areas or were they fires that started where fuel loads were higher?

Commissioner KOPERBERG: I am not exactly sure but I suspect that in most cases fire traversed those recently hazard-reduced areas. But, even if there were no ignitions in those relatively hazard-reduced areas, that is not to suggest that ignition could not take place—quite the contrary. If you have a fire danger index that puts it into extreme, you will set fire to a brown lawn without any trouble at all, and the brown lawn will carry fire at a height of 1.5 metres to two metres.

The Hon. RICK COLLESS: I have seen a bushfire go across a ploughed paddock.

Commissioner KOPERBERG: Exactly, and there is no better form of hazard reduction than a ploughed paddock. So, if bushfires can cross that you can imagine how they will deal with two tonnes per hectare, which is considered to be at the lower end of the acceptable fuel levels.

The Hon. RICK COLLESS: When you talk about this index, does that take account of fuel loads or is it purely a meteorological index?

Commissioner KOPERBERG: It is a meteorological index. The rate of spread of a fire and the way in which it behaves is very much subject to topography and fuel loadings and, obviously the third factor, meteorological conditions. The method of assessing the likelihood and rate of spread of

fire due to meteorological conditions is based on just that. It is from those observations that the fire danger index is derived.

Mr TORBAY: On the issue of co-operation and communication priorities between the agencies, we have had some evidence tendered to say that things ran very smoothly and that a great deal has been learned since 1994. The New South Wales Farmers submission says at page 17, 4.1.1, "Members urged that communications between NSW Police, RFS and NSW Fire Brigades be upgraded to enhance the level of responsiveness and cooperation in emergency situations." There seems to be some conflict there, given the previous evidence that was tendered. I would like to know your comments about co-operation between the agencies.

Commissioner KOPERBERG: It was of the highest order I have ever seen in 35 years in the business. That is not to suggest that there is not room for improvement. People move along, people find themselves working together who have not worked together previously. As I said, we have probably one of the best emergency management systems in the country. I am not saying it is the best, I am not saying it is better than elsewhere, but it is up there in world order. That is evidenced by the fact that notwithstanding the condition that prevailed our losses, relative to those overseas, are remarkably low. I am talking about countries that have very sophisticated firefighting systems and which have no lack of resources at their disposal. Even their losses are considerably higher.

So, in the area of co-ordination, co-operation and integration, it is very much an evolving issue. It was of the highest order possible and, yes, there were some problems. Certainly there were some problems. The issue of evacuation is always troublesome. The police officer on the ground has a clearly defined duty to do all that is necessary to save life and property. They are not fire experts. They perceive a threat and take appropriate action. Nevertheless, the police are part of the emergency management system, they are part of the liaison process and planning process and so on. We have a program across the board of ensuring that the appreciation on the part of the police as to the need or otherwise to evacuate is very high. But you will always have differences of view because at the end of the day it may well come down to a question of opinion rather than anything else. But there was no lack of co-operation on the part of any of the agencies. It was of a very high order. Indeed, it was one of the issues raised in the letter sent to me by chief executive officers across the country who commented upon the very high level of co-operation between the New South Wales agencies.

Mr E. T. PAGE: Can you give us some comment on the development of aircraft use in firefighting in New South Wales, and cover how essential are they, in what range of circumstances are they useful? Should you co-ordinate the management of aviation resources across the fire agencies and should you co-ordinate accreditation of aerial support staff across the agencies?

Commissioner KOPERBERG: The use of aircraft in fire management in New South Wales probably saw its genesis in the early 1970s—perhaps a little earlier, but the early 1970s—where there was a recognition that aircraft were a valuable adjunct to fire management issues. We used then initially to transport crews around and insert them into otherwise inaccessible terrain. That was certainly the case in the early 1970s in the Blue Mountains when a series of lightning strikes caused fires in the Wild Dog Ranges, where there was no access other than with aircraft. As the years went on, the water-bombing capacity of aircraft was recognised and a lot of work was done in Australia and elsewhere on developing systems that would effectively allow water to be delivered from aircraft to the point that it is today, where a range of aircraft are available to do those sorts of things.

It is not by accident that during this campaign some 109 aircraft were utilised for purposes ranging from water bombing at one end of the spectrum to observation, reconnaissance and crew transport at the other end of the spectrum. There has been a lot of comment, most of it made with the benefit of hindsight, as to why we did not do this or do that. We certainly have always recognised the critical nature of aircraft in any fire management issue and, indeed, we have developed, in conjunction with the National Parks and Wildlife Service, State Forests and others a very cohesive and integrated policy on how, when and why aircraft should be used.

It will always be the case that someone, somewhere has invented a better mousetrap, and you will be asked why you did not use it. At one stage almost every hotel room in Sydney was booked out by people flogging what was left of the Soviet Union air force to us to drop water all over the place. It will always be the case. We regard aircraft as an essential tool. Again, it is not a panacea. The aircraft

that can actually put out anything but the smallest fire in the most benign conditions has not yet been invented. We use aircraft not necessarily as a last resort; nor do we use aircraft as a first resort. We use them when we consider it to be appropriate. We deal in topographies and fuel types which differ significantly from other parts of the world. Therefore we use specific aircraft to deal with our specific needs.

The Rural Fire Service does play a major part in the co-ordination of aircraft assets and their distribution during fire seasons. It also plays a major part in ensuring that training across all the agencies is consistent. There are a number of factors in that. We have to train air attack supervisors, air observers, air base managers and air operations managers. There is a very cohesive system across New South Wales for doing that so that everybody is at the same competency. I would like to comment that whilst aircraft are an essential part of a fire management campaign, again, they are not the panacea. When conditions are of such an order as to produce extreme fire behaviour then the very most you would hope to get out of an aircraft, no matter what its configuration, is momentary respite. It might hold or knock down a fire for a few seconds or a few minutes but if you cannot get ground troops there to actually do something with the fire it will pick up and go again.

There has been a lot of commentary on why we did not have this and that. I have to say that history shows that aircraft on their own or aircraft generally are not going to resolve the issue. California is a community that probably has more access to aircraft than any other community in the world. Over the last 10 or so years, despite their access to every conceivable type of aircraft, including military aircraft and what have you, their losses have been considerably higher than ours. In 1991 in a fire of a mere 640 hectares, which we would consider in those circumstances to be tantamount to a training exercise, 25 lives were lost and over 2,500 structures were lost. In Colorado in 1994 in a 740-hectare fire 14 lives were lost. In California in 1999 in a 10,600-hectare fire 954 structures and one life were lost. In New Mexico in 2000 an escape from a prescribed burn resulted in a fire of 19,300 hectares and 235 houses were destroyed. In California in 2001 in a 3,300-hectare fire 133 structures were lost. That is a clear indication that you can bring to bear all the aircraft in the world and you will still have results which are of this order. We do a lot better in that context than anybody else does, despite the fact that we do not throw entire air forces at the thing, which at the end of the day is an exercise in futility.

The Hon. TONY KELLY: To follow up on the previous question on infrastructure, the other sort of infrastructure that is of interest is communications systems. I think they have changed dramatically since 1994. If you are getting assistance from, say, Blue Mountains brigades going out west or vice versa you need to have a reasonably reliable communication system. What is the current situation with that?

Commissioner KOPERBERG: We have a multilayer communication system. There are four tiers and the system is based on various needs and various strategic and practical requirements. The basis for it is a UHF PMR, private mobile radio network, which is being progressively introduced across New South Wales. It is for tactical purposes so that brigades can talk to each other, so that the occupants of vehicles can talk to one another. A vehicle traversing New South Wales from, say, Albury is able to contact every fire district along its route to Tweed Heads, or from Sydney to Broken Hill the same thing applies. So on a fire ground there is ready tactical communications between groups and between individual vehicles. The government radio network, the GRN, which continues to evolve, is a highly sophisticated ultra high frequency network. It continues to provide the basis for strategic communications, in other words between districts and commanders. There are so many frequencies available on that system that within the area of coverage—the GRN largely provides communications in service corridors; it is not widespread yet across the landscape but continues to evolve—you are able to assign particular groups of firefighting assets to a particular frequency within those GRN bandwidths and provide another tier of communication.

That covers two tiers. The third tier is what we call our strategic radio network, which is, as the name implies, a strategic frequency which is assigned to districts and regions across New South Wales and can be resorted to in the event of the location being in a communications Bermuda Triangle, twilight zone, dead spot or whatever. There is no such thing as a perfect communication system; it has not yet been invented. Those of us who spend half our lives on mobile phones will attest to the fact that you can be standing on one street corner one minute and have a perfect signal and none 30 seconds later. That is the way of the technology. The fourth tier of our communications system is

what we refer to as fire ground radio, which is a VHF or very high frequency system. It is largely based on hand-held radio so that two groups or more of firefighters in close proximity to one another do not necessarily have to be in the vehicle to establish communications with each other. Communications systems, Mr Kelly, like every other technology, are by no means perfect but continue to evolve.

The Hon. RICK COLLESS: Commissioner, going back to the issue of fuel loads, is there any formal structure or procedure in place to regularly and formally report fuel levels back to you from various land tenures?

Commissioner KOPERBERG: Not fuel levels, Mr Colless. The charter for that task rests with the bushfire management committees, the nature of which I explained a few moments ago. We expect those committees to monitor fuel. But fuel loading is not the essential criterion here. The critical factor is where the fuel loading is. There has been a lot of quite strange talked about some magical figure of 100 tonnes of fuel per hectare. Might I say that that is physically not possible. The equilibrium for fuels in coastal dry sclerophyll forest is probably about 40 tonnes per hectare maximum. After that fuel loading decomposition at the lower end begins to provide you with equilibrium so it cannot continue to build. It does not keep accumulating to the point where you have 100 tonnes per hectare. That is physically not possible. The exception is probably some ash forest in Victoria where in very small geographic areas you might get 80 or perhaps 90 tonnes per hectare.

The Hon. RICK COLLESS: Would that exist in the Kosciuszko park?

Commissioner KOPERBERG: No, it cannot. The mountain ash, which is the prevalent species there, would provide at the very worst 40 tonnes per hectare before equilibrium begins to affect those fuel loadings. Mind you, 40 tonnes per hectare will produce, under certain conditions, a quite severe fire. So, Mr Colless, it is not so much a question of the fuel loading but where that loading exists. The district committee process continues to monitor that. The Government, in recognition of the fact that there is more work to do, has signalled its intent to introduce legislation. I have signalled my intent to complement that legislation to establish inspectorial and audit teams to ground truth the planning process, to randomly monitor fuel levels in close proximity to assets, particularly within asset protection zones and fire advantage zones. This will be introduced progressively as the year goes on.

The Hon. JOHN TINGLE: Mr Koperberg, in your opening statement you painted a picture of a system which seems to have worked very well but you made to comment that lessons had been learnt from it and obviously improvement is a continuing process. What is the top of your priority list? Where do we go next to make the system work even better?

Commissioner KOPERBERG: Mr Tingle, I think the way in which we manage fuels is certainly a high priority. We have to educate communities to the reality that we live in a fire-prone part of the world. Southeastern Australia is amongst the most fire-prone parts of the world, matched only by fire conditions in Southern California and parts of Europe—and not very many parts of Europe. We have a massive task ahead of us to educate communities that fire is a natural part of the environment in which we live.

The Hon. JOHN TINGLE: Do householders as well as people who fight fires need to understand this?

Commissioner KOPERBERG: I was referring to the general community, not so much the firefighting community. There is a growing expectation on the part of communities that we can live in a fire-free environment, and that is not the case. There is also a growing expectation that if things go bad a fire engine will arrive and miraculously save everything. That is not the case either. So we have a lot more work to do on community education. We have an extensive community fire guard program which targets schools and fire-prone communities. It has a very hands-on approach. We go into communities and we gather the people around and we form groups and those groups inspect the areas in which they reside for hazards and they assist householders in good housekeeping so far as fire management is concerned. And so it goes on. We will continue to focus heavily on how we can make better use of aircraft and what type of aviation technologies are available to us and capture them perhaps more effectively. In essence, they are the three areas which I see as priorities. The

Government is well advanced on its re-equipping. We are of world order in terms of training our firefighters. We need to carefully examine the demographics, particularly of rural New South Wales, which is changing dramatically. We have to get smarter about recruiting people in areas which have been largely denuded as a result of changing demographics and an ageing population. There is a lot of work ahead of us yet but in the order of things we are doing as well as anybody else in the world is doing.

Mr TORBAY: I also raise the issue of fuel loads. You indicated that the management of fuel loads will continue to be an issue. Fuel loads in national parks have been commented on publicly on a number of occasions. It has been stated that areas that had fuel loads of 10 tonnes per hectare before becoming national parks and after becoming national parks had 100 to 150 tonnes per hectare, which you have already said is impossible. But are there systems in place to deal with fuel loads in national parks?

Commissioner KOPERBERG: Yes, there are. The National Parks and Wildlife Service is no less committed to the recognition of the fact that fuel management is a critical part of fire management across the board. You may well detect some changes as the land's tenure changes. If on one hand it is private land or State Forest or something and becomes national park, then the charter changes. The way in which that land ought to be managed, according to that charter, changes as well. However, that is not to suggest that the critical issue of fuel management becomes ignored by the new owners or occupiers of that particular land.

Equally, there is no doubt that we have more work to do and the National Parks and Wildlife Service is as committed to ensuring that work is done as indeed we are. The measures I have outlined that are to be introduced by the Government and by the Rural Fire Service are being fully supported by the National Parks and Wildlife Service, and fuel management in the way in which it is managed is just one of the lessons that events like this teaches. If there had been no progress in that or any other area in the last decade, then I think that that would have real cause for concern, but such is not the case.

Mr E. T. PAGE: Is there a method for funding firebreak construction and maintenance on Crown land?

Commissioner KOPERBERG: Yes. There is some $0.75 of $1 million spent annually specifically for the construction and maintenance of fire access roads and trails on lands that are not the responsibility of one land manager or another to provide. That process is managed through bushfire management committees, through district and regional entities and, in certain cases, we even expend money on private land where it can be demonstrated that the expenditure of that money is critical to the maintenance of a firebreak or fire access road. So, as I said, some $750,000 annually is spent on that. The responsibility for the maintenance of trails and access roads on dedicated lands however is that of the land manager.

Mr R. H. L. SMITH: We now have a raft of environmental legislation—the wilderness Act, endangered species, native conservation, to name a few—is this legislation in any way interfering with either the speed at which hazard reduction burning can take place or is it precluded in the hazard reduction burning? Secondly, there was some controversy in Nowra when we received submissions as to whether, when land managed by Forestry transfers to National Parks, they in fact close any strategic fire trails through the change of tenure?

Commissioner KOPERBERG: The answer to part one of the question is that the environmental requirements and what have you are complex. There is no question about that, and so they ought to be. They are not an impediment per se; certainly they are perceived as an impediment by some practitioners. And, yes, there is some frustration prevailing amongst the practitioners about the complexity and how much time it takes to address certain requirements. As I have said, the Government has recognised this and proposes to streamline it. There will be provision made for a State environmental planning policy [SEPP], and there will be provision made for a code of practice, which will allow a linking of common hazard reduction requirements across a range of land tenures that will considerably ease the workload on the practitioners for assessment purposes and what have you. It has never been suggested that there are not some problems in that regard that need to be ironed out and they are in the process of being ironed out.

In relation to the second part of your question, the National Parks and Wildlife Service liaises closely with districts and through bushfire management committees and others as to the need to maintain, open, close particular access roads. Sometimes that need does change. If one day there is a range of tracks and roads used for logging purposes, for argument's sake, they may not be required when the land tenure changes for that purpose. However, the strategic value of access roads is something which continues to be the subject of negotiations and liaison with the service to a satisfactory level. It is perfectly true to say that on occasions we have had occasion to raise with the service the need to open or maintain a particular trail. When we do that, the service co-operates fully with us.

Mr E. T. PAGE: Can you describe the Rural Fire Service community education program and tell us how effective they have been? Also, can you comment on the problem of absentee landlords during bushfires?

Commissioner KOPERBERG: If I could be permitted to read from our submission to this inquiry, it will give Mr Page a succinct and relatively brief answer to his question:

> The community fireguard program targets those in high-risk areas through a hands-on approach to bush fire prevention preparedness. It encourages groups to take proactive steps to increase their own bushfire safety. Since March 1995 the service has established some 520 community fireguard groups supported by 478 trained facilitators who are also active in other programs. Other programs include fireguard for kids, fire safe farms, fires safe towns and the bushfire-wise program. A number of target groups have also been identified and include absentee land-holders, tourists, the aged, people with disabilities and people from non-English-speaking backgrounds.

That is intended to demonstrate that the Rural Fire Service is committed to being out there in the community with a very practical approach to helping people help themselves. The message that we send out through these community groups is that there is a great deal of very valuable work that people can do immediately prior to the fire to considerably enhance their chances of protecting their assets. It is a major program within our total fire management policy and will continue to enhance that community. Of course, we work closely with other agencies. We work closely with the New South Wales Fire Brigades in that regard. So, there is a lot of cross-fertilisation when we target particular groups, as we do with National Parks and State Forests.

Mr E. T. PAGE: Can you comment quickly about absent land-holders?

Commissioner KOPERBERG: They are part of the focus group. We recognise that those lands which are under the ownership of absentee land-holders are a major issue. We involve the community surrounding those particular areas in advising them on what they can do if a fire starts on those lands and we physically encourage local government councils to maintain close contact with those absentee land-holders. Of course, councils have the ability to serve notices on all land-holders to clear hazards, and we ask them to focus particularly on absentee land owners for a number of reasons, not the least of which is that those lands also have fuel accumulations which, from time to time, become a problem. Invariably, those people are not there to assist in fighting fires. That is why we engage other community members in attempting to mitigate those particular circumstances.

Mr E. T. PAGE: Can the commissioner take further questions on notice?

CHAIR: If members have questions, they might circulate them to Commissioner Koperberg. I am sure he will be able to respond to them.

(The witness withdrew)

BRIAN JOHN GILLIGAN, Director-General, National Parks and Wildlife Service, 43 Bridge Street, Hurstville,

ROBERT JAMES CONROY, Executive Director, Central Directorate, National Parks and Wildlife Service, 43 Bridge Street, Hurstville, and

ROSS ANDREW BRADSTOCK, Principal Research Scientist, National Parks and Wildlife Service, 43 Bridge Street, Hurstville, affirmed and examined:

CHAIR: Have you been issued with a copies of the Committee's terms of reference and the Legislative Assembly Standing Orders Nos 332, 333 and 334 that relate to the examination of witnesses?

Mr GILLIGAN: We have.

CHAIR: In what capacity do you appear before the Committee?

Mr GILLIGAN: As the Director-General and Chief Executive of the National Parks and Wildlife Service.

Mr CONROY: I am the Director of Central Directorate with the National Parks and Wildlife Service.

Dr BRADSTOCK: I am the Principal Research Scientist for the National Parks and Wildlife Service and will be giving a scientific perspective on our submission.

CHAIR: Did you each receive a summons issued under my hand to attend before this Committee?

Mr GILLIGAN: Yes.

Mr CONROY: Yes.

Dr BRADSTOCK: Yes.

CHAIR: Mr Gilligan, will you proceed with your submission?

Mr GILLIGAN: Yes. I shall begin with some very brief comments and then ask Dr Bradstock to respond on some matters of detail, particularly in terms of matters that were raised by Committee members at the Nowra hearing at which you were given an undertaking that we would come back to the Committee with further detail. Dr Bradstock will particularly be in a position to respond on some of those issues related to the science underpinning the difference between broad landscape hazard reduction versus strategic hazard reduction, and I will come to that in a moment, but also on grazing as a fuel management technique and possibly on biodiversity, that particular term of reference.

Can I also say at the outset that the service's submission is underpinned by two things. One is what we believe to be very good science and, secondly, what we believe to be a very sound operational record in fire management. Mr Bob Conroy, who is with me today, has that operational responsibility for the Central Directorate area of National Parks and Wildlife Service, which is the area covering much of the urban fringe and some of the most fire-prone country, and certainly areas where there were significant impacts from the fires in the 2001-02 summer. Bob is here to be able to give some of that operational detail.

I start by making the point that from 23 December 2001 until 24 January 2002 the National Parks and Wildlife Service responded to 141 fires on its parks and reserves throughout the State. This is a statistic that has not had a lot of coverage but 116 or 82 per cent of those fires were extinguished before they reached more than five hectares in size during that period. Five of the fires occurred

within remote section of Kosciuszko National Park and clearly in a park that is 600,000 hectares in area had the potential to be major fires but, in fact, were limited to a very small area.

We believe this is a significant achievement, given that the service manages some of the most rugged and remote areas in New South Wales. I stress that I think that record would have been even more successful—I know it would have been even more successful but for two factors: One was arson, where there were a couple of appalling incidents where we had remote area fire crews, who are our experts in getting into these remote locations and using dry firefighting techniques in those remote locations without any water to dump on a fire and actually getting that fire out and containing it, they had to be pulled out of the Mount Hall fire in the early stages of that fire so that the aircraft that was supporting them could go and respond to an arson attack in the Lower Blue Mountains. Had we not had that call off of the resources in order to respond to arson, arguably the Mount Hall fire might well have been contained before it wreaked the havoc that it wreaked during that horrendous period. The second major factor is obviously the weather. When we get those extreme weather conditions there is often not a lot that we can do.

I mention that the size of the fires that are managed within the service estate are summarised on the overhead that is up for members to see. You will see that 69 per cent of the fires are down at the 0 to 5 hectare mark and a further 10 percent of them are at the end of the 5 to 25 hectare mark. That is for a total of almost 2,000 fires over the last five years whereas the figures I gave you earlier were the figures just for the summer of 2001-02.

The Hon. TONY KELLY: It is not quite all of the summer of 2001-02. You started on the 23rd.

Mr GILLIGAN: That is right, just for a very narrow period.

The Hon. TONY KELLY: Including the 19th?

Mr GILLIGAN: Yes, that is a very valid point. Moving to fire origin and control across service managed lands, we need to know that 69 per cent of the fires that occurred between 1995 and 2002 started on park and were controlled on park. Only 9 per cent of the fires started on park and the moved off park despite some of the popular comment that is sometimes made on that subject, and 22 per cent of fires started off park and moved onto National parks and reserves.

Moving to the cause of fires. Lightning caused just over 20 per cent of the fires that the park service has to deal with. Arson or suspected arson causes in excess of 50 per cent, so that more than half our problem fires are generated by arsonists. Why were the fires over the Christmas-New Year period such major fires? There are fundamentally two reasons. The very severe weather over a prolonged period was the prime cause of the size and severity of the fires and the conditions in the Christmas period were of the worst possible kind, arguably the worst in some 50 years. Also, the risk of asset loss in these severe conditions was greatly compounded by the pattern of urban development and the occurrence of fires close to that urban interface.

The rare pattern of extreme and very high fire danger that was repeated weekly cannot be understated. The rate of fire spread is directly related to wind speeds in those conditions and we have to expect three to six kilometres per hour progress of a fire in severe conditions and we saw vivid and alarming examples of that with the Mount Hall fire moving 2.3 kilometres in 38 minutes and the Waterfall fire travelling 25 kilometres in just six hours.

The point has already been made by Commissioner Koperberg that it is not possible to prevent all wildfires. Wildfires will occur. What we do with fire management is to seek to maximise control over the fires that occurred subject to prevailing wind conditions and weather conditions. Our priority is on minimising the risk to life, property and community assets. All firefighting agencies in Australia, including the National Parks and Wildlife Service, support prescribed burning as an essential component of hazard reduction. Prescribed burning is an internationally accepted fuel management practice. We certainly use it, practise it and are committed to it. The service undertakes strategic prescribed burning up to focus hazard reduction burns where they will achieve significant risk reduction for assets.

Our programs of burns are agreed through district bushfire management committees. We have undertaken some 270 prescribed burdens on national parks estate over the past four years. More than 70 per cent of the burns that we have completed have been undertaken in collaboration with other fire authorities, principally the Rural Fire Service: that accounts for about 50 per cent or more of that collaboration. In terms of the area of prescribed burning, over the past several years it is shown on the graph before you and we have completed some 12,500 hectares of burning in the 2001-02 financial year but up to the end of March this year.

I draw your attention to the fact that if we look instead at areas of prescribed burns—which is relatively easy for the service to crank up if we want to go and drop a few incendiaries under mild weather conditions in the Wollemi or Kosciuszko national parks and then get the tally up, it is pretty easy but it is not going to mean an awful lot in terms of our role as a responsible fire manager—whereas the number of prescribed burns on an annual basis does not vary very significantly over the period that we are looking at because those burns are, in fact, targeted at the interface where we focus our asset protection rather than chasing some notional arbitrary area tally.

I would like to mention briefly that the summer fires of 2001-02 have demonstrated, I believe, the importance of co-operative and multi-tenure fire management or tenure blind fire management, as we refer to it at times, which is focused at combining community and agency resources, managing fire and fuel across the landscapes where they occur and where the risks are significant and need to be addressed and managing the fire trail system as tightly as we possibly can. I know there were some discussions and no doubt we will have some more discussion about fire trails but there is often discussion about fire trails in terms of locked gates on them. I stress that in fact locked gates are a very significant net benefit for fire management because they prevent rubbish dumping, which adds to the fuel load, and they prevent access for arsonists, whereas we have very simple arrangements to make sure that the relevant people who need to can get through them, but the net effect of a locked gates on a fire trail is a major positive in terms of the fire management of the area.

The service actively participates in 121 of the 132 district bushfire management committees throughout the State. The service is strongly supportive of the new planning guidelines that were issued in December "Planning for Bushfire Protection" and the service also supports the co-ordination of fire research and technology development at a national level through the development of a co-operative research centre. I stress that in terms of some of the refinements that the Government has introduced in terms of trying to streamline the environmental assessment processes for fire planning, the service not only supports and has been a part of but actually convened the interagency working party that developed those refinements and proposals for government, so there is no lack of commitment there.

Finally, I stress that the existing arrangements will work better through two major things: an enhancement of the co-operation and co-ordination arrangements that we can certainly discuss details of if the Committee wishes, and more work on training, which we can come to. I now propose to hand over to Dr Ross Bradstock to attempt to address hazard reduction and, in particular, to highlight the separation that needs to be drawn between broad landscape hazard reduction, which has been the subject of an awful lot of comment in the media and public discussion since the fires, and strategic hazard reduction that is targeted as part of a co-ordinated and comprehensive plan.

Dr BRADSTOCK: If I may speak to the slides. Our presentation is in response to a question that was raised at the previous hearing and the question was reiterated again this morning. As we stated in our submission, there is no real evidence of any relationship between fuel condition in the landscape—and what we mean by fuel condition is fuel loading and structure, not only the loading but the physical arrangement of fuel is also important in terms of fire behaviour but there is very little evidence of a relationship with the broad landscape scale between these measures that fuel conditions and wildfire size and limits. We want to flesh this proposition out this morning. The argument that fuel build-up and lack of hazard reduction is causal to the recent fires was aired in popular debate during the event and the whole notion of broad area burning as a solution or panacea to these sorts of events was widely promoted at that time.

We want to contrast that to the sort of strategic approach that occurred in New South Wales. You can ask the question: Is there any evidence of a landscape scale effect and broad area fuel

conditions that might result from a broad area approach? In other words, is wildfire size related to the percentage of the area that has recently been treated through a broad scale hazard reduction or perhaps through other things such as the incidence of other unplanned fires? The expectation that people have when they promote this argument is if there is a negative effect on the area recently treated through prescribed burning there will be a negative effect on wildfire size, so if you treat a lot of area, wildfire size and incidence will come down. That is the expectation.

It is extremely difficult to test this proposition in New South Wales or nationally because of a lack of adequate records of suitable length. It is difficult for scientists to draw any conclusions that are statistically valid simply because the records do not exist. This is really a problem of fundamental importance in our choice of approaches of how we apply hazard reduction because if we were to go down a broad area approach, we need to know exactly what we are aiming for. We should note here that hazard reduction in general—all agencies that undertake hazard reduction do it for the purpose of facilitating fire suppression—is not undertaken to stop wildfires on their own without the addition of suppression resources. You can ask the question: Where does the effective fuel-free limit lie? In other words, if we are going to manipulate fuel in the landscape how much do we have to do? By manipulating fuel through hazard reduction we are essentially creating fuel-free areas. They may be ephemeral but how much do we need to achieve? The second part of that question is: If we can define that limit, how accessible is it to management? Can we actually achieve it through broad scale prescribed fire? We can contrast that with the strategic approach.

As I have noted there are very few studies in Australia or elsewhere overseas, because of this problem of lack of record keeping, that have explored these relationships in a scientific manner. However, there are a few avenues of research which, at least, indicate that this sort of limit, or bar if you like, is actually very high. Of course, this reflects the effects of weather, as we have heard in discussion this morning. There are a couple of studies which have actually explored what has happened to wildfire size and incidence before and after changes to prescribed burning programs. I can refer to one done on data from Western Australia and also from data from the Cape regions in South Africa. Both those studies do not show any effect of large changes in area treated by broad scale prescribed burning and they show no effect on wildfire size or incidence, which is rather interesting.

Mostly, this reflects the influence of extreme weather, as we have heard. In many ecosystems throughout the world which are fire-prone, the vast bulk of area burned is accounted for by fires in extreme weather. It is actually worth noting that relatively few fires that burn in extreme weather account for most of the area burned. Why is this so? In general terms throughout the world you will find that in flammable woody vegetation most aged classes of fuel actually burn when the weather is at its most severe. That primarily reflects the influence of wind on rate of spread and the development of spot fires so that major fuel discontinuities of different scales are bridged. For example, fuel discontinuities up to the order of 1-10 kilometres can be either burned around or the fire goes straight over the top through the propagation of embers. In many parts of the world this sort of phenomena is exacerbated by the existence of rugged terrain. It is worth pointing out that ground suppression to make use of prescribed burning treatments in this type of scenario is always very problematic in rugged terrain because of the danger to personnel.

This combination of factors is a very common syndrome both locally and in other fire-prone regions of the world. Locally we can clarify some of these points. If we look around the sclerophyll communities around the Sydney area and the east coast, our fuel accumulation is relatively rapid compared to some other parts of Australia at similar latitudes and also other parts of the world. Our predictions from a standard fire behaviour model applicable to this type of vegetation indicate a value of approximately eight tonnes per hectare is a critical fuel level because this represents the fuel level at which, under extreme conditions, the fire becomes so intense that suppression is impossible—it fails. If you look at some of the plant communities that are common around the Sydney region you will find this level of fuel is reached in two years. We can validate that through just some examples taken from the recent fires in areas burnt at Christmas time.

The top left-hand corner of the slide shows an area treated in April 2001 where the fire has spread through. On the right is an area in 1999 where the fire has spread through and the patterns of scorch in that site are such that indicate that the fire intensity was uncontrollable. Cycling down through 1988 and 1995-96 treatments, they all show evidence in terms of pattern of scorch which

indicate that the fires were uncontrollable. These are all areas affected by the head fires on days of extreme weather.

The effects of wind in these communities locally is very profound because of the open canopy structure in our vegetation. We are all aware that much of this type of vegetation occurs across New South Wales in very rugged terrain, and this seems to have something to do with the long distance spotting phenomena and we are commonly getting reports from observations in aircraft which show spotting in the 1-10 kilometre range. We should also note that our fire behaviour science that underpins fire management has recently been shown to under predict the rates of spread in extreme conditions, sometimes by a factor of three. Big fire seasons in New South Wales are unequivocally associated with extreme conditions. For example, in 1968-69 which was a phenomenal season associated with drought and then the occurrence of extreme weather, the records from the old Forestry Commission annual reports indicate more than one million hectares of State Forests burnt in that season. One compares that with 1975-76 which was a wet year where State Forests had 8,500 hectares burnt. Similarly in 1993-94 in national parks the fires then were associated with extreme weather and there were 382,000 hectares of parks burnt contrasted with 1999-2000 which was wet where there were approximately 6,700 hectares burnt. This reflects the effects of weather.

I draw the attention of the Committee to this image which encapsulates many of the points I am making. It is aerial image of Como/Jannali which, members may recall, suffered very heavy property losses in the 1994 fires. If one looks at this presentation one can see that in excess of 50 per cent of this landscape is water, concrete, bitumen or tiles, yet in extreme conditions the fire propagated amongst disjunct remnants of bushland through spotting. That illustrates the power of the fire under these conditions. In the centre of the photograph shows where a spot fire developed in that strip of bushland and resulted in the destruction of more than 80 houses. In other words, a single point ignition had the power to develop into that fire literally over a scale of about 100 metres or so.

The Hon. RICK COLLESS: What were the fuel loads there at the time?

Dr BRADSTOCK: They were high.

The Hon. RICK COLLESS: What tonnes per hectare?

Dr BRADSTOCK: I could not tell you off the top of my head but they were probably pretty high from indications.

The Hon. RICK COLLESS: What do you mean by "pretty high"? Twenty tonnes?

Dr BRADSTOCK: Probably around that sort of level, yes. That area had not been treated in any way for a long time. That is actually a good point because it indicates if you carry high fuel loads next to structures, even a small strip of bushland can result in a phenomenal power of destruction. The other thing that we should note about the photograph is that if you look at it a couple of rows back, literally within 100 metres, the risk of destruction of property changes by up to two orders of magnitude. In other words, once you are back about 100 metres you have very little chance of being burnt out, and this has something to do with our patterns of urban development, and there are lessons in there. We are managing a lot of terrain that looks like this but does not have the water, houses or roads. In other words, it is completely clothed in bushland. If we were going for a broad area solution we would have to implement de facto the level of non-fuel parts of well over 50 per cent, and that is a very big ask in management. Even if we were to implement that level of fuel-free conditions across more than 50 per cent of the landscape this sort of example shows that the fires would still propagate under extreme weather.

This example tells us that in extreme conditions the fire finds the fuel. Large-scale discontinuities in fuel may not impede fire spread. Fires reach the bushland edge very rapidly, and we have seen evidence of that in the recent event. Small areas of bush directly adjacent to buildings can result in highly destructive fires. The chance of destruction diminishes by an order of magnitude or more within 100 metres of the bushland edge. All fuel ages greater than one year locally will burn in extreme conditions, and head fire suppression seems to be ineffective in fuel ages greater than two years. In other words, the fires are too intense. We have to protect people and their property and we have to do that in the worst possible conditions because that is when the destruction is occurring. In

extreme weather the evidence seems to indicate that the effective broad scale fuel-free limit is very high in landscapes. It seems to be well above 50 per cent of the landscape you would need to treat. There is actually no evidence of any broad-scale program of hazard reduction in Australia or anywhere else that we can find that has ever reached this limit. It is actually possibly unachievable in practical terms as a broad scale solution. But pursuit of the broad-scale solution may actually be self defeating because you are continually trying to reach a level that you cannot achieve, mainly because we do not have the opportunities. It could actually have undesirable side effects. By going for hectares you may be neglecting the important stuff at the urban interface because you only have limited rolls of the dice.

The National Parks and Wildlife Service therefore considers that a strategic approach to hazard reduction is a more feasible and effective alternative. In extreme conditions hazard reduction is most effective in mitigating risk of destruction when it is carried out immediately adjacent to buildings and other assets, economic assets et cetera. In less severe weather our strategic hazard reduction in the broader landscape will be an effective adjunct to suppression. We are committed to treating areas in the broader landscape which are selected on the basis of the fact that they offer an advantage for suppression once the weather calms down or abates. Similar conclusions have been made in fire-prone regions elsewhere in the world. I will read a quote from an analysis of the problem in California. An article was published in 1999 in the prestigious American journal *Science* which is one of the top scientific journals in the world. It is authored by Dr John Kierly and co-authors from California. They summarise the problem as follows:

> Large catastrophic wildfires in brush-covered regions of California are often driven by high winds and under these conditions even modern fire suppression techniques are ineffective. Today people ignite most of these fires. Although fuel structure is an important determining factor in fire behaviour, the role of structure diminishes markedly under firm winds that can blow at speeds exceeding 100 kph and are responsible for the majority of area burned in California brushlands. Under these conditions fires readily burn through all fuel age classes and thus rotational burning programs that attempt to modify vast stretches of chaparral landscape through age-class modification are not likely to be effective in stopping these catastrophic fires. This may come as welcome news to resource managers because the combination of legal restrictions and financial constraints makes large scale prescribed burning of brushland landscapes unobtainable.
>
> Our results support the conclusion that the most effective strategy for reducing catastrophic losses from wildfires is to minimise the management efforts spent on the bulk of the chaparral landscape and focus on strategic locations. The worst fires predictably follow landscape features, and these patterns can be used to select buffer zones at the urban wild land interface forms more intensive fuel management.

I conclude by saying that that is a highly relevant situation. If we change some of their local references to our local references, that would be an excellent summation of our problem. It would also be an excellent summation of our management approach. The final point I note is that the brief overview I have given you is actually founded on the application of existing fire behaviour knowledge stemming from science and it is really founded on scaling up that knowledge to the level of the landscape.

The Hon. TONY KELLY: The submission the Committee received from New South Wales Farmers referred to the Goobang fires which started on the 19 December. It said that the Goobang fire management plan was not ratified by the National Parks and Wildlife Service even though it was prepared more than two years ago. Can you outline the fire planning process followed by the National Parks and Wildlife Service and respond to the suggestion that the Dubang fire management plan has not yet been ratified?

Mr GILLIGAN: The point that I think needs to be made at the outset here is that immediately following the 1994 fires and the inquiries that followed, the service embarked upon a process of developing reserve fire management plans with some intensity. In the case of Goobang, Goobang did not become a national park until 1995 anyway, and so, soon after that we started researching the fire history and documenting the park with a view to preparing such a plan.

In 1997, when the Rural Fires Act came into effect, the focus pretty squarely shifted to district risk assessments and fire management planning. In recent years the service, quite unapologetically, has focused its resources on assisting the district fire management planning process, rather than just trundling away with a narrow focus on our parks and reserves, which in many respects might have been simpler.

The reasons for this are twofold: firstly, we are committed to a co-operative approach in terms of fire management across the landscape, and secondly, at the very highest level, a lot of our reserves can be managed, in a fire sense, through a combination of the district fire management plan and the plan of management for the reserve, which we are also working on in each case here. That is the background on the shift, if you like, in terms of our attention on these matters to try to get the most effective operational arrangements on the ground.

The fire management plan for Goobang has been in draft form for some time. It has been held in that draft form pending the finalisation of the district planning processes. In that case I think we have three risk assessment plans, one for the Conobolas zone, which is currently on exhibition, one for the Parkes zone, which was approved in February this year, and one for the Narromine zone, which was approved in February this year. The fact that the plan has been sitting there in draft does not mean that it has not been useful. It has certainly been used to assist the operational decisions that were taken by the incident management team during the Goobang fire.

May I make a point with respect to reserve fire management planning, and I think in many respects it is true with regard to district fire management planning. When we talk about how we might improve things, rather than overturning the systems that we have, I think there is a very real challenge for us to make those systems work more effectively. The district fire management committee planning processes have, arguably, been in place for only a relatively short period of time, and I meet very few people who say that they are universally working wonderfully throughout the State. The reserve fire management plan in the case of Goobang is a classic case. It was placed on exhibition for a two-month period, all neighbours of the park were notified, I know that copies of the draft were given to key people in that local area, and we received one submission.

That is of particular interest to me on two sides. First, clearly, whatever we were doing, we were not effectively engaging with the community. Second, it is a little ironic that we were being criticised in the course of the Christmas 2001 fires for not accepting local knowledge and not recognising the value of local knowledge. Clearly, we do accept that; and clearly, we have to improve our effectiveness in trying to get these things operating at a level where the community is engaging with us.

May I give you one further example of that. In the case of the southern Sydney margins, we had six reserve fire management plans for notable fire locations during this horrendous period, such as Nattai, Royal National Park, the Dharawal State Recreation Area and Garawarra. Six reserve fire management plans were out on public exhibition for a period of three months, with the closing date for submissions 28 December. In total, we received five submissions for six plans. That history is not particularly uncommon.

I do not put that on the table to in any sense bag the community. I am saying that clearly there is an issue here that the agencies, in the techniques we are using, are not managing to effectively engage the community, and I think to some extent we do need to challenge the community to come and use the processes that are there. In the case of those six southern Sydney areas, we have extended the exhibition period for the receipt of public submissions, and we have taken some initiatives in running community workshops and so on, to try to more effectively engage the community, and we will need to do that.

The other point I wish to make is that prior to the 2001-02 fires we had already recognised the desirability of streamlining our fire management planning processes for the reserves. I have already mentioned that we had started on a particular format and style of plan prior to the Rural Fires Act. With the Rural Fires Act and district fire management plans, there is a question of whether you still keep trundling along with the old system. What we have done is to come up with what is effectively a two-map planning process. In this case, the model we have used, which we had developed last year, is for Myall Lakes National Park. On one side, it is about assets and values, and it locates all the areas that need to be identified for protection. On the other side, it is about fuels and fire control advantages. It includes all the details of the operational guidelines that need to be applied to the different zones within that park.

We are trying to streamline that process, which has been outlined in our submission, with a view to looking at the possibility that under the district fire management plan perhaps a two-map

series is all you need for our individual reserves in an operational sense. This is the map that is in the back of the truck that is on the way to the fire, or in the fire control centre, or on a CD-ROM for immediate reference in a fire control centre situation during a fire emergency. So much of what then happens at operational level is map-based, so it is user-friendly in that sense.

So there is an awful lot of that we are doing, and I think there is some more refinement we can do in making those plans more effective, making them more collaborative, and ensuring that we are engaging the community more effectively.

CHAIR: Are you happy for these documents to form part of your evidence?

Mr GILLIGAN: Yes.

Mr E. T. PAGE: A number of comments have been made about grazing as a hazard reduction technique. What is the National Parks and Wildlife Service's position on this?

Mr GILLIGAN: Grazing can be a useful technique in some land tenures and within some land management regimes, depending on the management objectives. What I think is dangerous is if we think of grazing as a panacea, or if we think of it in isolation. Often it is itself associated with increased levels of burning. For example, the leases over State forests that have been traditionally grazed have also been repeatedly burnt and have been the source of many, many fires. They are burnt by the people undertaking the grazing, in order to stimulate fresh growth and so on to feed the grazing animals. So grazing is a very complex issue.

The other point that I think needs to be made is that it does not mean that you will not have fires. In 1968-69, for example, when more than one million hectares of State forests were burnt, significant areas of those State Forests had grazing leases; it did not stop them from going up in smoke. In 1974-75 nearly 1.25 hectares of the western division burnt, the bulk of it being pastoral leases, where grazing was taking place at varying levels of intensity. So grazing per se does not solve all this. I could go on. The 1997 Pilliga fire originated in State forests where there was extensive grazing as a hazard reduction technique. It did not stop the fire from starting in the State forests; it did not stop the fire from burning nearly 80,000 hectares of State forests and some 20,000 hectares of private property. At that time, only 45,000 hectares of National Parks lands in that area, which did not have grazing on them, were in fact impacted. So, whilst you cannot draw ready conclusions, the bottom line is, do not treat it as a panacea, and it will be specific to particular locations.

The other point that is always worth making in terms of the association of fire with those grazing activities is that in the spring fires of 2000 on the North Coast and ranges, where some 200,000 hectares of leases, private property and State forests and another 180,000 hectares of national parks were burnt, we were fighting 29 fires. Twenty-two of those 29 fires had originated on private lands adjoining parks and reserves and had been triggered by burning by land-holders in one form or another, either legal or illegal.

So grazing can be useful, but it is no more effective than any other hazard reduction method, and in lots of places where you are also trying to manage the land for a biodiversity objective rather than a timber production or pastoral activity objective, it has significant ecological impacts which make it not favoured.

Mr E. T. PAGE: At the Nowra hearing, Mr Snell from Access for All raised certain criteria with regard to the application of National Parks and Wildlife Service determinations on fire trails being open or closed, particularly following the transfer of land from State Forests. Could you provide clarification on this? What sort of money is are available for fire trail construction and maintenance, and is it sufficient?

Mr GILLIGAN: Firstly, as I think Commissioner Koperberg has already referred to this morning, if you have an area of land that is being managed for production forestry, logistically you need a fairly extensive network of access roads and trails to support the logging operation. If that forest is being taken over as a national park or reserve, you still need a network of roads for visitor access and recreational pursuits, and you need some roads for fire trails and other maintenance and management work.

When we take over an area of land like this, we have to decide what is the subset of the track system in a production forest that we need to retain for those purposes and how we manage that. With respect to fire considerations, those decisions will always be taken in association with a dialogue with the district bushfire management committee, the local fire control officer and the other people who are involved. It is also taken with the advice of our regional advisory committees, which include a broad representation of people from across the community.

In fact, in the north-east of the State we are currently embarking upon an exercise where we are working with the recreational four-wheel-drive clubs to help us with a prioritisation of which trials we ought to be putting our priority on for maintenance purposes and which ones are of a lower order of significance from a recreational point of view. So it is a consultative exercise.

In recent years I have gotten myself in trouble for entering into a memorandum of understanding with the recreational four-wheel-drive clubs. One of the commitments in that memorandum of understanding is that we will talk to them before we go around and close trails that obviously are potentially significant for them.

With regard to resourcing, over the last five years the average commitment from the service for fire trail maintenance is about $1.45 million per year, and that figure has increased. In fact, in 2000-01 the figure is $1.83 million, so it is not on a decline but an increase. Each year we maintain about 2,000 kilometres of fire trails. It is just under 2,000 kilometres, but certainly well in excess of 1,000 kilometres.

We maintain that number by grading and resurfacing and putting in culverts and bridges and the like. There are a further 800 kilometres or so maintained by way of slashing and trittering and there are some that are of a lower order of significance, depending on the importance of the trail for management purposes. The only other comment I would offer is that our regional manager for the South Coast, Diane Garrood, made the point in the case of one of trails in the Nowra hearing—I think it was the Yalwal trail—that sometimes something that some local people might feel is an important trail is not being used because of safety reasons, and at times that can be a significant issue.

CHAIR: Mr Smith and Mr Torbay are wanting to ask questions but because of the length of the oral submissions we are almost out of time. So, we will have those two questions, and any other questions will be by way of notice.

The Hon. RICK COLLESS: I had questions too.

CHAIR: We will try to squeeze it in.

The Hon. RICK COLLESS: I do not think we have had enough time to question National Parks. I think we should have an additional hearing.

Mr R. H. L. SMITH: I would agree with that.

The Hon. RICK COLLESS: I do not think we have had time to fully examine some of the evidence they have given.

CHAIR: Well, we will have the two questions that have been nominated.

Mr R. H. L. SMITH: I fear for the damage that may be done in almost any summer period if National Parks theory on hazard reduction burning becomes government policy. It has always been pointed out to me and the people who fight fires in a practical way that at the ignition point, if there are low volumes of fuel on the ground and you can get there quickly to put it out, the damage will be minimal. We are talking about extreme conditions over the Christmas/New Year period. Most fires that happen each summer do not occur in those extreme conditions. You almost contradicted yourself by saying that had you been able to stay at the Mt Hall fire—which also says you have a lack of resources—rather than going to the fire the arsonist lit, maybe you would not have had Mt Hall. My question is, is it not at the ignition point and the quantity of fuel at the ignition point and the speed of getting there that stops most fires? They do not get the headlines, we do not lose property and we do

not lose lives, but to do that we need to do hazard reduction on a far bigger scale than your reduced amount over the past few years.

Mr GILLIGAN: I think there are quite a few points there, some of which I want to challenge and certainly comment on. We almost always want to do more hazard reduction in any one year than we get done. I think that is the same for absolutely every fire authority or land manager throughout the State. We have a rolling program of hazard reduction. We use hazard reduction, as has been alluded to by various presentations, as an aid to fire suppression. If you get your hazard reduction in, it is a significant plus to your fire suppression effort. If you do not manage to get the hazard reduction in, it is a case of what else you can do to aid that hazard reduction effort to pick up the slack. That may mean mobilising more resources or in particular circumstances having people on standby. It may mean fire preparedness arrangements, and so on, in vulnerable spots. We are committed to hazard reduction. We are committed to doing it collaboratively. We are committed to doing it in accordance with the terms of the district bushfire management committees. So, when you say you have concerns about future summers if our policy becomes government policy, I am not sure which part of our policy it is that you are objecting to.

Mr R. H. L. SMITH: The presentation by Dr Bradstock.

Mr GILLIGAN: The presentation by Dr Bradstock is based on simple scientific facts that show that the critical determinant of whether or not a significant area will be burnt is extreme weather. The science is there, we cannot avoid that. People might want to have fond memories of some good old days and selective memories about past management regimes—

Mr R. H. L. SMITH: You said you would have put out Mt Hall had you stayed there. Is it not getting there, keeping the fire at a low level—and it has had hazard reduction before, so it is at a low level, not at an intensity that you cannot get near it to put it out?

Mr GILLIGAN: I think your comment assumes that you are going to be able to get that uniform level of fuel reduction. That is just not achievable. We have had the distressing experience in recent years of the Ku-ring-gai hazard reduction, where we lost four of our staff. They went back in on the second day, when the tragedy occurred at Mt Ku-ring-gai, because that area of bush had not burnt comprehensively. Patches of it were still quite thick and dense. I went back in after that to look at the site and there were still pockets of quite dense fuel and heavy fuel loads in there. If your lightning strike happens to hit one of those intense pockets you will have a problem. It is just not feasible to get the broad landscape fuel reduction that we are talking about, and the science is there from southern California and from South Africa—the same conclusion.

I am very committed to maintaining our expertise and specialist staff training on dry firefighting and remote area firefighting, because a lot of the community still think you put out a fire by having a bucket of water. Most of our effective work is with people with a pretty tough job of using a rakehoe and a chain saw in a remote location with not much water in sight other than what is in their water bottles. We do have to have our expertise tuned to do that.

The other point is that the resources you will have available to you are always going to be challenged in the extreme weather conditions we had. The call had to be made in that instance where an arsonist lights up adjacent to private property. Of course the resources are going to be targeted to fix that and we will have to hope that the weather is kinder and we still get a chance to get back into Mt Hall. Obviously, ultimately Mt Hall turned into a nightmare for us. It would have been nice if we were able to finish the job, because we were close to it.

CHAIR: Given the concerns of Mr Colless and Mr Smith, we will abandon the break and carry on questioning.

Mr GILLIGAN: I apologise for the length of the presentation, but I stress that the length of our presentation was an attempt to explicitly and specifically address the issues raised by members of the committee at the Nowra hearing.

CHAIR: That is understood.

Mr TORBAY: A whole range of views have been debated on the issue you referred to of fuel build up or the management of fuel, particularly in national parks. I think we need to hear more about it. We heard in Dr Bradstock's presentation of eight tonnes per hectare and there have been suggestions of up to 150 tonnes per hectare in national parks. Is better reporting necessary regarding measuring fuel build up and are more resources necessary for a better strategic approach to meet some of the challenges?

Mr GILLIGAN: I would like to have Bob Conroy comment on that because of his operational familiarity with the issue. But I stress at the outset I do not think it is so much those processes as just recognising that we do the assessment of the fuel loads. There is consultation at the district bushfire management level as to where those fuel loads are and whether they are strategically significant in posing a particular risk that needs to be addressed and on what time frame as part of an overall work program. But we have to bear in mind the point that has been made by one or two people. That is, that the fuel levels, once you get beyond nine months you have fuel that can and will burn. If one of those pockets of heavy fuel that I referred to in answer to Mr Smith happens to support the ignition, it can race away through relatively low fuels.

The other point is, just to underscore the point made by Dr Bradstock, that you would need in excess of 50 per cent of the landscape fuel reduced. Given the challenge that we have with the concerted efforts we put in now to get hazard reduction done on a year-by-year basis with all the agencies, you will not get it done, the weather will not let you do it. Within two years we will be above that eight tonnes per hectare level that is potentially, under extreme conditions, a problem. We are not going to solve this by any simple fix. We will solve it by refining and doing better the things we are already doing and fine-tuning them and getting better at it. I invite Mr Conroy to speak particularly about what happens in his patch with fuel management.

Mr CONROY: I can illustrate the complications we have when you refer to fuel loading and the effect of fuel loading on fire behaviour quite simply by referring to the fact that we can have 10 tonnes per hectare of fine fuel in a grassland that can be extremely dangerous. We can have 10 tonnes per hectare of fine fuel in a forest and it will not be dangerous. The reason there is a difference between the two is the distribution of fuel in those two fuel types. In one example, the grassland, the fuel is very well aerated and ignites easily and spreads easily. The rate of spread of a fire in a grassland is 10 or 20 times the rate of spread of a fire with a similar fuel loading in a forest. In a forest that 10 tonnes per hectare is compacted and therefore the fuel does not ignite as readily. It is an easy example just to illustrate the differences of the problems we have when we talk about fuel loading and not talk about other factors that are quite significant in determining fire behaviour.

I have done a lot of work in the Sydney basin region in sampling fuels. It is a very tedious, tiresome process, particularly when you want to get accurate records. If you go into a woodland or a forest in the Sydney basin and you throw three sample squares out and you expect you will get a reasonably accurate reading of the fuel loading from doing that, that is quite erroneous. You will not. You need to approach it with a committed approach that is very resource hungry to get reliable figures. The figures I have come up with are figures that looked at fuel loading in grassland, shrubland, woodland, forest and rainforest. The highest figures I ever came up with in very cold fuel types was about 35 tonnes per hectare. That was in a shrubland that was about 30 years old. In a forest environment I think the top reading I was able to come up with was about 25 tonnes per hectare. That is in the Sydney basin area.

I am aware there are figures that are much higher, say, in the order of 40 tonnes per hectare to perhaps 50 tonnes per hectare, in some of the Alpine ash forest in the Southern Tablelands and Kosciuszko National Park. It is a very complicated process to get reliable figures. It is worthwhile to make a commitment to do that, because having a good understanding of fuel loading is quite important in devising fire behaviour models and in getting some sort of assessment of the relative fire potential in different areas. That is the only way you will be able to prioritise and have a strategic approach to hazard reduction burning.

Mr TORBAY: So better information would be valuable?

Mr CONROY: Yes.

Mr GILLIGAN: Mr Chairman, I draw attention to the map I referred to earlier. Through the map-based reserve fire management plans we are trying to come up with some refined and relatively simple and less resource-intensive means of getting the essential information onto a map. Fire history gives us a surrogate for that up to a point, and the nature of the fuel. If we can do a simple calculation we will have something that is workable. That is the sort of refinement we need to move towards as we go into the next generation of collaboration and co-ordination of fire management.

The Hon. RICK COLLESS: Dr Bradstock, could you give the Committee an indication of what would be the difference in ferocity of a fire supported by fuel loads of, say, 40 tonnes per hectare compared with a fire supported by a fuel load of four tonnes per hectare? Given a mid-range index of 25, would the fire with 40 tonnes of fuel be 10 times more ferocious than a fire with four tonnes or would it be more than 10 times more ferocious?

Dr BRADSTOCK: To answer that question accurately I would have to do the calculations specifically. It would be an order of magnitude more intense at least.

The Hon. RICK COLLESS: So there would be a direct relationship between the amount of fuel and the ferocity of the fire, or more than that?

Dr BRADSTOCK: It depends on the type of fuel arrangement. If you are talking about a forest, there is a currently accepted relationship between the rate of spread and fuel load. In other words, the rate of spread is affected by the fuel load. That sort of order of magnitude difference would be reflected in the fire behaviour without reference to specific calculations for the fuel type.

The Hon. RICK COLLESS: The director-general stated that 82 per cent of fires were extinguished before they reach five hectares in size. What was the range of fuel levels in those 82 per cent of fires? Can you give us any figures on that?

Dr BRADSTOCK: No, we would have to calculate that.

The Hon. RICK COLLESS: I do not know about calculating; I would have thought it would have been a the monitoring thing, that you would know where the fuel levels are in the park.

Dr BRADSTOCK: That is right. We would have to look at our records to see what was done in each specific instance. We can do that.

The Hon. RICK COLLESS: I would appreciate that information. Also, of the 18 per cent of fires that escaped, what were the fuel loads in the areas where they started? Do you see that there is a relationship between the fuel levels in the forest and the starting ferocity of those fires? We have already heard that there is no significant relationship on the landscape basis. I want to focus mainly on where the fires start and the ferocity of the ignition when it gets going, say, before it reaches five hectares.

Dr BRADSTOCK: By definition there has to be.

Mr GILLIGAN: Regrettably, that is why the arsonists presumably target some of those areas.

The Hon. RICK COLLESS: But surely the 18 per cent of fires that escaped were not all started by arsonists, or were they?

Mr GILLIGAN: I do not know. I would have to check the detail of which fires and we would have to come back with that on notice. But as I have already indicated, more than half the fires we deal with are started by arsonists. So I imagine a significant proportion of them will be.

CHAIR: Do you have any problem with taking those questions on notice, Mr Gilligan?

Mr GILLIGAN: Not at all.

Mr R. H. L. SMITH: New South Wales Farmers gave some figures in its submission that I would like you to confirm or deny. The submission states,

> … figures showed that the level of prescribed burning operations conducted on lands managed by the NPWS has declined by 60% over the last 7 years, from 47,816 hectares in 1993/94 to just 19,220 hectares in 2000/01 ... A comparison of the level of hazard reduction activity undertaken by the two largest public land managers, NPWS and State Forests, reveals a stark contrast [in hazard reduction activity levels].

In 2000-01 State Forests completed hazard reduction work on 15.5 per cent of their land compared to 0.37 per cent undertaken by the National Parks and Wildlife Service.

Mr GILLIGAN: I cannot comment on the State Forests figures. The National Park figures that are quoted sound right in terms of the record that is in our annual report. The only comment I would offer is that I know the bushfire co-ordinating committee at the moment is looking at refining the reporting arrangements to make sure that we are all very clear across all the agencies about how the hazard reduction is reported and precisely what is reported. In the case of National Parks, for example, I would stress that the figures that are presented there are for prescribed burns. That figure does not include the areas that are slashed and trittered and the subject of weed eradication programs and pile burning around the urban interface. It is a subject which, at the bushfire co-ordinating level, we are co-ordinating our processes on to make sure that the figures are clear and comparable.

(The witnesses withdrew)

JOHN BLAIR SHEEHAN, President, Australian Property Institute, New South Wales Division, Level 3, 60 York Street, Sydney, and

GAIL KAYE SANDERS, Executive Officer, Australian Property Institute, New South Wales Division, Level 3, 60 York Street, Sydney, sworn and examined:

CHAIR: I am advised that you both have been issued with a copy of the Committee's terms of reference and also Legislative Assembly Standing Orders 332, 333 and 334, which relate to the examination of witnesses. Is that correct?

Ms SANDERS: Yes.

CHAIR: Did you receive a summons from me to attend this Committee?

Ms SANDERS: Yes.

Mr SHEEHAN: I did.

CHAIR: Would you please state your occupation and the capacity in which you appear before the Committee?

Mr SHEEHAN: I am a valuer and chartered town planner and I am the President of the Australian Property Institute.

CHAIR: Would you care to make an opening statement?

Mr SHEEHAN: I would, thank you. I apologise at the outset for my cold. It is one of those diseases that is occurring in Sydney at the moment. The institute has already forwarded a submission that is before you in respect of the bushfires inquiry. We felt that items (c), (e) and (g) of the terms of reference were of particular importance to our institute, particularly in the area of land use decisions and development planning and the question of building regulations. I take you down to paragraph 5 of the institute's submission. You will note that we have been concerned about the policy of councils, particularly in peri-urban areas around Sydney to override the Building Code of Australia [BCA] and the relevant Australian standard. The grounds of those overridings that have occurred have been, first, in relation to negotiations or considerations in respect of development applications, and more particularly on the advice of fire committees, which, as you are probably aware, service sometimes more than just one council.

The institute has been made aware of what appear to be inconsistencies in the advice given by those committees and, as we say in the submission, we are uncertain of the basis, where it has been put forward that there should be an overriding or a variation to the requirements of the BCA or the relevant Australian standard, just what the criterion is for the overriding occurring. An issue we would raise—it underlies a lot of what is in the institute's submission—is that fire knows no cadastral boundary. It seems fatuous to assert that the requirements in one particular local government area should be different from those of the adjoining local government area. I am quite certain that the outbreak of fire would not be aware of the cadastral boundary between one council and another council. Consequently, we believe there is a requirement that there be clear guidelines in relation to what the development standards are for properties which are subject to development applications in areas which have a propensity for bushfire, and, secondly, that there be those guidelines on a statewide basis. We have suggested in the submission that either Planning New South Wales or the Department of Local Government should promulgate those requirements.

We are opposed to the current situation. We are told by members, particularly in the Blue Mountains and the north and south—particularly in the southwest and the Blue Mountains—that there is variability in the requirements councils may place on applicants. That is extremely difficult from the point of view of our members who are trying to assess the worth of a property or advise in terms of due diligence if they find out that the development standards being applied are not necessarily those contained in the BCA or the Australian standard. If the BCA or the Australian standard is deficient it should be increased, amended or changed to reflect whatever those enhanced requirements are. From

what we can see their does not appear to be a lot of evidence that the variations undertaken by councils approving development applications are necessarily based on a raising of standards; it is simply a different standard being applied. As I said earlier, we are uncertain as to what the criterion is.

The Hon. TONY KELLY: Do you have specific examples of BCA conditions that have been watered down in some areas?

Mr SHEEHAN: I mentioned one in the submission. I did not want to make the submission particularly detailed. We were made aware of a particular case before the Land and Environment Court. It is referred to on page 2 of our submission at paragraph 4. The matter involved the Blue Mountains council. The transcript of the case, which was in front of a commissioner, shows considerable variation in the council's stance in relation to bushfire standards. It appears that there was concern about retention of native vegetation—more so than application of clearance around where people were going to be living. There appears to be a need for balance with the retention of as much native vegetation as is desirable. We believe the balance has to fall in favour of human safety.

Mr E. T. PAGE: You talk about the discretionary powers of council vis-a-vis the BCA and Australian standard, the potential for liability issues. Are you aware of any cases in which a council has been sued or legal proceedings have been taken against the council?

Mr SHEEHAN: No, I am not aware of any proceedings but there has certainly been comment in the press at different times, particularly after outbreaks of bushfires, where people have complained that they have been unable to clear vegetation or whatever else. I am unaware, though, of any actual cases.

I am applying a more general rule that councils, when they are moving away from the protection of the BCA or the Australian standard, they are obviously moving into relatively uncharted territory. I go back to what I said before, that the variation or the moving away from those standards is done on the advice of a fire committee. It is very difficult to understand exactly what the criteria is that the fire committee advice is based upon. We have been told that in various cases that is based on local experience. Well, if that is the case, it would appear that there is some failure in the BCA or the Australian standard and maybe that level should be raised. If there is a need for a different interpretation, again the BCA should be applied and it should be altered so that it can be applied on a statewide basis. I certainly do not accept the statement that I believe has been made by some councils that we have particular requirements in relation to bushfire control. As a said before, it does not respect local government boundaries.

Mr E. T. PAGE: But there are particular situations in a council area that may require some particular requirement that is not a general requirement in other areas?

Mr SHEEHAN: Well, there could be, but I find it hard to accept that that could not be embodied into an expanded BCA or an Australian standards in certain circumstances.

Mr E. T. PAGE: It might be hard to get the New Zealanders involved to be concerned about bushfire control. Might I point out that in your submission is said that you are concerned about (b), (e) and (g), but it is actually (c), (e) and (g).

Mr SHEEHAN: I apologise. You are quite correct

The Hon. RICK COLLESS: Following on from Mr Page's line of questioning, where it may be appropriate to have different building codes in different fire protection zones or fire risk zones, for example. Has your institute given any consideration to the type of structural changes that may be made to buildings in those high-risk zones to incorporate fire protection measures built into the house when it is constructive?

Mr SHEEHAN: No, we have not, in the sense that not that those requirements might not be desirable, but it would be probably one of our sister institutes, the architects and maybe building surveyors, who would be more appropriate for that question to be directed to. However, we would support such changes. I go back to what I said before, that the local government boundaries provide

uncertainty in that sense and there is a need I think to introduce more generic controls, albeit at a higher standard.

The Hon. RICK COLLESS: Do you have any opinion on what sort of structural changes should be made to buildings in those high-risk zones?

Mr SHEEHAN: No I do not, except in relation to the control of native vegetation and areas of course distanced away, cleared areas.

The Hon. RICK COLLESS: That is a land management issue rather than a building code issue?

Mr SHEEHAN: Which is a land management issue. In fairness, the actual changes in the structures is really meaningless if you do not apply fairly rigidly to control of vegetation.

Mr TORBAY: In your submission you raised issues about market value considerations arising from bushfire management and said, "that there is also evidence that the incidence of bushfire can have a marked effect on the value of property in certain areas." Is it possible that you could bring that evidence to the Committee?

Mr SHEEHAN: I will take that on notice, if I could. I certainly did raise that in paragraph 5 of page 2 of our submission. Of course, we have a submission committee that assisted in the preparation of this and we were advised that there is evidence in the marketplace of an understanding of the fire propensity and it is reflecting into the value of properties. I certainly can take that on notice and provide an answer in the time frame of the Committee.

Mr TORBAY: Did you consider the regional aspects as well?

Mr SHEEHAN: Primarily based on the south-west and the Blue Mountains.

The Hon. JOHN TINGLE: In paragraph 3 on page 2 you say that the institute is of the view that there is a need for development of clear guidelines and environmental instruments and building regulation on a statewide basis. Are you suggesting that we should be developing a third item in addition to the BCA and the Australian standard [AS] or something to bring them together or replace them? What exactly do you have in mind when you are talking about guidelines? It seems to me that we have two sets of guidelines with the BCA and the AS, which you are concerned that councils are not always observing. So, do we discard those and start with something else or do we bring it all into one package?

Mr SHEEHAN: No, I am not talking about discarding them at all. In fact, the very opposite. The BCA I am particularly talking about applies on a statewide basis because, as you know, there is a section that specifically applies to New South Wales. It appears that councils in themselves have their own documents and sometimes those documents are embodied in control plans and council policies. One council of which I am aware has some roneoed sheets, which I am at a loss to understand what authority lies behind them except that it is provided to you by the building section of the council. I am told that that is council's policy in relation to certain requirements in respect of building.

From our members' perspective it is very difficult when you are doing a feasibility report for, say, a proposed subdivision when you are talking about trying to find out just what the amount of the yield may be per blocks, what impact that particular document is going to have upon your feasibility study. So, coming back to your central question, it appears that you already have a document now, which is a statewide basis document. That one should be enhanced, altered or amended to reflect whatever these variations are because it is clear that there is something in the BCA particularly, and I suppose probably the Australian standard is the more general basis, which does not reflect what local standards are.

In fairness, we are really talking about the Blue Mountains, the south-west and the South Coast primarily. We are probably only talking about maybe five local government areas. It cannot be very hard to get those five local government areas together and ask, "All right, why are you varying

from the BCA?" "Well, these are the reasons" and those things can obviously be incorporated in the BCA.

The Hon. RICK COLLESS: What about the North Coast?

Mr SHEEHAN: On the North Coast. I add that also.

The Hon. JOHN TINGLE: It seems to me that we might have too many variables already when you have local government areas each with its own specific codes. Is it possible to bring them into one code or, if we have to have them varied for different local government areas and different fire zones, are we ever going to get uniformity?

Mr SHEEHAN: There are two answers to that.

The Hon. TONY KELLY: It is called Plan First. Are you aware of that?

Mr SHEEHAN: Yes, I was going to mention that.

The Hon. TONY KELLY: Have you made submissions on that?

Mr SHEEHAN: We have, yes, a very detailed submission.

The Hon. TONY KELLY: My understanding of Plan First is that it will do just that; it will have a regional planning aspect that will oversit with the councils' local environmental plans, development consent plans and all their other plans.

Mr SHEEHAN: There are two attractions to that. I am not suggesting you put another layer in. In fact, perish the thought! The Building Code of Australia obviously needs some adjustments. If what we are seeing coming out of the local government area is that there are some shortfalls or a need for a finer grain in the way in which that is put together, that should be done, and that maintains a statewide basis. Equally, at the moment we have a plethora of documents in all of these local government councils ostensibly on the basis that "our requirements are different from the next council". That is a little hard to justify when you are talking about councils with really imaginary boundaries in terms of fire.

The Hon. JOHN TINGLE: Can I ask whether because of those variances it is difficult to know which one will prevail in the consent?

Mr SHEEHAN: Exactly. So, as we said, obviously Planning New South Wales would be the way to go and obviously a very simplified system would be a new State environmental planning policy which deals with just those issues and, of course, that was foreshadowed in some respects in Plan First.

Mr E. T. PAGE: In the second last paragraph of your letter you point out that the very factors that make a property attractive and valuable are very often the factors that make a property more vulnerable to fire problems. You indicate perhaps you need to be asked a question on this. What can you tell us further that is not in the letter?

Mr SHEEHAN: Well, I have taken on notice the question about market values. Yes, you are quite right. There is a paradox. People who are selecting properties that are in, say, peri-urban areas around Sydney are moving there because it has a significant amount of natural vegetation cover. They are moving in perhaps because they like an area where it is in a valley or something like that, areas which, obviously from the point of view of fire propensity, are not desirable areas to be in. So, it is a paradox in terms of the marketplace, but the members of our committee indicated that there was evidence that people now getting concerned about the propensity of fire and looking at different parcels of land. "How more at risk am I going to be with the block A as against block C?" So, you are seeing a greater understanding from people in the marketplace as to the likelihood of being burnt out by a fire, and that is being reflected obviously in prices being paid.

Mr E. T. PAGE: But your letter says that the Committee may be of a mind to seek further information. You have not given us much further information.

Mr SHEEHAN: Well, I have taken it on notice that I will provide you with this information in relation to market values.

Mr E. T. PAGE: I assumed that because you included that response in your letter you would have had that information now.

Mr SHEEHAN: No.

(The witnesses withdrew)

IVAN JAMES DONALDSON, Executive Director, Australian Building Codes Board, 40 Allara Street, Canberra, sworn and examined:

CHAIR: In what capacity do you appear before the Committee?

Mr DONALDSON: I am the Executive Director of the Australian Building Codes Board. That is the body in Australia that is responsible for maintaining and producing the building code of Australia.

CHAIR: You have received a copy of the Committee's terms of reference and also copies of the Legislative Assembly's Standing Orders Nos 332, 333 and 334 that relate to the examination of witnesses?

Mr DONALDSON: Yes.

CHAIR: Did you receive a summons issued under my hand to attend before this Committee?

Mr DONALDSON: Yes I did.

CHAIR: Would you care to make an opening statement?

Mr DONALDSON: I would like to make two points. First of all, I would like to make some opening comments and I would like also to draw attention to a supplementary piece of evidence that I wanted to table this morning. I have had the secretary copy that. I am doing this on behalf of the Australasian Fire Authorities Council but also in my capacity as a member of a committee, which is putting together a bid for a major bushfire research project to the Commonwealth Government. It is headed "Involvement of the Australasian Fire Authorities Council [AFAC] in proposed Bushfire Co-operative Research Centre". I will refer to that in my remarks. The reason I wanted to bring that here today is that I was asked by the chairman of AFAC yesterday at our committee meeting to do that. He will be following that up formally and writing to the Committee. The initiative that is being taken by AFAC, in collaboration with a whole range of other agencies, including those in New South Wales, is about responding to the need for a national program of research in the area of bushfire protection for both buildings, people and the environment generally.

To return to the submission that I lodged formally earlier, I wish to make a couple of points because it was a brief submission. I know you have or will receive documentation from the New South Wales administration and I am not a New South Wales public servant. In fact, I am in a rather unusual situation. I am a servant of nine Ministers and sometimes I find myself in State jurisdictions, but that is where I fit into the arrangements. The Australian Building Codes Board is a Commonwealth-State funded body and it is responsible for the Building Code of Australia [BCA]. In my submission I explained the role of regulation in respect to its effect on the construction of buildings in bushfire prone areas, to give you a broad perspective of what that means currently and to emphasise the need from our perspective to see a holistic and national approach to solving bushfire issues. Things like national co-ordination, information sharing, co-operation between agencies are all keys, in our view, to an effective and comprehensive government and community response to the bushfire threat.

I draw attention to the statements made in public by the Commonwealth Minister for Science, the Hon. Peter McGauran, MP. He has indicated an intention to look very closely at a competitive bid that has been put forward and details in the submission I brought today to look at a national approach to research in this area because it is our view and the view of many others in this field that if we work together more effectively we can deliver in time better outcomes to the community in terms of safety and appropriate relationship between people and the environment. That is one thing. Secondly, I need to put the building code into some context, and the submission tried to do that by pointing out that it is a necessary element but it is by no means sufficient that this area requires being attacked in respect of a whole range of the areas, such as planning, land development, local council, fire brigade response and a whole range of things that go beyond the issue of just regulations, and when it comes to the building code, we are in the business of dealing with new building work.

Although it is important to know that something like 5,000 houses are probably affected nationally by the code provisions, that accumulates over time, but we do not regulate the existing building environment. That is an important distinction to make. Building regulations generally in principle are not retrospectively applied, so we are talking about new building construction—houses in this particular case primarily—and we are talking about the regulations only applying in what is called bushfire designated areas, and that is essentially an administrative matter for the individual jurisdictions. With those remarks I am available for any questions that the Committee might like to ask.

The Hon. TONY KELLY: You indicated that a performance-based BCA was released in 1996. Can you inform the Committee how this has been received by the building industry?

Mr DONALDSON: Two major reforms have occurred in building regulations in the last 10 years. One was a commitment by all the governments to create a national building code and the second was the introduction of the privatisation of the certification process. The performance-based building code was introduced in 1996 and has been operating for the last five or six years. It has been an unqualified success in terms of its impact on costs and its capacity to be more effective in focusing appropriate technology and innovation to building solutions. That is more so in the commercial field than it would be in relation to housing. Work by the CSIRO and KPMG in the recent past looking at evaluating where we got to after five years suggests cost savings at the larger end of the market of between 1 per cent and 6 per cent of capital cost of buildings in this country. From the point of view of our objectives, which were about cost effective relevant regulations, I think the introduction of the performance has made a significant contribution to that. It is consistent with trends around the world.

Australia is perhaps not one of the original countries to commit to this approach to regulation and our approach was not to throw the baby out with the bathwater. The building code itself still has prescriptive requirements if one wishes to follow them, so there is a recipe that says, "If you follow these rules you will achieve the performance level that we have identified." But it also provides the opportunity for those with new technology and innovative design to come up with the same solution and the same outcome.

In the area of bushfires, we have a very clear set of objectives and performance requirements. They are unusual in the building code context because they do not just deal with life safety. Primarily the building code is about life safety but in this particular area life safety and property protection are identified in the objectives that are relevant to the construction provisions to be of value.

Mr E. T. PAGE: In the formation of the building code the New Zealand Government was involved. Is it still involved?

Mr DONALDSON: Absolutely, yes. We are very pleased to have the co-operation and collaboration of our colleagues across the Tasman. They sit on some of our committees. In fact, the chairman of our organisation and I were in New Zealand only in the last month talking with them about collaboration and research because a lot of the experiences they have there, perhaps not in the bushfire area but in others, suggests structural technology that is of interest to us, so we do continue to work with them.

Mr E. T. PAGE: You do not say that in your submission.

Mr DONALDSON: Probably not, because bushfires is not a New Zealand matter. In New Zealand it is a little wetter and it does not face the same sorts of threats that we have in Australia.

Mr E. T. PAGE: You gave a definition of the Australian Building Codes Board?

Mr DONALDSON: Yes.

Mr E. T. PAGE: And you say it is an agreement signed by Commonwealth, State and Territory Ministers.

Mr DONALDSON: Yes.

Mr E. T. PAGE: That is not to do with bushfires. It is an historic fact.

Mr DONALDSON: Yes.

Mr E. T. PAGE: So we are putting New Zealand in there?

Mr DONALDSON: No, they are not members of the board and they are not signatories to the intergovernment agreement. They are members of technical committees and support us in that way.

Mr E. T. PAGE: You say that the building code does not cover older buildings. Suppose some government decided that because of the loss of built assets during bushfires there was some requirement for certain existing buildings to be brought up to a certain standard. Would the building code be the document to cover that?

Mr DONALDSON: I have two things to say. First of all, to clarify what I said. I said—and I hope the transcript shows—that the building code applies to new building work. New building work is new buildings but it is also the refurbishment of existing buildings. Second, I would be very doubtful that the retrospective application of regulation, which does not come without a cost, would be an appropriate decision. Certainly, it would not be the advice of the Australian Building Codes Board to governments. It should be kept in mind that about 40 per cent of activity is the subject of the building code every year but the building environment is about $800 billion across the country. The concept of taking the requirements that reflect contemporary needs and extending beyond new building work, to me would have significant cost implications and would be an issue governments would look closely at before they took that sort of line.

Mr E. T. PAGE: To some extent you would be at odds with the Australian Property Institute?

Mr DONALDSON: I do not know what they had to say but I would be interested to read the transcript.

Mr E. T. PAGE: They were concerned about the fact that councils were putting on extra requirements for buildings in bushfire areas over and above the BCA.

Mr DONALDSON: In this State that is appropriate. It is consistent with the legislation. It is not the case elsewhere in the country. The building code takes precedence elsewhere and there is State level legislation that designates bushfire prone areas. That is not the case in New South Wales, as I understand it, but I am not an expert in the area.

The Hon. RICK COLLESS: What building characteristics will improve the fire resistance of a building?

Mr DONALDSON: Do mind if I refer to my notes to give a comprehensive response? Immediately, the first thing is the treatment of windows and their vulnerability.

The Hon. RICK COLLESS: To shattering?

Mr DONALDSON: Yes, and the need for screening. That is a good example of it, but a whole range of elements need to be addressed—and are, through the building code. I would like to give the Committee the best advice I can. I believe this document has been tabled. I refer to Australian Standard 3959 of 1999. I did not submit this but it has been made available to the Committee at some point, I believe. The relevance of AS3959 of 1999, as amended, is that it is the construction standard that we reference into the building code to give us the technical detail to advise people in a bushfire prone area what they have to do to help them.

There are three things: the windows, the gutters and the screening of any underfloor spaces, so that you are dealing with the primary threat, which is ember spread and its intrusion into the building fabric. That is the key thing in terms of priorities. Other things can be done, including the nature of the materials that are used—and the standard addresses that—but if you are looking at

protecting against ember attack, radiant heat and other things, you need a combination of technical provisions to get a holistic response, but they are the three things I would identify.

The Hon. RICK COLLESS: Things like eaves and verandahs would be potentially very dangerous in a fire-prone area?

Mr DONALDSON: Yes, they are, and there is advice around that would suggest how they can be dealt with to minimise the risk.

The Hon. RICK COLLESS: A lot of work has been done on buildings like Parliament House with the internal installation of fire sprinklers everywhere but has there been any thought been given to the provision of external fire sprinklers and emergency watering systems on buildings in high fire-prone areas?

Mr DONALDSON: Yes, water is a key to the protection of a structure in a bushfire environment. One has to bear in mind that often buildings in this environment do not have access to reticulated water, so that is the first issue to deal with. The advice normally is to fill the gutters with water and as a result some sort of protection will be achieved. There are jurisdictions in the United States of America that have looked at the question of removing the brigades from urban environments and replacing them with fully sprinklered buildings as an alternative. We have not done any cost-benefit studies on that and I do not know the views of the brigades about that particular matter. I understand that it is happening internationally.

The Hon. RICK COLLESS: If somebody wants to build in a high fire-prone area with lots of timber and native vegetation, would it be in their best interests at the design stage to incorporate an extra however-many litres of water storage, plus a sprinkler system and emergency pumping system and that sort of thing?

Mr DONALDSON: It is not required by the standard but you could see the commonsense of having available a ready source of water in such an environment.

The Hon. RICK COLLESS: Is it your opinion that those sorts of things should be built into the building codes in fire-prone areas?

Mr DONALDSON: I do not have a view on that because I do not know the relative cost issues associated with it. A point we tried to make in our submission is that whenever one looks at this issue building regulation is only part of the story. Why do we have building regulations anyway? There must be some other considerations happening in terms of market failure. Why can we not just educate the community to do it in an appropriate way on the relevant house? Why impose these sorts of costs? There are some good reasons why we might do that. Information dysfunction exists. For example, we know that after Ash Wednesday people in Victoria rebuilt the houses that were burnt to the ground in exactly the same way as they were. Okay so we intervene but the issue for the Committee is still a judgment about "Is this an extreme environment? Is this a medium risk or is this a lower risk environment?" Hopefully a site assessment method can be in place—and I know there is work going on in New South Wales to focus on that issue. You have got a better chance of coming up with a sensible solution that is not going to cost you the earth but will reduce or minimise the risk with which you are faced.

I do not believe that building regulations alone will eliminate risk and they never could because will we all live in concrete bunkers to achieve that? I do not think so. In one sense New South Wales has a bigger problem than other States as our urban/rural interface is much bigger and it has larger populations exposed. Why we say, "If you are going to be making recommendations is this area you should look to your colleagues in the States and Territories" is because your State was rather blessed in this last process: we did not lose anybody in New South Wales. But if one goes back to 1994 and the Ash Wednesday fires and the Hobart fires in the 1960s there is a seven to ten year cycle going on somewhere on the east coast of this country—not necessarily in New South Wales which might get away with it for the next five years, but our colleagues in Victoria might be next. They know that, and that is why they want to work with the Committee and your authorities to try to come up with solutions with which they can all work.

The Hon. JOHN TINGLE: Having listened to you and read your submission and having listened to what was said by the Australian Property Institute—

Mr DONALDSON: What did they say?

The Hon. JOHN TINGLE: I do not think I am misquoting them but basically they said when local councils were applying their own standards to development consents often they went beyond the building code and Australian standards and imposed their own standards. I note that you said, "standards for construction of buildings in bush fire-prone areas should be applied in a nationally consistent manner". Can we apply a nationally consistent manner which would also allow for the very many variations required according to local conditions in bush fire-prone areas. In other words do we need more variation of standards or can we apply a general standard that can also relate to all of these specific local problems?

Mr DONALDSON: Yes, I can give some advice. It seems to me that I have never seen a climate zone or a vegetation zone that stops and starts at an administrative border, be it local, State or Territory. The reality is that when we talk about national consistency which we do in a whole range of areas, of course we have to have regard to topographical and climatic and vegetation type issues and any national approach would have to have regard to that. The question that one has to answer in New South Wales is "Do you want that fragmented in respect of all of the councils in the State or do you want to look at it in terms of the topographical circumstances of the hinterland or the escarpment down south of Sydney?"

The Hon. JOHN TINGLE: It would seem there are problems whichever way you do it. If you make it too local perhaps you make it too contradictory?

Mr DONALDSON: On average people live in houses for seven years, and move around. The building industry is a dynamic beast that operates across all sorts of borders—local, State and Territory—and to deliver a cost-effective solution to bushfire prevention one would hope that they had some consistency and certainty in the way that they went about their business.

Mr R. H. L. SMITH: The Bega Valley council has rural concessional allotments which the planning department wants to extinguish. They have about eight different conditions on their building approvals, one of which is that the development has to be near a creek in order to have access to creek water and not just rain tanks. That is an interesting stipulation that other people do not have.

Mr DONALDSON: One of the issues that has to be faced is that this is off the back of a significant fire event in New South Wales but not that long ago we used to have floods, and I wonder about the intention of building near creeks and getting burnt down.

(The witnesses withdrew)

(Luncheon Adjournment)

BERNARD JOHN O'SULLIVAN, Manager, Government Relations, New South Wales Farmers Association, 255 Elizabeth Street, Sydney, and

ALAN JAMES BROWN, Executive Councillor, New South Wales Farmers Association, 255 Elizabeth Street, Sydney, sworn and examined:

CHAIR: Have you been issued with copies of the terms of reference and the Legislative Assembly's Standing Orders 332, 333 and 334?

Mr BROWN: We have.

CHAIR: Did you receive a summons issued under my hand to appear before the Committee?

Mr O'SULLIVAN: Yes, I did.

Mr BROWN: Yes, I did.

CHAIR: Would you like to make an opening statement?

Mr BROWN: Yes. Firstly, thank you for the opportunity to attend the Committee on this very important issue. I am a farmer and grazier with some 30 years experience. I have been farming on a property in Tarcutta in southern New South Wales, which is 30 kilometres east of Wagga Wagga. I also have a degree in Applied Science and Agriculture. I am also captain of my local bushfire brigade, the Borambola Fire Brigade.

I am the New South Wales Farmers Association representative on the Bushfire Co-ordinating Committee and the Rural Fire Service Advisory Council. I am also an Executive Councillor for the New South Wales Farmers Association, a member of the association's Rural Affairs Committee and Agricultural Chemicals Committee, and represent the association on the New South Wales Pesticides Act Implementation Committee. With me today is Mr Bernie O'Sullivan, who is the association's Manager of Government Relations.

I would like to highlight some of the key issues arising from our submission, then I would like to hand over to Bernie to provide more details. We would then be very happy to answer any questions. Firstly, I should mention that the association sought comment from its membership in relation to the terms of reference for the inquiry, and their feedback forms the basis of the association's submission.

The association received approximately 50 responses from individuals or groups. This is an excellent response, considering the short time frame in which to respond to the inquiry. These submissions from our members came from right across the State, and some were from local fire brigade captains. The New South Wales Farmers Association represents the interests of farmers in New South Wales from across all major agricultural industries and has a membership of around 13,000 business enterprises.

The association has a particular interest in ensuring that adequate bushfire management practices are implemented throughout New South Wales and that effective hazard reduction activities are undertaken by public land managers. The parliamentary inquiry into bushfires is timely, as the association holds significant concerns as to the impact on farm families and rural communities if the current lack of hazard reduction activity is not redressed.

The Christmas 2001 bushfires burnt huge areas of New South Wales and devastated many households, small businesses and primary producers. The fires brought into serious question the level of hazard reduction activities being undertaken across the State, particularly by public land managers such as the National Parks and Wildlife Service.

Primary producers, particularly those who adjoin or closely neighbour national parks, State forests or vacant Crown land, have a genuine interest in ensuring that adequate hazard reduction

activities are undertaken in these publicly managed land areas. The escape of the Narromine-Cabonne fire from the Goobang National Park, for example, devastated 18 adjoining private land-holders.

The association has grave concerns that recommendations from previous inquiries have not resulted in increased hazard reduction activities taking place to help prevent the devastation as witnessed in the recent fires. The coronial inquiry following the 1994 fires clearly showed that inadequate hazard reduction activities were principally responsible for the intensity of the uncontrollable fires. It appears that the lessons and recommendations from the 1994 fires were not heeded, contributing to the disastrous Christmas 2001 fires.

Adequately maintaining fire trails is also a key concern. Fire trails are there to provide timely access and rapid response to fire outbreaks. Existing fire trail infrastructure has significantly deteriorated in some areas, and members of the association have highlighted that blocked or inadequately maintained fire trails hampered firefighting efforts in the recent fires. Put simply, this can cost human lives and devastate homes and businesses. For example, members from Wollondilly clearly highlighted that local fire trails have not been cleared for around 12 years. There are also insufficient trails in this area, and some of these were blocked with rock and trees to prevent trespass.

To address these issues, the implementation of both hazard reduction activities and the maintenance of fire trails needs to be urgently investigated for adequacy in all publicly managed land, with particular regard to effectiveness and frequency. This needs to occur prior to the next fire season. To provide the necessary protections to land-holders and communities in close proximity to the publicly managed land, fire breaks or buffer zones need to be established inside the boundary of all Crown lands prior to the next fire season. Additionally, the association believes that no new national park should be declared until existing parks are appropriately managed with regard to bushfire prevention and hazard reduction.

The association has evidence of a proposal to lock up another half a million hectares in north-east New South Wales, creating a corridor along the Great Dividing Range. If this proposal goes ahead, it can only lead to an increased bushfire risk.

Currently, complex and bureaucratic environmental legislation is preventing effective bushfire hazard reduction activity from taking place. A streamlined process for environmental assessment for hazard reduction activity is urgently required. I will touch on this issue further when concluding. Association members also raised the valid concerns in relation to equipment issues following the fires. These are included in our submission, however I would like to mention in particular the age of the fire tankers in our local area. In my brigade our tankers include two older vehicles, one being 27 years old and the other 39 years old. They are both petrol powered. They both have petrol-powered pumps, which can be extremely dangerous to human life in high intensity fires. So, updating our tankers with modern vehicles which are appropriate to the terrain and conditions needs to happen more quickly.

However, it is important to emphasise that the provision of modern tankers should not automatically mean that a brigade does not require as many tankers. My brigade received a new CAT 1 tanker two years ago but we lost two functional tankers when we got it. We are now down to three functional RFS vehicles to look after 55 land-holdings and about 30 kilometres of the Hume Highway. In conclusion I would like to emphasise that it is time for the pendulum to swing back towards a key recognition of the need for the protection of life, livestock, property and assets to be paramount in any bushfire decision-making process over broader environmental concerns. This is not occurring at the moment and thus places our farmers, communities and firefighters in an untenable position.

Mr O'SULLIVAN: Thanks for the opportunity to talk to you today. The association's submission highlights that hazard-reduction activities have been significantly declining across the State of New South Wales. Recent figures show that the level of prescribed burning operations conducted on lands managed by the National Parks and Wildlife Service has declined by 60 per cent over the past seven years, from approximately 48,000 hectares in 1993-94 to just 20,000 hectares in 2000-01. Also, the average burning by the National Parks and Wildlife Service over the past four years is just 11,700 hectares per annum. When we compare the level of hazard reduction between the two major public land managers or agencies, it reveals a stark contrast. For instance, in 2000-01 State Forests completed almost 441,000 hectares of hazard reduction activities or 15.5 percent of its lands.

On the other hand, National Parks in the same period undertook just 40,000 hectares of hazard reduction or 0.37 per cent of the total land area it manages.

Reserve fire management plans are prepared to help the National Parks and Wildlife Service meet its fire management responsibilities and to prevent the occurrence of and minimise the damage resulting from bushfires. Considering the recent fires in Goobang National Park and the resultant devastation for adjoining land-holders, Goobang provides a particularly relevant case study for us to look at the park's fire management plans and the prior implementation of hazard reduction activities. In late 1999 the National Parks and Wildlife Service released a draft Goobang National Park fire management plan dated October 1999 for a two-month exhibition period. Although the public exhibition period for this plan closed on 31 January 2000, more than two years later the Goobang fire management plan is still to be ratified, finalised, by the National Parks and Wildlife Service.

Additionally, figures available on the New South Wales National Parks and Wildlife Service web site indicate that of the fire management plans for the parks and reserves managed by it, only five final plans are in place, 13 draft plans are being progressed and no draft plans are currently on public exhibition. So, considering there are around 200 national parks and reserves, conservatively, where are the remaining plans? Inability to finalise fire management plans has the real potential to delay essential hazard-reduction and fuel management programs being implemented. Therefore, the damage potential from bushfires increases, and this is a major concern to New South Wales Farmers and all primary producers, particularly those who border publicly managed land. Therefore, the solution to this is that reserve fire management plans for publicly managed land should be ratified and made operational within three months following an adequate process of public consultation with the local community.

Farming families most at risk from damage from fire at Goobang National Park are those farming on the eastern and southern park boundaries. Accordingly, the National Parks and Wildlife Service has designated these boundaries as asset protection zones and has established strategic wildfire control zones in these areas to help suppression activities and to stop fires moving out of those areas. A principal strategy for protecting life and property is fuel reduction in those strategic control areas. The fire management plan for Goobang at the moment is that hazard reduction burning in those strategic control zone areas of that park should occur every 10 to 12 years. Ironically, the plan also indicates that there are only two known records of prescribed burns for Goobang National Park, those being in 1978 and 1982. Therefore, when you look at the plan it appears that it has been 20 years or longer since most of the land area of Goobang National Park has been involved in prescribed burning operations. This is quite alarming for members of New South Wales Farmers.

The apparent lack of hazard reduction activity raises doubts about whether effective fuel management programs are being implemented for Goobang, and it also begs the question are fuel loads being managed appropriately in all our other national parks? What does this mean for fuel accumulation over long periods, and the risk to communities and farmers? As indicated in our submission, if left undisturbed for 20 years an accumulated fuel load of about 30 tonnes per hectare would not at all be unusual. However, given severe fire weather conditions, a load of half that amount—15 tonnes per hectare—would produce a fire of such intensity that it would be difficult to control or be uncontrollable. In an open dry forest in Australia, for instance, with 15 tonnes per hectare, it takes only 7.2 years to reach 15 tonnes per hectare and then, hence, a potentially uncontrollable fire, and it takes only 3½ years in a dense, dry forest.

If prescribed burning operations have not occurred in Goobang National Park for 20 years, this seriously affects our ability to control fires in any weather conditions, whether they are extremely adverse or not. Therefore, I can only reiterate Alan's earlier point that hazard reduction and fuel management activities, together with the proper maintenance of fire trails, need to be urgently investigated for their adequacy in all publicly managed land prior to the next fire season. You know we have 97 bushfire management committees across the State and they are required to have in place bushfire risk management plans, which basically set out a plan for the reduction of bushfire hazards in the area and, hopefully, make sure that programs will be put in place to manage those hazards.

The bushfire risk management plan should be prepared within 12 months after the constitution of the management committee. When the Christmas 2001 fires occurred 30 per cent of the State's bushfire risk management plans still had not been approved. So, firstly, it is essential that those

bushfire risk management plans are finalised and approved as a matter of urgency. Even though hazard reduction works are listed within risk management plans, that does not necessarily guarantee that the works are being implemented in a timely fashion.

Amendments to the Rural Fires Act 1997: several amendments to this Act are required, the association believes, to remove exemptions for public land managers which inhibit the effective and timely implementation of hazard reduction activities that take place on publicly managed land. The requirement to manage fuel loads should be no different for managers of public land than they currently are for private land-holders. The State of New South Wales needs to be assured that there is equivalent accountability and scrutiny of public land managers. Therefore, section 73 of the Rural Fires Act needs to be amended to allow the Rural Fire Service commissioner to either enforce or actually carry out hazard reduction activities on publicly managed land where these activities have not been completed within the specified time. That right currently exists for making sure that hazard reduction activities occur on private land. Accordingly, section 76 and 80 of the Rural Fires Act also need to be amended to require adjoining managers of adjoining public land to repair or restore dividing fences at their expense if damaged by fire—that is, if private land-holders have been proactive, have cleared their side of the fence and public land managers have not acted upon the issue of a notice.

Environmental assessment for hazard reduction: The New South Wales Farmers Association has long advocated that complex and bureaucratic environmental legislation is preventing effective bushfire hazard reduction fuel management strategies from occurring. In 1999 the association's concerns on this issue prompted the establishment of an interdepartmental committee [IDC] on environmental assessment of bushfire hazard reduction. In late 2001—over two years later—the IDC finalised its report to the Minister for the Environment. The report clearly highlights that the complexity of a myriad of environmental legislation is acting as a significant disincentive to effective hazard reduction activities taking place. Considering this conclusion, it is quite extraordinary that the report then goes to painstaking lengths to highlight that environmental legislative requirements are a perceived impediment rather than an actual impediment to the implementation of effective hazard reduction and fuel management activities.

Over 20 pieces of legislation have the potential to influence environmental assessment for bushfire hazard reduction. However, the most critical pieces of environmental legislation include the Environmental Planning and Assessment Act 1979, the Native Vegetation Conservation Act 1997, the Threatened Species Conservation Act 1995 and the National Parks and Wildlife Act 1974. Private land-holders acknowledge responsibility for managing the land in such a way that reduces the risk of bushfires, including undertaking routine hazard reduction activities. However, land-holders continue to highlight to New South Wales Farmers the disincentives and complexity with the current environmental assessment regime. For example, if a planned development or activity will have an impact on a threatened species a species impact statement usually must be prepared. If so, the director-general of the National Parks and Wildlife Service must agree to the development approval. In some cases the Minister for the Environment will also need to be consulted.

This is a very complex web of processes to get development consent to then allow farmers to undertake these activities on their land. So onerous environmental requirements are a prime reason why we are seeing inadequate and declining levels of hazard reduction activities in our publicly managed land. As a direct consequence of this the risks to adjoining private land-holders are significantly increased. Additionally, the Native Vegetation Conservation Act, for example, makes it almost impossible for farmers to undertake many routine agricultural practices such as the thinning of regrowth and the clearing of shrubby understorey in timbered country. This obviously presents a greater risk in the event of a fire. The cost and time of environmental assessments for hazard reduction proposals are also a disincentive to private land-holders undertaking hazard reduction. This fact was clearly acknowledged in the IDC report. Therefore, to assist both private and public land managers the New South Wales Government should immediately implement a streamlined process for environmental assessment for hazard reduction activities that is simple and cost free for individual land-holders. We have been working with the authorities to put something like that in place.

Equipment and training: The association's members have also raised pertinent issues in relation to equipment and training. I think these have been adequately highlighted in our submission for your perusal. In conclusion, I reiterate that the continued lack of hazard reduction and fuel

management activities has potentially devastating ramifications for many farm families, communities and, importantly, firefighters. Our bushfire management practices need to much better protect human life, livestock, property and assets.

Mr R. H. L. SMITH: Before lunch Dr Ross Bradstock from the National Parks and Wildlife Service gave evidence. I do not want to precis what he said about hazard reduction burning but I would appreciate it if New South Wales Farmers could read the transcript of this meeting and make a written report in response to what he said about hazard reduction burning. I think it would enlighten the Committee no end on the practical side of hazard reduction burning for Australian conditions as compared with the theoretical approach, and world experts backing him up.

Mr O'SULLIVAN: We would be happy to do that.

Mr R. H. L. SMITH: You have basically answered this question but all the other people coming before the Committee have been asked whether the environmental legislation that has been passed by the New South Wales Parliament—you mentioned some of the Acts such as the Environmental Protection and Assessment Act, the endangered species Act the native vegetation Act—have a slowing affect or an excluding effect on hazard reduction and are of concern to New South Wales Farmers in getting a program going and making sure that prior to the fire season sufficient hazard reduction burns are done, whether it be on public land or private land.

Mr BROWN: There is certainly a perception in the rural community—I do not just include farmers—there is a perception as well as a reality, that there is a bureaucratic tangle there to be able to do some hazard reduction burning. We have been advocating through the Rural Fire Service that they make a streamlined process available but make sure people know what the process is so that they can virtually take one step to go ahead with the hazard reduction.

Mr E. T. PAGE: It is a bit naive to believe that it is going to be cost free.

Mr BROWN: Cost neutral I think was the term used.

Mr E. T. PAGE: No, cost free he said.

Mr O'SULLIVAN: I did say cost free. We have been working with the authorities and our understanding to date is that they would also see the value in not having any further disincentives in the system and that a cost-free regime could be the way to go.

Mr E. T. PAGE: But there is no process that is cost free. If you write a note there is a cost. I am just suggesting that the terminology should be realistic.

Mr O'SULLIVAN: I think I said cost free to individual land-holders.

Mr E. T. PAGE: So the process then would not include them, is that what you are saying?

Mr O'SULLIVAN: What I said was that a streamlined environmental process should be implemented and it should be simple and cost free to individual land-holders. Therefore individual land-holders would not incur a cost for, for instance, submitting a development application.

Mr E. T. PAGE: So the land-holder could not go to a meeting? It is a stupid statement to make. You cannot have a cost-free process.

Mr BROWN: I would not have thought it was central to what we were trying to do.

Mr E. T. PAGE: If you are going to give evidence it should be realistic and mean something.

Mr BROWN: He did not actually say it was cost free; he said it should be cost free to the individual land-holder.

CHAIR: I think we have probably developed that one far enough for the moment, Ernie.

Mr O'SULLIVAN: I do not see a problem with a streamlined process being cost free to individual land-holders. It has nothing to do with attending meetings.

Mr E. T. PAGE: It means they will not be involved. Decisions would be made without the involvement of—

Mr O'SULLIVAN: Mr Chairman, there is a bit of confusion here that I would like to clarify. Generally we are talking about a farmer, a private land-holder or even a public land manager. When they want to undertake hazard reduction activities it is just too hard at the moment. It is too costly and too time consuming. Basically, when these land-holders want to be proactive they get in touch with the local council and ask what needs to happen. At the moment it is very unclear.

Mr E. T. PAGE: That costs something.

Mr O'SULLIVAN: It certainly costs something at the moment.

CHAIR: I think we might have developed that point as far as we need to.

Mr R. H. L. SMITH: You say in relation to public land that if the person managing the public land does not do the clearing the land-holder does and you should pay half of the fence. It does not matter whether it involves a fire or anything else, if you are going to be a good neighbour, as all other land-holders do, you supply half the fence and the other person supplies half. You have gone one step but I do not see that the principle does not apply anyway.

Mr BROWN: It is probably better to grab one swallow than take the lot at once.

Mr O'SULLIVAN: We would hope that in any situation there is goodwill on the side of both parties. But having it actually in legislation when a fence is damaged just gives more assurance to an individual land-holder who is proactive, has cleared their side. They are more comfortable then if they issue a notice. If the public land manager does not agree to clear their side that gives a backup for the private land-holder.

Mr TORBAY: In respect of fuel loads management and improvements that should occur there, most people agree that there can be better things there are as far as reporting, better understanding of the fuel loads and their impacts and what could be done about it. You say that the processes should be streamlined particularly in respect of fuel management. I would be interested in some examples that you could put before the Committee so that perceptions and reality are separated and we can look at corrective action in that regard. There are a lot of airy-fairy comments about fuel loads and I would be interested in some factual things that we could make constructive recommendations to government on.

Mr BROWN: That is something we should best take away and come back with a written response to.

Mr O'SULLIVAN: One of the key points we tried to raise was that a significant impediment at the moment, as we said before, is the complexity of all the different environmental legislative requirements. Over 20 Acts have the ability to impact on environmental assessment for bushfire hazard reduction. A key recommendation from New South Wales Farmers would be that we make it much simpler for land-holders and public land managers to get through the environmental red tape and to continue ensuring that we preserve our environment but also make sure that we are doing effective hazard reduction and fuel management strategies in a timely way.

One way to do that would be—and we have been discussing this with the authorities and the RFS—to put in place a one-stop shop that would be managed at a local level by the local authority. The farmers would approach it and, if the hazard reduction activity they wanted to undertake complied with the local bushfire risk management plan and with the code of practice that the RFS and IDC report proposes—pending its being not too detailed—that activity would not be subject to part 5 of the EPA, which is a big stumbling block. It would be afforded a streamlined process and the activity would go ahead. That is a key thing that can happen to improve the situation.

When we talk about hazard reduction and managing fuel loads, we are talking in the same breath about the need to maintain fire trails better. These are critical for access into and out of publicly managed land when fires occur. Alan mentioned that the local brigade had trouble getting out of a fire because in some areas fire trails were shut to keep out trespassers. That objective should not replace the need to allow rapid access and rapid response during a fire.

The Hon. RICK COLLESS: I would like to explore a little further the impact of legislation such as the Native Vegetation Conservation Act. If the authorities served you a notice on your property under section 66 and it was in contravention of the native vegetation Act, which Act would take precedence?

Mr BROWN: To be honest, I am not familiar with that situation. If you do not mind, I will pass that question to Bernie.

Mr O'SULLIVAN: That is a good question. I am not sure either off the top of my head. It is borne out in what the interdepartmental committee report says: every situation is different. Page 13 of our submission contains a few quotes from the IDC report, which basically says that there is a diverse array of legislation that is administered by a number of different government agencies, a lack of clarity surrounding the assessment process and the applicable legislation and difficulty for landowners in knowing which agency is responsible.

The Hon. RICK COLLESS: It is fair to say that, if you guys are confused, the general public must be totally confused about the contradiction between the various pieces of legislation.

Mr BROWN: The problem then becomes that if people do not have a clue they do not know where to start.

The Hon. RICK COLLESS: How wide do you think fire breaks inside public land boundaries should be? Surely you would not regard them as being a panacea to the problem of wildfires escaping those areas.

Mr BROWN: Absolutely not—to answer your second question first. We regard them as being part of the suite of things that can be done to reduce fire risk—we are obviously talking about hazard reduction, buffer zones and fire trails. There must be a range of activities to reduce the possibility of fires getting away. It is a misnomer that the fires were uncontrollable. They were if they were on a big front, but if you have the capability to move heavy equipment quickly to the source of the fire, surround the fire and ensure that it does not build up intensity, you will not have a problem. If the fire gets out of control, it will be uncontrollable.

Mr O'SULLIVAN: To complement that, on page 16 of our submission we state:

> … in heavily timbered country, fire breaks should be at least as wide as the height of trees on the boundary.

That is an example.

The Hon. RICK COLLESS: What about a minimum requirement? It would be reasonable to expect that during a bushfire tankers would be going to the fire front and other tankers would be returning from the fire front to refuel so you would need to have at least enough room for two tankers to pass comfortably.

Mr BROWN: Absolutely. The salient point is that you need localised solutions. If you go to Pilliga and ask the local fire captain how wide a break needs to be, he will soon tell you . I can tell you what I need in my area, and it is nowhere near the area that you would need at Bellingen, for example. You need a localised solution.

The Hon. JOHN TINGLE: Mr Brown, we have heard a lot about hazard reduction—in fact, it is probably the most discussed topic since this inquiry began. There appears to be a common perception that the amount of hazard reduction carried out in national parks is not as great as people like to think it should be. I have put this question at two other hearings, and I was told that they have done so many hectares of hazard reduction in the southern directorate—22,000 hectares over the past

four years out of a total area of 1.6 million hectares. I am not in a position to say whether that is adequate, but I would like to hear your comments.

People's concern about the level of hazard reduction in national parks is linked to the perception—I stress that it is a perception—that fires start in national parks and get away onto private land. This morning the Director-General of National Parks and Wildlife, Mr Gilligan, told us that over the Christmas period between December and January 141 fires started in national parks of which only 9 per cent got away. Is there disagreement between how the National Parks and Wildlife Service believes fires start and the way in which land-holders and rural fire service officers perceive the situation?

Mr BROWN: My perception is to compare State Forests with National Parks as land managers. We note in our submission that State Forests does some sort of hazard reduction work on about 15 per cent of its land every year. We should keep in mind that many national parks are old State Forests areas. By comparison, National Parks does hazard reduction work on about 0.37 per cent of its land. It is pretty obvious that it is not doing what State Forests is doing. It is true that State Forests has a different aim, but it is a land manager—its aim is to manage the land it has under its control in order to maintain an asset, which is saw logs in this case.

We do not see why National Parks should not approach the management of its land in the same way. It is managing an asset for the public good and, even though it does not have a specific aim, such as maintaining saw logs, it should have the basic tenet of managing the land for public good. It is obviously not doing that. We do not view hazard reduction as the only solution; it is part of a range of things that must be done but which are not being done. It is one of the things that we think can be done in the short term to address the problem.

The Hon. JOHN TINGLE: There has been a lot of talk today about things not being a panacea. You are saying that there is no single cure but that all the elements of the cure must be done thoroughly and properly before it can come together.

Mr BROWN: Yes. But if we have conditions like we had during Christmas 2001, we will have fires. There is no two ways about it. We will then have to fall back on quality equipment—there is nothing else we can do. Compare the way in which State Forests acts—I have worked with it quite a few times on bad fires—with the way in which National Parks acts. State Forests' aim is to get heavy equipment to the source of the fire as quickly as possible—and it operates in some pretty near impossible country. By comparison, National Parks rips out trails—let alone does not maintain them—that allow this sort of rapid access. The problem we have always faced in my area—it is basically farming land—is that lightning strikes almost invariably hit the interspersed ridges, which is where the bad fires occur. They are bad because of access problems; they are not bad fires per se. Once you get there you can control them quite quickly, but getting there can take some time.

The Hon. JOHN TINGLE: To follow-up, this morning Mr Gilligan discussed the question of gates on fire trails. He said the positive advantages of those gates far outweigh any negative effects because they stop the build-up of rubbish and they stop arsonists getting in. You mentioned that you are the captain of your bush fire brigade.

Mr BROWN: Yes.

The Hon. JOHN TINGLE: Do you have as speedy access through those gates as you would like? Do you have a common key system?

Mr BROWN: I usually carry a fairly big set of bolt cutters, which opens some pretty big gates. If I cannot open a gate, I will open a fence. I have no hesitation about doing that. If I am in a hurry, I do not worry about cutting a fence: I will just open it.

Mr E. T. PAGE: You mentioned the Goobang National Park, which I gather is covered by three bushfire management committees: Parkes, Narromine and Cabonne. These give local groups a voice in determining priorities. Do you agree with the system of allowing local groups to have some input?

Mr BROWN: Absolutely.

Mr E. T. PAGE: Can you tell the Committee the names of your nominated representatives on each of those committees, how many meetings they have attended and what input they have had?

Mr BROWN: I do not have the answer.

Mr O'SULLIVAN: We will take that question on notice and supply that information to you.

Mr E. T. PAGE: Is it true that, despite repeated invitations to sit on these committees, no representative of your organisation has attended any bushfire management committee meeting in Cabonne or Narromine in the past three years?

Mr BROWN: I will take the question on notice as well.

Mr TORBAY: In paragraph 4.1.1 on page 17 of your submission you comment about communication between agencies—you have listed three, but I assume that you are talking about agencies generally—and basically say that communication should be upgraded. Most of the witnesses who have appeared before this Committee have said in evidence that co-operation, co-ordination and working between the various agencies has improved substantially—although there is room for more improvement. I am interested in your comments, as you go on to raise some issues regarding volunteers and others. Can you give any specific examples that may assist the Committee in forming recommendations about the co-operation and co-ordination of those agencies?

Mr O'SULLIVAN: The association also supports the tenet that communication has improved significantly in particular areas since the 1994 fires. Agencies are working with each other and with land-holders better. We can always improve communication. An example comes to mind from the recent fires. When the fire approached a town—I think it was a town south of Sydney, perhaps Camden—the locals rushed to the local high school only to find the gates locked and everything shut. During a time of disaster the locals should know where to go and be confident that a place of refuge will be open. Our members in that area provided that example, and we can certainly look for other examples.

Mr R. H. L. SMITH: With regard to buffer zones, are you aware that Bega Valley Shire Council was under administration—it has returned to democracy in recent times—and that the administrator's term was extended for some 12 months or thereabouts for the sole purpose of putting in a new local environmental plan [LEP]? One of the most controversial parts of that new LEP is that the buffer zone is on the freehold rather than on the national park side. There is a precedent that 400 metres of freehold land are quarantined from any development. Are you aware of that?

Mr O'SULLIVAN: Probably our conservation staff I would imagine would be aware of that fact.

Mr R. H. L. SMITH: In your submission you say that the RFS vehicles be made more practical for the work required of them. Could you expand on that?

Mr BROWN: It certainly was not a major part of it, but there are some areas, such as in sandy country, where conventional dual wheel vehicles are not particularly useful. The example given to us was that super single tires in those areas would be more suitable.

The Hon. TONY KELLY: Are you sure of that?

Mr BROWN: No I am not. I am quoting to you what was said to us.

The Hon. TONY KELLY: Recently a farmer in the irrigation area told me he had two unladen trucks, two semis, and he was talking about the super singles in particular, and he bogged them both in a boggy paddock. The semi with dual wheels just drove out, but he had to get a tractor to pull out the one with super singles. It actually became bogged more quickly.

Mr BROWN: As I said, I was quoting what was written in one of the responses. But it comes back to that local solutions thing again. I am sure if you went into the area you would find someone who knew what was best for that area. In my area there are tankers that have built up in a much more suitable fashion for the type of fire fighting we do. We have problems with the tanker we have now because you cannot walk around the tank, around the vehicle, on the back. You are on one side or the other or you have to walk around the back of the pump, which is a dangerous business. Little things like that. But it comes back to localised solutions. It is certainly not the centrepoint of what we need. We just need a sensible design for the area the vehicle is going into.

The main problem that comes out again and again is the number of vehicles. As I said to you, in my brigade I am down to three effective RFS vehicles for 55 land-holders. Sure, that is enough; I had four up until two years ago. That is enough for day-to-day one-off incidents, but as happens periodically in our area, around every four or five years you get a severe storm event across the area. We rely heavily on vehicles from other brigades concentrating on a single or maybe two outbreaks. But if you get three or four outbreaks in each brigade, you are on your own. And if it is a bad day, I have got potentially 55 houses to look after with three vehicles. They are pretty thinly spread.

One of the consequences of that is, and as happened last Christmas, there was no way I was allowing any of my vehicles to leave the area in the summer time to go to Sydney to help because if you take the best one out you are then back to the next one, 20 years old, and the one after that is 25 years old and petrol powered. I am back to two quality vehicles, both fairly old, to manage the whole area. So, there is just enough out there and that is all.

Mr R. H. L. SMITH: Is this the way they are allocated?

Mr BROWN: Absolutely.

Mr R. H. L. SMITH: It used to be an unfair system where if the council had sufficient moneys it could virtually get any machine it wanted, and then that system was adjusted. Is it still not sufficiently equal as far as the risks are concerned?

Mr BROWN: I am not an expert on allocation, but it is certainly allocated according to where risk is greatest and obviously the risk to human asset and lives in the Blue Mountains and that area is greater because of the number of people that are there. So, certainly we are just part of a very big system. But all I am saying is that do not think there is plenty of equipment out there; there is plenty of equipment in some areas, but in my area it is only just.

The Hon. TONY KELLY: There has been a dramatic change over the last five years.

Mr BROWN: Absolutely.

The Hon. TONY KELLY: But you are saying it should continue?

Mr BROWN: It should not stop. The last whisper I got is that there were eight vehicles to come into the Wagga area, which, if there is, is very good. Another five years of that sort of replacement level and we will have the thing up to date. But I saw the list not so long ago of where we are on the list and we are about nine or 10 down the list as far as replacement goes of this 1975 vehicle. So, maybe if eight come in for each year, we will get rid of that one next year, which would be great. But there is always a pecking order and where the risk is greater concentration of equipment is greater.

The Hon. RICK COLLESS: Does your bushfire brigade join National Parks or State Forests?

Mr BROWN: No.

The Hon. RICK COLLESS: How far away would they be?

Mr BROWN: The closest one would be within 10 kilometres.

The Hon. RICK COLLESS: So it is close enough to be of concern to you?

Mr BROWN: Absolutely.

The Hon. RICK COLLESS: In your role as a brigade captain do you monitor fuel levels within your brigade area on a regular basis?

Mr BROWN: To the point where do I know what is out there, absolutely. Most of it is grazing land. So there is very little you can actually do about it because there is a seasonal buildup, which you cannot expect people to reduce other than by grazing. And there is variability with weather. A year like we just had there was a fairly big buildup of fuel, but other years it just will not be so great.

The Hon. RICK COLLESS: Do you have in place a formal reporting process for monitoring those fuel levels?

Mr BROWN: No.

The Hon. RICK COLLESS: What about in the public land areas, do you know if there is any formal process there?

Mr BROWN: No, I do not know. I could find out for you if you want.

Mr E. T. PAGE: There has been what I would say substantial evidence about the weather conditions involved, terribly hot tremendous winds that went on for extended periods, and that even recent hazard reduction areas did not have any effect on the fire. Do you share this view?

Mr BROWN: That a fire on a day like that would not be controlled by hazard reduction?

Mr E. T. PAGE: Yes, not just a day; it was days on end.

Mr BROWN: Yes, certainly.

Mr E. T. PAGE: It is just that many people have said that.

Mr BROWN: Well, that is right. If you get days like we had, it does not matter what you have done. Unless you have burned it the day before, it will still burn. Honestly, I have seen places where bushfires have gone through and burnt out the country and about a week after that you get all this leaf drop because the leaves on the trees drop. If you get a day bad enough it will burn again. Obviously, it will not burn badly, but it will burn. There is no possibility that if you get a day or days like we had that you will not get the fires. The salient point is that you can reduce the impact and the numbers if there is quick action taken to cut down on the number of fires that are loose on the day like that. If that comes down to shooting arsonists as well, so be it!

CHAIR: Perhaps in light of your submission, I should alert you to something that was announced by the Deputy Premier and the Minister for Emergency Services on 10 January, which was to give the Rural Fire Service power to enter any lands to carry out hazard reduction operations required but not carried out under a bushfire plan developed by the local bushfire management committee. So, in some respects that answers one of your concerns.

Mr BROWN: It does.

CHAIR: That will be dealt with in the upcoming legislative program.

Mr BROWN: I was well aware of that through my activity with the co-ordinating committee.

CHAIR: So, many of these things have been highlighted and we certainly value your evidence as an expansion of your submission.

(The witnesses withdrew)

COLIN JOSEPH WOODWARD, Assistant Director-General Operations, Environment Protection Authority, 59 Goulburn Street, Sydney,

NIGEL LAURENCE ROUTH, Director Air Policy, Environment Protection Authority, 59 Goulburn Street, Sydney, and

CHRISTOPHER RAY EISER, Director Atmospheric Sciences, Environment Protection Authority, 59 Goulburn Street, Sydney, sworn and examined,

CHAIR: I am advised that you have each been issued with a copy of the Committee's terms of reference and also copies of the Legislative Assembly Standing Orders Nos 332, 333 and 334, is that correct?

Mr WOODWARD: That is correct.

CHAIR: In what capacity do you appear before the Committee?

Mr WOODWARD: I am appearing as Assistant Director-General of the Environment Protection Authority.

Mr ROUTH: I appear as the Director of Air Policy in the Environment Protection Authority.

Mr EISER: My title is Director of Atmospheric Science and I am appearing in that capacity at this Committee hearing.

CHAIR: Did you each receive a summons issued under my hand to attend before the Committee?

Mr WOODWARD: I did.

Mr ROUTH: I did indeed.

Mr EISER: Yes I did.

CHAIR: Mr Woodward, is it your intention to make an opening statement?

Mr WOODWARD: Yes, it is.

CHAIR: Please proceed.

Mr WOODWARD: The Environment Protection Authority [EPA] is charged with responsibility for protecting the environment from harm, and part of that responsibility relates to the control of air pollution. That is the area which leads as a link into the issue that is being discussed here in relation to hazard reduction burning because of the potential for hazard reduction burning to create smoke and air particles that can affect air quality. We do know fairly conclusively now that elevated particles in the air can have health impacts on people, they can cause respiratory problems and also premature death. Therefore, there is a range of programs the Government has in place to control and reduce air pollution. However, within that context the EPA has a limited involvement in relation to hazard reduction burning and in discharging that responsibility we have always taken account of the need for protection of safety and public and private property from bushfires and, therefore, the need for hazard reduction burning.

In fact, the EPA has a fairly limited role in relation to hazard reduction burning. The main role we have is in relation to section 133 of the Protection of the Environment Operations Act 1997, which gives the EPA the power to prohibit all burning including hazard reduction burning if predicted weather conditions are such that high pollution levels could occur. The EPA in practice often does issue no burn orders under this section of the Act. Those no burn orders generally would apply to the non-bushfire period of the year, that is the cooler months of the year. That power is not used over the summer or bushfire period of the year.

In practice what happens if the EPA is intending to use that section of the Act, the EPA, on advice from the Bureau of Meteorology, predicts where a high pollution day is likely to occur or a high pollution period that might involve a few days. We usually have in the order of about five or maybe six days warning of that occurring. At that time the EPA liaises with the Rural Fire Service about the hazard reduction burns that may have been planned for that period and through a process of liaison between the EPA and the Rural Fire Service over those few days, the Rural Fire Service will take into account that we may be issuing a notice and will focus on the strategically important hazard reduction burns that they wish to proceed with and may well postpone the less important hazard reduction burns to another date.

Those discussions continue over the next few days, as does our certainty in terms of the prediction of the weather. It may be that we start that process but then the weather forecast changes and we do not issue a no burn order, or it may be that it firms up and typically we would issue a no burn order covering a day or a number of days. That no burn order would exempt the strategically important hazard reduction burns that the Rural Fire Service has advised us of. We would issue a no burn order by placing it in the *Sydney Morning Herald* and also on the EPA web site and advise the Rural Fire Service, which then communicates that through its network as well.

To get an idea of the number of no burn orders we issue, we have appended to our submission all the no burn orders that have been issued since 1986. Of particular relevance would be last year, 2001. We issued one no burn order during 2001. That covered two days, which was the weekend of 23 and 24 June 2001. For that no burn period we exempted seven hazard reduction burns that the Rural Fire Service had requested and, indeed, there was a late one. I was rung up at nine o'clock on the Saturday night and asked if they could do another one and we gave an exemption for that one as well, so eight exemptions were issued on that particular occasion.

That is the main limit of the EPA's involvement in hazard reduction burns. Sometimes there is some confusion in relation to the regulation, which is the Control of Burning Regulation. That regulation is aimed at refuse burning in particular but it does include green waste. The control of burning regulation specifically exempts hazard reduction burns under the Rural Fires Act 1997 from that particular regulation. Any hazard reduction burning that is approved by the Rural Fire Service is not prohibited essentially under that regulation. What that regulation does is to prohibit open burning of refuse, including green waste material and incinerators but it allows for some exemptions and does provide powers to local councils and also the EPA to approve individual applications for exemptions for those. Under the regulation there are factors that the council or the EPA need to take into account in granting an exemption or an approval under that particular regulation.

Since the fires in December last year and January the EPA has been working with the Rural Fire Service to review the processes for approvals under the section 133 no burn prohibitions. Even though the EPA and the Rural Fire Service acknowledge that the present system is working quite well and it has not restricted the hazard reduction burns—it has indeed improved quite substantially since the 1994 bushfires in our experience—we were asked by the Government to consider the approval processes that are in place and to look for any further opportunities for streamlining those processes. We believe that there are opportunities for streamlining the process even further by considering the criteria that might be used for determining which hazard reduction burns are strategically important and that may still occur during a no burn period without necessarily having to go through that toing and froing of the approval process in the days leading up to a no burn order being issued. This would allow a bit more certainty for the decisions that need to be made in terms of which ones are important during the no burn periods and in our view would not diminish the need to also protect air quality, and to take that into account in the decision making as well.

In terms of concluding comments, essentially I would just like to say that the EPA has a limited role, [in relation to hazard reduction burning] which only relates to section 133 of the Act in relation to no burn orders. We believe that the current system is working well. We believe also that there is an opportunity to streamline the approval process and not to compromise the need to carry out the hazard reduction burning. Also, that can be done without compromising the air quality aspects of it as well. That is the presentation I would like to make but I am quite open to taking questions.

The Hon. RICK COLLESS: On these no burn days when the notices have been issued, how many hazard reduction burns have been prevented that were not listed over and above those that you have shown us were exempt?

Mr WOODWARD: The EPA has not actually refused any that have been put to us by the Rural Fire Service because we have had a good process of liaison with the Rural Fire Service during those few days leading up to the no burn of order being issued, so it may well be that the Rural Fire Service themselves may have thought about doing a number of them but because of the high pollution day coming up, may have decided that some of them could be put off but others are more important, so the EPA has not refused any.

The Hon. RICK COLLESS: You said the burning regulation applies to incinerators. Does it also apply to fuel stoves, combustion heaters, open fires used for warming and cooking in rural towns and centres?

Mr WOODWARD: No, they are excluded. There is a list that excludes things like scouting activities, barbecues, there are agricultural activities that are excluded, crop burning, diseased crops—a whole range of things are not prohibited under that. There are also different levels of prohibition, depending upon whether they are councils in Sydney areas versus ones outside Sydney. There are less stringent requirements in non-Sydney areas compared to the others.

The Hon. RICK COLLESS: The no burn days through pollution are essentially because it would be a threat to health in the city, is that so?

Mr WOODWARD: Yes.

Mr R. H. L. SMITH: I appreciate that generally you let hazard reduction burns go if at all possible. In fact, you said you do not reject any of them, but they do only have a window of opportunity when the conditions are right to do hazard reduction burns. Does making this decision and going through the red tape processes slow down the planning, therefore reducing the window of opportunity for hazard reduction burns?

Mr WOODWARD: That is probably a question that would best be answered by the Rural Fire Service because I can only speculate on their behalf as to whether it slows down what they want.

Mr R. H. L. SMITH: Let us deal with your side of it. When they put in an application to you, what is the turnaround time for you to say no?

Mr EISER: In terms of a no burn notice, we give as much notice as we can, normally four days in advance. As we get more confident about the weather predictions, within two days we give them a formal notice that there is going to be a no burn notice called, whether it is likely or highly likely, to give them some formal notice that we are going to issue a hazard reduction burn. We then discuss with the Rural Fire Service what they have in mind as far as hazard reduction burns and other agencies—the Rural Fire Service is the co-ordinating agency—and to decide on the scope of the burns they may want for an exemption. It depends on the time of the year. If they are just at the start of their fire season they may wish not to proceed with a lot of hazard reduction burns because they still have a large amount of time left, or towards the end of the hazard reduction season they might want to proceed with a few more fires because they are running behind.

That is part of the negotiation process to the final number of hazard reduction burns that are allowed. We negotiate with those and the Rural Fire Service gives us the final list of exempted hazard reduction burns that we put in our notice that we publish on the first day of the no burn notice. There is not a straight answer to the number that we do exempt but that is part of the decision-making process.

Mr R. H. L. SMITH: So they prioritise?

Mr EISER: We want them to prioritise because we are not the experts in terms of hazard reduction burning. We are looking to protect the environment in terms excessive smoke pollution

from open burning on these particular days because the weather conditions are not conducive to getting rid of all that smoke.

Mr R. H. L. SMITH: So you do reject some because they are prioritising, they are dropping some out?

Mr EISER: They are prioritising them and we put those hazard reduction burns on the notice but certainly the EPA does not specifically reject those. We negotiate the final list and those burns are scheduled for a later date.

The Hon. TONY KELLY: If I have read the table right, how many days in the calendar year 2001 did the EPA ban fire activity in the Sydney Basin region? Was it just the two?

Mr WOODWARD: It was just the one no burn order that covered those two days, 23 and 24 June.

The Hon. TONY KELLY: What conditions must prevail for the EPA to announce such a ban. There were five country towns last year where you encouraged people not to use wood heaters by offering a subsidy. Was it the EPA or another government agency that gave that subsidy of about $750 to get rid of wood heaters in Cooma, Orange, Armidale, Lithgow, those towns that are in hollows? Obviously, that was done for health reasons.

Mr WOODWARD: Yes.

The Hon. TONY KELLY: What conditions must prevail? I presume there must be similar conditions in Sydney for no burns. Do you ever intend banning those wood fire heaters totally anywhere in the country rather than merely encouraging people because I have seven wood fires in my house and I do not particularly want to change to oil?

Mr ROUTH: I can give you an answer on the wood smoke reduction program side of things but there was another section to your question in terms of the no burn.

Mr WOODWARD: Perhaps you might deal with the wood fire part first.

Mr ROUTH: The genesis of the wood smoke reduction program, as it is called, is in the fact that EPA monitoring showed that some of those towns in the Great Dividing Range where presumably there is a significant number of solid fuel heaters in homes, you get a particular climatic condition in winter where those heaters are in use at pretty high levels. That means you have got problematic levels of particles in the air which Joe has mentioned have got health repercussions.

The Hon. TONY KELLY: For asthmatics?

Mr ROUTH: Yes, particularly. We have taken an encouragement or incentive route where we are offering a subsidy for people to remove their wood heaters and substitute them with either gas or electric heaters that do not have the same specific emission problems in that local area. The other thing to mention is that you are obviously talking about a whole range of ages and type of performance of solid fuel heaters. Some are probably 50 years old and some are very new. There is a very recent Australian standard for wood heaters which means that the performance of new wood heaters is far and away better than ones that are decades old. It is an Australian design standard so that is another significant way in which we have contributed to addressing that issue.

Mr WOODWARD: In essence, this has nothing to do with hazard reduction burning but it is relevant to the extent that we know smoke has health effects on people and that is why there is a range of programs aimed at trying to reduce it. Our response is not to go out and ban things like hazard reduction burning and home fires in peoples' places but it is to look at programs to try to get the balance right.

Mr ROUTH: We have a voluntary announcement of trying to encourage people "Don't light tonight" during winter. Again on meteorological conditions—

The Hon. RICK COLLESS: It will not work in Armidale and Cooma.

Mr ROUTH: We have predicted that it is an issue and that is why those two towns are in that Woodsmoke Reduction Program where people have an incentive.

The Hon. RICK COLLESS: Is there a good take up on that?

Mr ROUTH: It is very early days because the winter coming up is the first winter. I think there has been quite a positive reception.

(The witnesses withdrew)

JOHN ASHBURY BARBER, retired, 6 Kipara Crescent, Warragamba, and

ENID SHIRELY BARBER, retired engineer, of 6 Kipara Crescent, Warragamba, sworn and examined:

CHAIR: Have you been issued with a copy of the terms of reference of the committee and also the Legislative Assembly Standing Orders 332, 333 and 334 that relate to the examination of witnesses?

Mr BARBER: Yes.

Mrs BARBER: Yes.

CHAIR: In what capacity do you appear before this committee?

Mr BARBER: As a private citizen and I have retired from the water treatment section of the Water Board.

Mrs BARBER: As a private citizen and retired engineer.

CHAIR: Did you receive a summons issued under my hand to attend before this Committee?

Mr BARBER: Yes.

Mrs BARBER: Yes.

CHAIR: Do you wish to make an opening statement in support of your submission.

Mr BARBER: I think that says it all. I might add that we lost power through the electricity poles burning. Usually there is not much flammable material around them but it seemed as though they were susceptible to the flames and once they caught away they went. The poles have the green termite protection on them but if we could have some fire retardant paint on them to stop that happening because we lost power for about three days because of that. Temporary connections were made with straps and other poles alongside but the bases of the poles were all burnt and we lost power. That might be an angle. I have four photographs with writing on the back, if the Committee would like to see them.

CHAIR: Yes, we would be happy for you to circulate the photos.

Mr R. H. L. SMITH: I congratulate you as private citizens on coming forward to give evidence to a parliamentary committee. I also congratulate you on your obvious great work in Kipara Crescent, Warragamba. You obviously have a great love for the area and were a little bit braver than the neighbours.

Mrs BARBER: We are a little bit innocent there because we could not see what they were doing for the thick smoke.

Mr R. H. L. SMITH: You have mentioned a number of important points, one of which was the hazard reduction burning. Do you think it is a benefit?

Mr BARBER: It is benefit with a capital "B". As a matter of fact conditions would have been a bit different if the catchment authority had not burnt down below where we live. We are on about a 20 foot cliff and if they had not burnt there, there was probably about half a metre of fuel laying on the ground because no action had been taken for probably 15 years and it was building up and up. Luckily they had done it and that made our job easier. We were quite confident. They closed the road. They said "Everybody is out" and they were not: we were still there but we were quite confident we could handle it.

Mr R. H. L. SMITH: Had that not been done—

Mr BARBER: It could have been very interesting, that is right. That is so necessary around the town. When the board had it they used to do it.

The Hon. RICK COLLESS: Did the Sydney Catchment Authority burn right up to the base of the cliff?

Mr BARBER: They did.

The Hon. RICK COLLESS: How far back down the hills? Was it some considerable distance?

Mr BARBER: Yes, down from the sewerage treatment plant. We are sort of in between the section they burnt.

The Hon. RICK COLLESS: How far would that be?

Mr BARBER: How far from our place to the sewerage would probably be 200 metres roughly.

The Hon. RICK COLLESS: When the fire came into the burnt area could you notice a reduction in its ferocity?

Mr BARBER: My word, yes. We just had a moment of panic and we realised we had it in hand and there was no problem with our emergency tank, pump and all the nasties in our trailer, covered with wet bags and everything and we had no worries at all. We were putting out spot fires either side all the time and that kept us busy.

The Hon. RICK COLLESS: What suggestions would you have to somebody that was building a new house in your area in relation to fire prevention measures that should be built into a new construction?

Mr BARBER: Give all these shrubs and trees away. We like them but in the paddock area. It is important to keep under the house clean. It is a help just to have lawns. We have not got any shrubs in the garden at all, just lawn.

Mrs BARBER: One, my grandsons gave it to me and I cannot dig it out.

The Hon. JOHN TINGLE: Mr and Mrs Barber, the Committee heard in a previous hearing referring to the south coast that most households were simply not prepared to deal with a fire. Your submission says that you have 44 gallon drums filled with water to push over the cliff, a plastic lined trailer to fill with water and you have cleaned out the shed of paints and things. They are extraordinary and unusual preparations you have made and I congratulate you on them. What lead you to go to such lengths? Obviously you are concerned about fire but not many people concerned about fire would go to that length?

Mrs BARBER: It is our third bushfire.

The Hon. JOHN TINGLE: That is a good answer. In other words you have seen it before. Do you think people assume that they are going to be alright in a fire like this?

Mrs BARBER: Yes.

The Hon. JOHN TINGLE: I do not know how many of your neighbours took similar measures but I gather not many?

Mr BARBER: No, I am afraid not. Actually we used to go passed and say "They haven't got much chance."

The Hon. JOHN TINGLE: You are experienced?

Mr BARBER: Yes, that is right. If they would only come and see us and have a look at our place. We have spent time under the house dragging out all the leaves and the inflammable material.

The Hon. JOHN TINGLE: Quite apart from those preparations with the 44 gallon drums, do you believe that that made the difference in your case?

Mr BARBER: It helped, yes. As soon as it started coming up a bit we just shot them over the side. They are filled now ready to go again.

Mrs BARBER: I do not like them, but I put up with them.

The Hon. JOHN TINGLE: How do you think we, or you in your own area, can say to people "If you live in an area like this, you could be in trouble?" How do you get the message through to the average householder who does not think about bushfires from one year's end to another?

Mr BARBER: That is the problem, yes that is right. Clearing around the building is so important.

Mrs BARBER: I have got nice green lawns and little flowers, but that is it.

Mr TORBAY: You say in the submission "We were never told a thing about evacuation points or any checking at all"? Were you given any reasons why there was little or no communication?

Mr BARBER: No, we were just left. Actually the story went around that Kipara Crescent had had it: it is gone." So they just closed the road and that was right. When they took a head count at the evacuation point which I understand was at the swimming pool they said "Where's the Barbers?" Somebody said "Where are a Barbers? I do not know." That was it: we were on our own. We did not know anything about any evacuation points or anything but the people down the end house that they lost, his shed was alight so I grabbed the hose and went down. I was putting water on the shed but I could it was not making any penetration at all and the next thing the young chap said, "Forget it, its gone, the house is gone." They just walked out and all she had was a tea towel. I grabbed the hose and came back to our place and stood guard there.

Mr D. L. PAGE: I congratulate you on saving your house and a couple of others. It took tremendous courage and foresight.

Mr BARBER: Yes, we were proud to do it.

Mr D. L. PAGE: It was a proud moment of your life.

The Hon. TONY KELLY: Firstly, what communication did you receive from the Sydney Catchment Authority three months earlier when it was going to carry out its hazard reduction? Secondly, do you have any suggestions about the sort of communication you should have received about fires, evacuations, and so forth?

Mr BARBER: I think a screed could come round from the relevant authority, say the fire brigade, stating the position and what procedures will take place when there is a fire threatening—such as, "The swimming pool area will be the evacuation point. People will have to report there, but you will be told when to leave the house." In other words, some positive action to take at certain stages. But we never heard anything, so I do not know what happened.

The Hon. TONY KELLY: What communication did you receive from the Sydney Catchment Authority when it did its hazard reduction three months earlier?

Mr BARBER: I more or less made submissions to them about the requirements—telephone calls, letters, and God knows what.

The Hon. TONY KELLY: Did the authority respond?

Mr BARBER: They did eventually, yes. I think if that could be done, life would be a lot easier for everybody. We lost shops, and the industrial area was devastated. It was pretty severe.

CHAIR: With regard to communications, what do you believe would improve the situation, given that the police normally do the advising in terms of evacuation? I assume from what you have said that no police officers arrived at your premises.

Mr BARBER: No, they did not. They closed the police station.

CHAIR: Whether the police station is closed or not, police officers are available for emergency and routine duties at these times. We would normally expect to hear that police officers did in fact attend in your street. However, from what you say, that did not occur. How were the other neighbours advised?

Mrs BARBER: They would not have known. The police station is at Penrith, and it happened within half an hour.

CHAIR: What you are saying is that there was no early warning system either?

Mr BARBER: No, there was not.

CHAIR: Was there nothing on the radio?

Mr BARBER: I do not know about the radio. It was so quick.

The Hon. RICK COLLESS: You had to read the smoke signals?

Mr BARBER: That is right. We had more smoke inside the house then we had outside. All the alarms were going off. We had to pull the batteries out because it was getting a bit unnerving.

CHAIR: Thank you for taking the time to, firstly, respond in writing and, secondly, to attend today to give the Committee an opportunity to ask you some questions and clarify the points you have raised. Your evidence will be an important part of the Committee's summary and report.

(The witnesses withdrew)

(Short adjournment)

GRAEME CHARLES HEAD, Chief Executive Officer, Sydney Catchment Authority, 311 High Street, Penrith, sworn and examined:

CHAIR: You have been issued with a copy of the Committee's terms of reference and also a copy of the Legislative Assembly Standing Orders 332, 333 and 334?

Mr HEAD: That is correct.

CHAIR: Did you receive a summons issued under my hand to attend before the Committee?

Mr HEAD: I did.

CHAIR: Would you care to make an opening statement?

Mr HEAD: Only a very brief opening statement. I think the Sydney Catchment Authority's [SCA]submission is fairly comprehensive in outlining our area of operation, our specific interests with respect to fire prevention and fire management. It also touches briefly on issues post major fires to do with water quality but I may be able to update the Committee on the more recent monitoring we have been doing. As an incoming chief executive to the Sydney Catchment Authority—my appointment roughly coincided with the period we are discussing today—it was extremely pleasing for me to see the comprehensive approach the SCA takes to fire management. It is a relatively new organisation, only 2½ years old. It has a very structured approach to its participation with other agencies in fire management processes.

I did note the earlier comments of the Barbers with respect to coaxing us into the hazard reduction burn that occurred in proximity to the street in which they live. One of the things the SCA did very early in its life was to adopt the five-year plan that Sydney Water had previously had in place for fuel management. That plan is completed at the end of this financial year. The hazard burn that was discussed before was part of that programmed activity and would have been conducted with or without coaxing, weather and other things permitting.

The Hon. TONY KELLY: Was it conducted at the same time?

Mr HEAD: It was delayed, as the submission points out, a number of times because of poor, wet weather and was rescheduled each time. It was eventually able to be conducted in August. So there was quite a rigorous follow-up when weather had impeded the scheduled burns and the burn was completed.

It is important to draw to the Committee's attention that when the bushfire incident was over a very considerable second tier of work began for the catchment authority, which was essentially protecting the storages and water supply system from the impacts of the fires. All in all, about 120,000 hectares of SCA lands were burnt. In the Woronora and Avon special areas up to 97 per cent of the special areas were burnt and the intensity was fairly high. So, there were some very important first order issues for us after the fires to protect water quality from mobilisation of sediments or other problems that can occur after fires. There have been very few short-term water quality effects, all of which have been extremely well-managed.

In the Avon reservoir there have been one or two incidents of higher turbidity and these have been handled very effectively by the treatment process with no negative effects further down the system. That work continues. There is quite an extensive array of monitoring activities that need to occur as well as continual monitoring, particularly in severe wet weather events and any impacts on water quality in the reservoirs. The submission we have put forward to you identifies all the rest of the key issues in a fair degree of detail, so I will not restate those issues.

The Hon. TONY KELLY: You have told us how the fires had an appreciable impact on the water quality and that you managed that fairly well. How did you manage that? What sort of process did you use to manage it?

Mr HEAD: The point I was making was there was a great potential for negative impact on water quality. We have not seen the problems we anticipated that we might have. The first heavy wet

weather events were obviously the point at which we were most concerned, because a large amount of material could have been mobilised in the storages. The main problem area was around the Avon reservoir. The reason for that was that in the Warragamba area, most of the fires moved along ridges and did not impact on the riparian strips, the stream banks, as much. In the Avon area that was not the case. It was dealt with in the storages by the strategic use of booms, the way the off-takes managed and also by implementing the communication protocols that came out of the water inquiry that set up the SCA with Sydney Water in terms of what we might anticipate with respect to increased turbidity. So the treatment plants were able to manage that.

The Hon. TONY KELLY: So you used big bulldozers and put little dams in before it got to the water?

Mr HEAD: There is a multibarrier system in place with respect to the catchment itself, the storages, the treatment plants and distribution network. If you think about it in that order, the fires had an impact on the first but the other three were more than able to handle the impacts. We will continue to monitor that very closely over the coming months until all those circumstances that might give rise to acute impacts have been properly managed.

The Hon. RICK COLLESS: Section 66 of the Rural Fires Act provides that if a notification is served under that Act, a landowner of freehold land is required to undertake hazard-reduction work. Are you aware that that section applies also to the freehold land that the SCA owns?

Mr HEAD: I cannot give a definitive answer to that question, but I would imagine that that is the case. Our bushfire risk management plans are prepared in close collaboration with the relevant district committees and the relevant agencies involved. All strategic and statutory issues are taken into consideration in developing and implementing those plans.

The Hon. RICK COLLESS: What sort of monitoring do you do of fuel levels in forested areas on all your land—not just the freehold land that you own but the public land that you manage?

Mr HEAD: The main vehicle for controlling fuel is the bushfire fuel management plan, which I indicated a little earlier is a five-year plan that is reviewed annually.

The Hon. RICK COLLESS: What sort of monitoring procedures and processes within that plan keep track of fuel levels?

Mr HEAD: We have experts from the operations area who are very familiar with different parts of the catchment and what is occurring in the catchment. They participate in developing the plan. So there is visual monitoring and records of previous burns. There is a big emphasis in the SCA at present on setting up a range of comprehensive data systems to include things such as GIS capability. It is an evolving process, which includes historical records, the implementation of new technologies such as GIS, and visual inspection by staff in the catchment. That input is brought to bear on not just the development of the five-year plan but the annual review processes that adjust operations accordingly. As I said earlier, the current plan finishes at the end of this financial year so the planning process for the new five-year plan is well under way.

The Hon. RICK COLLESS: Is any regeneration of groundcover occurring in those areas that were badly burnt over Christmas?

Mr HEAD: Yes. It was quite heartening for staff to see that happening quite early on. There were comments about the intensity of the fire and the fact that it was difficult, based on the length of time you had to go back, to be certain about what kind of regeneration would occur and over what time frame. People have commented that the weather has been particularly good in terms of both protecting the storages from sudden inflows of debris and encouraging rehabilitation. That is being monitored very carefully. National Parks obviously has a major role to play in respect of rehabilitation, but the SCA also monitors very closely what is happening on its land and feeds that information into those processes. There has also been a significant process for us internally as an organisation in reviewing all the assets that may have sustained damage—fences, signs, buildings and co-ordinating in a prioritised fashion the response to replacing those assets. That has been a significant task.

Mr TORBAY: The report is quite detailed. In the last paragraph about debrief on the fire incident, you raise the issue of liaison with other agencies. At the time this submission was written your organisation was writing a report. Are there any issues with respect to liaison with other agencies that would assist the Committee?

Mr HEAD: The focus of debriefs internally is part of our incident management framework. As the submission points out, we have a corporate incident management manual, which articulates a risk-based approach. A range of sub-plans sits under it, including the bushfire operational plan. The framework requires debriefs. They are not triggered by the fact that something did not work properly; they are a fixed part of the process. We go through our own handling of the incident, the operation of the incident control room, and any feedback we receive from our people in the field or other agencies in order to check that things were managed well and, where necessary, in order to make improvements.

Although I have not yet seen the final report—I do not think it has been completed—verbal feedback I have received from staff is that the system worked extremely well. It was very evident to me, even though I had been in the seat for only a short period, that the incident control room was functioning very well and that there was very good co-ordination in the field. I anticipate that the report will identify some minor areas of improvement and perhaps identify some issues that we need to raise with other organisations that access our lands, but nothing significant.

The Hon. JOHN TINGLE: You make an interesting comment about the difficulty of conducting hazard reduction burns, particularly around Warragamba—rain is a very good thing in a water catchment area. You also comment about the use of slashing to produce fire breaks and so on. I know that hazard reduction burning and slashing deal with different types of clearance or reduction. Is there any indication as to what extent you would be able to use slashing in order to compensate for the fact that you are so restricted in what you can do with burning?

Mr HEAD: My relatively recent acquaintance with the details of this issue does not allow me to give a detailed answer to that question. I am advised by the staff who are involved in preparing the plans that, when developing those plans, they look very closely at all activities that will contribute to the plans being effective and slashing, hazard burning and a range of other things are extremely important components. Slashing generally occurs in close proximity to fire trails, and my understanding is that it complements hazard reduction burning activity rather than obviates the need for it.

Mr E. T. PAGE: On page 4 of your submission you give fairly detailed coverage of your collaboration with other bodies through the bushfire management committee. How did you co-operate and collaborate during the fires? How were you involved?

Mr HEAD: It was extremely close collaboration. Since the 1999-2000 financial year we have supported seasonal fire crews—so they have operated for the past two years. We provide significant resources for them. They are managed by National Parks but involve the deployment of our staff. I believe those crews have been extremely effective. During the bushfire incident the feedback from other agencies was that the SCA understood its role quite clearly and was participating well in the processes in the field. In the debrief process I have not seen any evidence today that there were concerns about the SCA understanding its role and how it worked with agencies. That is probably a reflection both of the fact that we dedicate resources through seasonal fire crews and of the extent of co-operation in the planning process, which means that extremely good communication and collaboration is occurring before you are in the middle of an incident.

CHAIR: Thank you for your submission and for your evidence to the Committee this afternoon.

(The Committee adjourned at 3.44 p.m.)