

NCC South Coast Bushfire Management Forum

Held: Saturday 25 June 2005

Tomakin Community Hall

Thank you to everyone who attended the NCC South Coast Bushfire Management Forum on Saturday 25 June 2005 for making it a success. The following write-up is an overview of the day.

The layout of this document is as follows:

1. Summary of issues raised by forum participants,
2. Key outcomes from the forum,
3. Introduction to the NCC Bushfire Management Program – Rob Pallin (NCC),
4. Introduction to the Science of Fire – Andrew Stanton (NCC),
5. Ecology of Grassy Ecosystems - Jackie Miles (Local Ecologist),
6. Bushfire Environmental Assessment Code – Simon Heemstra (RFS),
7. Preparation of Reserve Fire Management Plans – Matt Jones (NPWS),
8. General Questions,
9. Planning for Bushfire Protection – Lew Short (RFS),
10. Risk Management Planning on the South Coast – John Cullen (RFS),
11. Panel Discussion
12. Workshop Evaluation.

1. Summary of Issues Raised by Forum Participants.

- Clearing vs. building design for asset protection
- Protecting forest islands within a sea of urban development
- Biodiversity impacts of fire management
- Fire frequency as an impact on biodiversity
- Fire history (pre-European)
- Problems interacting with neighbours (eg SF)
- Lack of regeneration after fire
- Environmental and bushfire development controls
- Effectiveness of burning for fuel reduction
- Community expectations for fire management
- Biodiversity loss & native forest conservation
- Health effects of smoke from burn-offs
- Decision making processes for burning off
- Management of weeds that ‘benefit’ from fire
- Accessibility of plans/draft plans and information generally
- Data on fire thresholds and what is “natural” fire?
- Understanding/applying knowledge of fire intensity in fire management
- Importance of trust – sometimes what RFS and Council say and do is different from what is being done.

2. Key Outcomes from the Forum

- Agreement on the need for better communication between residents, Council, NPWS, RFS and other key players by:
 - Communicating at a street level
 - Meetings and workshops
 - Reaching a wider range of the community. For example, through the residence association's or council's postal address database.
 - Using clearer more easily understandable language
 - Reducing the use of acronyms.
- Agreement between residents, council and the RFS to begin working on a village environment and bushfire management plan that will be workable and all parties are willing to accept.
- Clarification of the positions of relevant people and organisations.
- Improved knowledge on fire ecology, planning and management.

3. Introduction to the NCC Bushfire Management – Rob Pallin (NCC)

The Nature Conservation Council (NCC) has had an interest in fire management since at least 1979. In the early nineties the NCC Bushfire Program was established. However in 1994, large fires triggered an increased role for NCC in fire management planning, bushfire education and advocacy for sustainable land policy. During this period NCC contributed to achieving greater protection of NSW through changes to legislation and the establishment of many National Parks. Also, since the passing of the *Rural Fires Act 1997* the NCC has had statutory responsibilities to appoint conservation representatives to Bushfire Management Committees around NSW

Another major role of the Bushfire Program is education. Forums, workshops and conferences are run on a regular basis to help people and organisations get together to learn about and discuss bushfire and conservation issues. Education material is also provided to schools through school visits and through the bushfire website <www.nccnsw.org.au/bushfire>. NCC also maintains a network of environmentally minded organisations and people interested in the role of fire in the environment and its management for the protection of the environment, life and property.

4. Introduction to the Science of Fire – Andrew Stanton (NCC)

Fire requires heat, fuel and oxygen to be able to burn. Without one or more of these components a fire will go out. Fire directly affects plants either through burning or scorching. Regeneration of plants after fire is either through resprouting (the growth of new shoots) and/or germination of seed (stored in the soil or on the plant).

The direct affect of fire on animals is death through heat or smoke. In order to escape the fire they need an ability to flee or hide. Although most animals survive fire, this will depend on the size and intensity of the fire, as well as landscape and animal health. Afterwards, as their habitat has been burnt, most animals will need to find refuge areas to survive until the burned areas regenerate sufficiently for food and shelter. However, some animals specialise in feeding on seeds or insects in recently burnt areas (for example magpies and robins).

Fire can increase soil erosion due to loss of leaf and vegetation cover, but the nutrient rich ash bed can assist germinating seedlings. Water quality can be reduced through an increase in soil and ash runoff, and regrowth can affect water yields. However rainfall is needed for normal ecosystem recovery.

In the longer term, different species are able to survive under different fire regimes, and some ecosystems require certain fire regimes to survive. The elements of a fire regime are the frequency, extent, season and intensity of a series of fires in any particular place. Too frequent fires can result in local extinction of species that have not had enough time to flower and provide seed for a seed bank or restock buds and tubers. However, too infrequent fire can cause the localised extinction of species that require disturbance such as fire in order for seeds to germinate and seedlings to establish. Therefore it is important that fire management takes these aspects into consideration in order to maintain biodiversity.

5. Ecology of Grassy Ecosystems - Jackie Miles (Local Ecologist)

There are a number of grassy ecosystems ranging from the Alps to the coastal headlands. Grassy ecosystems often exist as a landscape mosaic with woodlands and forests. Grazing and fire can be key drivers in maintaining grasslands as they reduce the height and thickness of the grass and allow herbs to re-establish.

With the absence of disturbance, some shrubs are able to invade grassy ecosystems and displace grasses and herbs. Shrub invasion can be reduced with a number of management options. For example grazing, however livestock will often eat sensitive species of shrubs as well as grasses and herbs. Mowing is not really a large scale option and leaves small windrows of mown grass that stop growth and can increase weed invasion and wild fire potential. Another management option is fire.

Although fire may be the most accessible and logical management tool, there are a number of issues that need to be considered if it is to be used.

These include:

- build up of fire loving species such as bracken fern and blady grass,
- increased shrub and tree regeneration,
- loss of old habitat trees, woody debris and fire sensitive communities and
- weed invasion.

Fire as a management option needs to consider:

1. when to burn,
2. how to burn,
3. how patchy is the burn and
4. how to control the burn.

6. Bushfire Environmental Assessment Code – Simon Heemstra (RFS)

Hazard reduction prescriptions are decided either through the:

- Bushfire Risk Management Planning process,
- agencies decide it needs to be done, or
- duty of care and complaint system (i.e. Section 66 notices).

Every landholder must take all reasonable steps to ensure that fire does not leave their property. If it is felt that there is a hazard on a neighbouring property then a complaint can be made to the fire service. The hazard is then determined and if needed, the type and extent of works to be carried out are established. A section 66 notice is then issued to the owner of the hazard. This can be appealed and may be revised. If not revised, and the works are not carried out, the RFS can do the works and send the landowner the bill.

Environmental regulations for hazard reduction used to be difficult due to all the regulations that applied to hazard reduction. These could include:

- Local Environment Plans,
- Tree Preservation orders,
- Threatened Species and aboriginal heritage legislation (Department of Environment and Conservation) and
- Soil and vegetation clearance legislation (Department of Infrastructure, Planning and Natural Resources).

To make it easier for public and private land owners, the *Rural Fires Act 1997* was amended to allow for a streamlined assessment process called the Bushfire Environmental Assessment Code (BEAC). Under this new framework an application can be made to the RFS (or NSW Fire Brigades) to have a free environmental assessment. This will determine if the land and activity is covered by the BEAC, what works can be carried out and at what distances APZs and SFAZs need to be.

Environmental assessments for mechanical works include soil stability, riparian buffers, threatened species, cultural heritage, existing approvals and weeds. Environmental assessments for burning are as above, but also include assessment of smoke and fire regimes.

The BEAC was open for public comment after an internal review with agency consultation. It will now be revised and gazetted by September 2005.

Q & A (Simon Heemstra)

Q. Can one approval be issued for works being carried out across more than one land tenure (e.g. National Parks, Private and State Forests)

A – Yes, but the BEAC requires the signature of all land owners.

Q. Are Asset Protection Zones for bushfire protection allowed to infringe on SEPP buffers?

A - The buffer is included for SEPP 26 (littoral rainforest) but not SEPP 14 (coastal wetland).

Q. State Forest Management Plans allow burning between 2-4 years for forest health which is more frequent than National Parks guidelines and BEAC. Why is there a difference in fire regimes with the BEAC?

A - The fire regimes in the BEAC were devised from the best knowledge we have at the moment by Ross Bradstock and others from the Department of Environment and Conservation. State Forests may or may not have better science or different objectives.

Q. Is there any indication of whether the BEAC will address smoke? Fire from hazard reduction and post logging burns last winter covered the area with smoke. Severe health implications of bushfire smoke have been reported. Bushfire smoke is more dangerous than woodfire smoke as the fuel is greener. Can you co-ordinate burns so that the amount of time that smoke is generated is reduced.

A – It is unknown if there is a difference between woodfire and bushfire smoke. Different plant/tree species produce different toxins.

- As for the BEAC, if there is an immediate effect of a high concentration of smoke then people need to be notified. There are also ‘no burn’ days issued by the Environmental Protection Agency if there are adverse weather conditions, for example winds, high pollution levels or temperature inversions etc.

- It is tricky to co-ordinate burns as the timing of burning is difficult. Many factors need to be considered eg. safety, crew resources, weather, etc.

- RFS is aware of and attempting to manage, the health problems of smoke.

7. Preparation of Reserve Fire Management Plans – Matt Jones (NPWS)

The National Parks and Wildlife Service has recently developed a new approach to fire management planning. The previous process and format generally resulted in a 40-50 page book (and sometimes larger) that was considered cumbersome and difficult to apply. It was also time consuming to produce, and static so it quickly became out of date, as well as not being operationally focused,

Around August 2003, a new streamlined user friendly process was developed for a standard application of reserve fire management planning on NPWS reserves. These new Fire Management Plans are generally written to last 5 years but are to be revised annually. They also include fire thresholds modelling and fire management zoning information.

The purpose of the new planning format is to decrease the length and content of Reserve Fire Management Strategies (where possible). Currently, three different types of plans (Type 1 – Generally 1-2 page document, Type 2 – Generally A0 map based document, and Type 3 being a more detailed planning document supported by an A0 map based project) are the standard depending on the size and requirements of the reserve. Maps are prepared by using a computer mapping program called Geographical Information Systems (GIS). The maps include bushfire suppression information such as emergency contact numbers and fire seasons as well as resource management information such as fire management zones, vegetation types and proposed burn areas.

A 1-2 page work schedule is generally prepared from the fire management plan outlining the strategies that will be implemented over a 12 month period for a reserve. This may include ecological and hazard reduction burning, track maintenance or other activities

Bushfire Suppression Maps are also prepared to help direct planning in the case of a wildfire. They are produced annually using GIS. They contain all the key information needed including fuel loads and the location of assets such as buildings, plantations, threatened species, cultural heritage and biodiversity information (upper and lower fire thresholds for plants). Fire control information is also included such as roads, tracks, water points helipads, communication, contact numbers and operation guidelines.

Case Study – Montague Island (Type 2 project)

Case Study – Biodiversity Threshold Management at Gulaga National Park

Questions (Matt Jones)

Q. Are public relations also needed in Fire Management Plans?

A - It is important for people to be informed and know what is going on.

Q. Maps are good but expensive, how accessible are they to the public?

A - All maps are produced on the website but there has never been much interest in them

Response from audience - Possibly because they are too complex.

Q. Is post fire management considered?

A – There is a policy for remediation works i.e. closing trails and trail classification.

Q. What is the basic philosophy of plans for the park?

A – Protection of the park, biodiversity etc and protection of property outside the park. All are important aspects of fire management within reserves.

Q. “Natural” (pre-European) fire regime data sets are they included/produced?

A – Bradstocks fire threshold data sets are used (available on the web). These are the current best science/knowledge.

A – (Simon RFS) RFS also uses this data. We need to be careful of using pre-European fire frequencies as we are in a different more fragmented landscape.

A – (Rob NCC) There is much agreement among scientists that we don't know what pre-European fire regimes were in much of South East Australia.

Q. Bioregional events have often led to dieback. With regard to National Parks, does the science look at what else is happening in the landscape?

A – No. We are using the best of our knowledge. There is no information at present on this.

8. General Questions

Q. Where do you see the use of ground truthing before/after a fire? What about the other aspects of a fire regime other than frequency?

A – (Jackie) It is desirable to work to that kind of detail but in practicality it is difficult. For some species it is also advantageous to vary intensity as well as frequency.

A – (Matt) The burn plans often identify the desired intensity. We look at fuel, weather etc to see if we can achieve the desired intensity, if not we don't burn.

A – (Simon) Frequency, intensity, extent and season make up the fire regime and they are important. Frequency is the most easily control and most focused on by researches. Intensity is also important depending on the management outcomes. For example, low intensity is required to maintain koala populations but high intensities are needed to reduce mistletoe. Management of low and moderate intensity fires gives different hazard reduction outcomes.

Q. Who is in charge of wildfires?

A – (Simon) Depends on the size of the fire. Small fires are controlled by the land manager, management of large fires is done by the RFS, but there is an incident management team which includes National Parks and Wildlife Service, State Forests etc.

Q. What is being done in terms of biodiversity studies at a local level for council reserves and crown lands?

A – (Belinda Wagner, Eurobodalla Shire Council) Burning council reserves is usually for asset protection therefore we expect biodiversity loss. Eurobodalla Shire priorities are the protection of life and property. Council has small parcels of land with minimal funding. We are trying to get management strategies for some areas for example, Burra Burra Point. Financially we can't do what the National Parks and Wildlife Service does.

Q. Hypothetically, if Guerilla Bay forest was deemed of national significance, what could we do to protect it?

A – (Simon) Protection of life is primary. If the vegetation is unmanaged can the life of fire fighters be protected? If there is an area with low conservation value we can clear the vegetation. If the area has high conservation value then you can protect assets by improving the construction of the house, have a safe area, holistic community management etc.

- Vegetation clearing is not the only fire mitigation measure that can be applied.

Q. With regards to clearing in Guerilla Bay and weed reduction works, there has been removal of native trees while leaving weeds. Why?

A – (Belinda Council) Some shrubby weeds are left. This may be because they are too big to remove or lack of funds.

A – (Belinda Council) If one house does not do any hazard reduction then it increases the risk for other houses. If you want to protect the houses that are there then some hazard reduction is needed.

A – (John) Some areas have poor planning, possibly due to lack of resources or because they were originally given to council for reserves as they were land that could not be protected and are difficult to develop.

Response from audience - What is being said and what is being done is different. How can we as a community have faith in what you say when what we see is clearly something different?

9. Planning for Bushfire Protection – Lew Short (RFS)

Bush fires are an inevitable part of the Australian environment. The Government legislated that planning and development controls be incorporated into new developments after August 2002 due to significant losses from recent bush fires. Planning for Bush Fire Protection incorporates the following objectives for bushfire protection:

- To protect life (including firefighter) and property
- Provide adequate protection for occupants from exposure to bushfire
- The building and landscape shall not contribute to exposure of adjacent properties
- Design to include defensible space
- Appropriate services for survival before, during and after passage of the fire

This is achieved by a combination of:

- Controlling the types of developments permitted in bushfire-prone areas (integrated, infill, Special protection developments)
- Asset Protection Zones to reduce heat (intensity) through fuel management
- Separation of buildings from bush fire hazard thereby reduce buildings vulnerability to ignition from heat radiation, flame or embers
- Access - for firefighters and safe evacuation/relocation routes for residents
- Adequate services - adequate water supplies and power
- Emergency planning
- Community education, preparation and responsible management

Lew Short advised that while removal of anything near a building that embers could set alight and stoping embers lodging in buildings was important, ember attack remains a significant threat to properties that are not well maintained or where people have not actively managed the block. This requires effective fuel management. A continuous canopy and ground fuels exist through much of Rosedale and Guerrilla Bay that may support bush fire. Effective management of ground and near surface fuels will significantly reduce the threat to life and property in these areas. This does not necessitate the wholesale removal of canopy trees.

There is a trade off of environmental protection to achieve community safety. Fire management and planning is continually evolving with the help of community participation.

Village Protection Plans are a good first step and should be discussed with local RFS District staff.

Questions (Lew Short)

The different opinions provided by RFS and Council (for example on organisation saying we don't have to clear and the other saying we do) makes it difficult to have/keep faith in the decision being made.

It is difficult for one person to do something with their house if others don't.

A – Absentee landholders can make it difficult.

A – There is a need to engage with the whole community

Q. How does open land in the path of potential fire decrease the hazard reduction that needs to be done?

A – 1 hectare of bush can allow a fire to reach its maximum speed, intensity etc. Therefore management still needs to be done in the small patches of bush despite surrounding open lands.

Q. Developers are greedy and tend to develop right up to the boarder of their land, what does that mean for Asset Protection Zones?

A – Since 2002 (Planning for Bushfire Protection), Asset Protection Zones can not be offset onto other landholders land. If a perimeter road can not be constructed then the development can not proceed.

Q. What requirements are there for infill development and extensions?

A – If you can still have a 20 meter Asset Protection Zone then usually you can proceed. If there is less of a distance, improved building design may still allow the extension to be approved.

A - Around this area of the coast the continuous canopy is an issue, particularly where the trees are overhanging the house.

A – There is room to negotiate with improved building design versus vegetation removal.

Q. What improvements can be made to a building to increase its protection?

A – There are a number of things that can be done. You can change the materials used in construction, ember proof the house with non corrosive metal based flyscreens, and install sprinklers and rain water tanks.

Q. What are the standards for new construction based on? Every household is different in terms of number of people and their ability to fight fires.

A – (Lew) The standards are based on the worse case scenario. New subdivisions must meet these standards.

A – (John) Existing houses fall under the Bushfire Risk Management Plans and there is a need for more community education regarding fire management. There are still times however, that people need to be ordered to act.

A – (Simon) The *Rural Fires Act 1997* only gives the RFS authority to modify vegetation not peoples houses, except with new development. We can only advise people on what they can do with their houses.

10. Bushfire Management Committees (BFMC) and Risk Management Planning on the South Coast – John Cullen (RFS)

Each district has a Bushfire Management Committee which reports to the Bushfire Coordinating Committee. They must have regards to principals of ecological sustainable development, and are regularly audited to ensure that strategies are being carried out.

Bushfire Management Committees meet 2-3 times a year and are responsible for developing Operational Plans (what will happen during an unplanned fire event including resources, access, water etc) and Bushfire Risk Management Plans (BFRMP).

Members of the Bushfire Management Committees include RFS, NCC, Department of Environment and Conservation, State Forests, Council, Landholders, Police, Electricity and Water carriers, RTA, Department of Lands, Telstra, Railways, NSW Farmers, Rural Lands Board. Different agencies bring different values or issues. It is a cooperative approach to land management which is proactive rather than reactive.

Bushfire Risk Management Plans

Bushfire Risk Management Plans are a legal document devised to protect the 'assets' determined for the local area. The plan is signed of by the Bushfire Management Committee members, who then have responsibility for the document and the strategies that need to be carried out.

The initial part of the process is to identify the assets, which can include buildings, the environment, power lines, roads, water catchments, farms, plantations, and aspects such as tourism. The threat to each asset is then determined and strategies devised to decrease the risk, including who is responsible for carrying out the actions.

The Eurobodalla and Bega area land and fire management agencies have completed strategic works. However, works to be carried out by property owners have not been achieved, particularly Asset Protection Zones around homes.

11. Reverse Panel Discussion

(Panellists ask questions or make proposals. Audience responds to panellist statement)

Jackie (general comments)

Removal of the understorey for hazard reduction does not mean that you will be left with nothing. But this will depend on what species are present on site including what is stored in the soil seedbank. There may be many species that emerge once the understorey is cleared as some species need disturbance to be able to germinate.

A fuel load of less than 5 tonnes per hectare is needed for more effective management of fire. This may mean a mown lawn is needed or a sparse shrub and ground cover. Mechanical removal, such as trittering (the cutting, mulching and spreading of vegetation), of the understorey can also be very effective at providing fuel reduction.

Chris Kowal (Eurobodalla Council)

Q. There is conflicting legislation especially between protection of the environment and protection of built assets from bushfire. How will the Council be assisted by the community in defining, and maintaining the character of where they live?

A. There needs to be a decision on what people consider an asset, some might consider their house most important while others the environment around the house. People need to be assisted to communicate with each other without feeling they are going to be attacked. This communication needs to include land managers such as Council and the Department of Environment and Conservation as well as the RFS with the local community at a street level. There may be a need for everyone to make compromises.

Matt

Q. Community consultation is part of the process for Bushfire Management Plans. What is the best way to promote the process and get feedback from the community?

A. Information needs to be simple and easy to understand. Often there is not enough information and too many acronyms; most people do not know what they stand for. School and community group presentations would be helpful. But it needs to be visual, interesting and fun.

A. Is it possible to have a list of people who are interested in the plans? Possibly advertising it in media other than just the newspaper.

Simon

Q. Community ownership of village plans is needed. How can we encourage absentee landowners to participate in planning and management and how can they be given ownership of the process?

A. The amount of non-resident ratepayers is decreasing. Public meetings are often well attended, but they need to be well advertised. Lists from local associations and Councils should have most people's addresses.

A. Draft copies of the village fire management plans should be sent out so that people can comment on them without having to be physically at the meetings. The point of view of renters also needs to be accounted for.

A. Meeting times are difficult because summer is convenient for residents as they are more likely to be at the coast, but by then it is too late for fire management purposes.

A. It is important for RFS and Council to follow up on promises so that people don't get disillusioned. For example saying they are going to visit everyone in Guerilla Bay and then not doing so.

A. Nice letters with guidelines on what needs to be done should be sent out might help get people, particularly absentee land owners, to carry out maintenance.

Audience

Q. How effective are hazard reduction burns in reducing fuel? What is the science and or monitoring behind this assumption? What about the production of more fuel through scorching trees and the subsequent leaf fall, dead trees etc or the stimulations of a large amount of regrowth?

A. – (Simon) Hazard reduction decreased the biomass and reduces the number of intense big fires. Leaves that fall from trees are devoid of nutrients and so when it is dry they do not decompose as quickly. Leaves that have been scorched and fall still contain nutrients and therefore decompose faster.

Unfortunately there are not enough resources to research everything. There are however, many other researches that have studied this.

12. Workshop Evaluation

Thank you to everybody who took the time to fill in the evaluation form. We use these evaluations to make improvements to our Forums and as another means to collect information on the issues important to workshop participants.

According to feedback on the South Coast Forum participants felt the forum was very good and met their expectations. Generally, people came away with a better understanding of who the stakeholders were in bushfire management. Many people also said that they are more capable of communicating effectively as they now understand each other better.

People were drawn to participate in the forum for a number of reasons. Some people wanted to learn about fire ecology or fire management, while others wanted to raise and discuss specific issues. According to many participants, the forum highlighted the complexity of bushfire management issues. However, many respondents considered the environment more important than personal risk from bushfires. As a result, many people said they are unhappy with extensive hazard reduction programs.

The lack of time for discussion and questions was raised through the evaluation survey. Many people felt that one day is not adequate time to cover all the issues satisfactorily. Often, we hold a field trip on the Sunday, and this sometimes allows for issues to be covered more thoroughly.

Participants suggested a number of improvements for future NCC bushfire management forums. Areas that needed improvement include:

- Designating more time for discussions and also more time for general questions.
- Taking participants on a field trip to show local issues
- More involvement and empowerment of participants,
- Resolutions made within the community as to next action to be taken. Although one of the main resolutions of the day was to start a community bushfire plan, many other issues were discussed but not resolved.
- More maps and displays