

BUSHFIRES IN THE BURBS - THE COMMUNICATION CONUNDRUM

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Abstract

Brisbane City Council is located within one of the fastest growing regions in Australia. Yet it remains the most biodiverse capital city in Australia. To maintain this biodiversity particularly within its conservation reserve network fire is 'one' of the tools used to reduce wildfire risk to the community and ecosystems, and provide for the ecological requirements of fire adapted species. Whilst this style of land management is common place across Australia and in other parts of the world, many city dwellers find it strange and difficult to come to terms with fire in the urban landscape. Communicating the basic elements of fire awareness and cohabiting responsibly in a fire prone landscape has been challenging. To get the message across effectively, collaboration with the Queensland Fire and Rescue Service and the South-east Queensland Fire and Biodiversity Consortium has provided the best results to date.

Introduction

Bushfires in a highly urbanised environment can be quite alien to many residents. Generally bushfires are seen as a rural phenomena. So this alien concept of lighting bushfires in the heart of suburbia often creates concern amongst some, is poorly understood by most, and the enlightened marvel at what can be achieved. Brisbane City Council has strived, and continues to explore innovative methods, to raise awareness of the diverse issues that interconnect fire with the community. Communicating fire issues to an urban audience not surprisingly presents a number of challenges.

Only since 1991 has Brisbane City Council recognised its responsibility to manage its bushfire prone estate. To effect this, around 80 staff have undertaken fire training from basic fire safety up to Incident Control level to actively manage prescribed and wildfire situations.

Brisbane has just over 7000 ha of bushland managed as conservation reserves plus at least another 13000 ha in water catchment reserves and a few smaller parcels for waste management. Narrow corridors of remnant vegetation that predominantly follow waterways link many of these reserves. Whilst these reserves may seem quite small in size compared with our counterparts in state agencies, at a local government level, the very high urban interface and critical infrastructure, makes fire management on these lands extremely complex at a number of levels.

The aim of this paper is to outline the issues that highly urbanised land management agencies face when dealing with prescribed fire and wildfire and the communication strategies that have been developed and continue to be modified to raise awareness throughout the urban and periurban community.

Prescribed Burns

Brisbane City Council's 7000 hectare conservation reserve network consists of thirty-seven distinct reserves. These reserves are subsequently divided into a total of 530 fire management blocks, or areas, and have a total of 2192 neighbours with adjoining boundaries.

Given the diversity of the vegetation communities in the most biologically diverse capital city in Australia, and the issues associated with fire hazard management in an urban context, careful consideration is given to fire management across Brisbane City Council's estate. This is achieved through the incorporation of the latest relevant scientific findings, the South East Queensland Fire and Biodiversity Consortium guidelines, existing plans of management, hazard reduction requirements, and locally important information such as fire history and smoke management. In finding a balance between this vast array of issues, Brisbane City Council has a relatively conservative approach to it's annual prescribed burning program. This is highlighted in (Table 1), which illustrates the area burnt annually through prescribed burns compared with the total area of estate.

Table 1. Prescribed Burn Statistics

Year	Prescribed Ha	Total estate Ha	Prescribed %
2002	157.5	6758	2.33
2003	123.8	6814	1.82
2004	241.1	7064	3.41
2005	135.2	7119	1.89

At the current rate of prescribed burning it will take around forty years to burn all fire management blocks within Brisbane. At a landscape level, fire exclusion zones are identified in management plans. At an operational level, planning for prescribed burns also ensures that sensitive areas are excluded from fire thus creating an unburnt mosaic within each burn block.

Unfortunately some of the issues surrounding prescribed burning can be highly emotive and are often poorly understood. As a consequence, one of the real challenges we face is effectively informing and consulting with the community. The following communication strategies are utilised to ensure that our immediate neighbours and those residents who have an interest in our prescribed burning program are informed:

- a prescribed burn booklet detailing the program over the next two years is available at libraries, Ward offices and customer service centres;
- public notices are placed in local papers every two months throughout the prescribed burn season detailing the areas intended to be burnt; and
- notifications are posted to each affected neighbour in the week prior to conducting a burn.

In essence this process is essentially informative, but does have the capacity for residents to contact Council to discuss concerns or issues that may be addressed on an individual basis.

To communicate with a broader cross section of the community a slightly different approach has been adopted, utilising group presentations (Green Days, Bush Neighbour School Program), take home information (Managing Fire Brochure, Bush Neighbour Kit), and workshops (Conservation Partnership Program). These are discussed in detail under Fire Awareness.

Brisbane City Council is looking at ways to improve not only the content but also the delivery methods to ensure the community remains informed.

Manage Arson Events

The two major issues that direct Brisbane City Council's response to arson are the protection of life and property associated with the reserve and the potential loss of biodiversity from unplanned fires. Brisbane City Council uses a number of different strategies to mitigate the occurrence and impacts of arson. Over the last twelve years Brisbane City Council has established infrastructure and resources in an effort to counter arson events in co-operation with the Queensland Fire and Rescue Service.

One of the more alarming statistics gathered over the last four years, is the area burnt by wildfire compared to prescribed fire (Table 2).

Table 2. Wildfire v's Prescribed fire

Year	Prescribed Ha	Wild fire Ha	Total burnt Ha	Total estate Ha	Prescribed %	Wildfire %	Total %
2002	157.5	714	871.5	6758	2.33	10.96	13.29
2003	123.8	139	262.8	6814	1.82	2.04	3.86
2004	241.1	574	815.1	7064	3.41	8.13	11.54
2005	135.2	257	392.2	7119	1.89	3.61	5.5

Wildfire accounts for significantly more area burnt each year than prescribed fire. This highlights the necessity for rapid response, and where possible, containment strategies based on direct attack rather than back burning. On average Brisbane receives twenty-one days of fire weather that meets or exceeds the fire weather that Sydney experienced during the 1994 bushfires. Historically, this weather occurs in isolated peaks rather than prolonged periods during the period of August through to November.

Brisbane City Council operates an after hours and weekend rotational stand-by system, to ensure its ability to

respond rapidly to arson attacks in its reserves outside of normal operational hours (Table 3).

Table 3. Fire Stand-by Level

Fire Stand-by levels (Guide only)		
Forest Fire Danger Index	Code	Stand-by Levels
0 – 12 Low – Moderate	Green	Natural Area Management Officer discretion.
12 – 24 High	Yellow	1 Stand-by team.
25 – 50 Very High –Extreme	Red	2 Stand-by teams. All equipment filled and ready. Hours of stand-by adjusted/extended to suit conditions.
<i>Consideration given to depot stand-by during critical hours of day.</i>		

The activation and escalation of this preparedness response is linked primarily to the Forest Fire Danger Index and to atmospheric, environmental and social parameters. Stand-by or wildfire response requirements are communicated initially via a linked pager network to all fire staff. In an effort to respond rapidly and reduce the negative impacts of wildfire, Brisbane City Council maintains:

- Radio communications with compatible frequencies of neighbouring land managers and Queensland Fire and Rescue Service;
- Open communication channels with neighbouring land managers;
- Provides information to Queensland Police Service to follow up on when suspected arsonists are known to be active;
- Increases patrolling during extreme fire weather; and
- Delivers supporting information/awareness programs such as Bush Neighbour Schools Program and Bushfire Prepared Communities.

Smoke Management

The most wide spread fire issue that affects the community is that of smoke. Figure 1. shows the air-shed and topography of the Brisbane area. Brisbane's topography and weather patterns lend itself to a greater propensity of increased levels of smoke nuisance across a wide area. Unfortunately, the dominant weather patterns for the prescribed burn season are also those that contribute most significantly to the smoke nuisance issue.

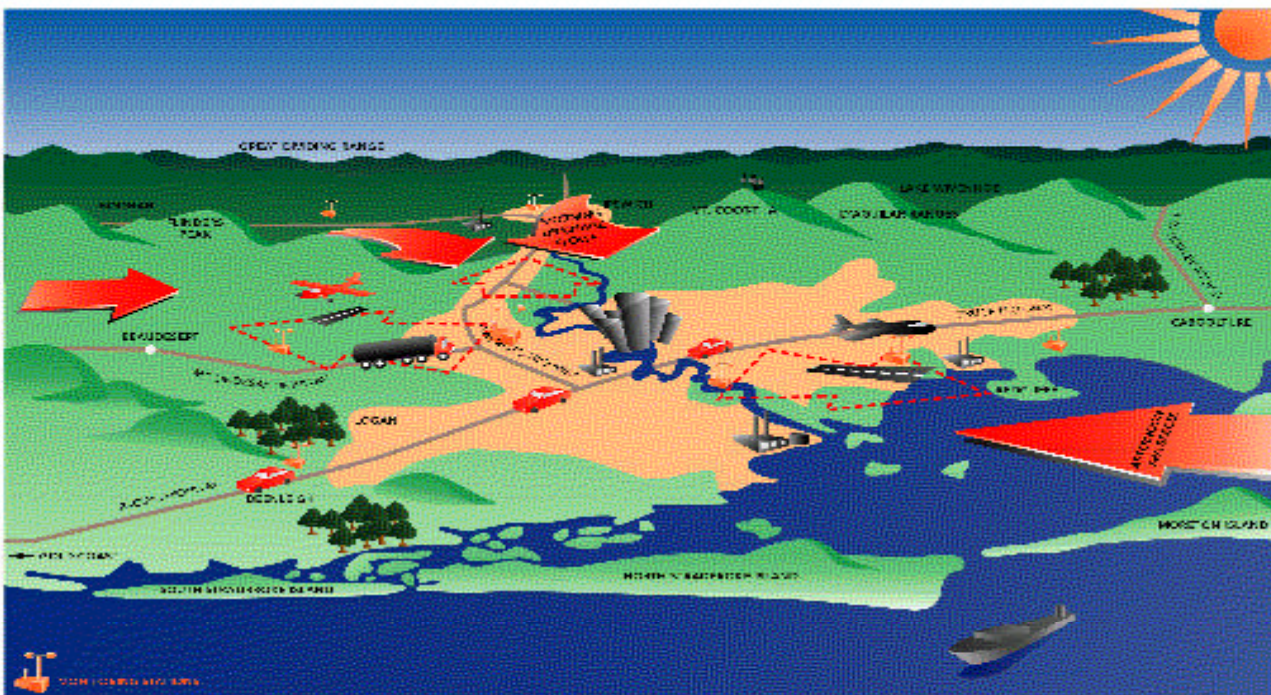


Figure 1. Brisbane air-shed and topography

Brisbane is surrounded by ranges on three sides, the Birnham Range to the south and the Taylor and D'Aguiar Ranges to the west and north. Smoke or airborne pollutants become concentrated in the early hours of the day in low-lying areas. Brisbane's air shed is affected not only by emissions within Brisbane (predominantly vehicle based), but also from the surrounding and outlying shires/cities. Smoke from cane fires and prescribed burns in northern New South Wales can also add to the smoke draining from the west along the Brisbane valley. This issue is particularly significant given the number of complaints from people with respiratory illnesses during prescribed burns. This issue was illustrated recently by the cancellation of three burns due to an exceedence of airborne particles (PM10 and PM2.5). PM10 represents the particulate matter with a diameter of 10 microns or less. PM 10 can enter the respiratory system, with the larger particles 2.5 - 10 microns being trapped in the upper respiratory tract, affecting lung function. PM2.5 however, represents the very fine fraction of the particulate matter, which can enter deep into the lungs and may seriously affect lung function. PM10 and PM2.5 have been established based on the protection of human health and well-being. The consequences of leaving this issue unmanaged are clearly obvious.

Brisbane City Council is currently working with our neighbouring land managers to develop a register and communication protocol to advise residents and institutions who may potentially suffer adverse health effects from smoke generated by prescribed burns so they can take the necessary remedial action. Essentially, if Brisbane City Council is planning to undertake a burn that is likely to direct smoke over a neighbouring jurisdiction, then Brisbane City Council would advise that agency, who, in turn would advise those registered on their "Concerned Resident/Institution Register" so that those affected could take remedial action.

To ensure this is successful, a number of stakeholders need to work together. These stakeholders include the Bureau of Meteorology, Environment Protection Agency, Department of Primary Industries Fisheries & Forestry, Queensland Parks and Wildlife Service, Queensland Fire and Rescue Service (Fire Communications, Rural Fires), Department of Defence and the local governments of the greater Brisbane area.

Currently, in addition to the Concerned Resident/Institution Register, Brisbane City Council provides information to the community on its prescribed burning program in the following formats:

- Bimonthly notification in local press;
- Prescribed Burn Booklet available at libraries and customer service centres;
- Letter box drop of immediate neighbours;
- Media release to local radio stations;
- Notifications posted on track and trail head in affected bushland areas; and
- Phone contact with local Councillors office.

Increased smoke levels created by fires predominantly burning west of Brisbane mean that smoke management is most critical during periods of stable air patterns, such as those favoured for prescribed burning. Unless this issue is managed effectively it has the potential to curtail prescribed burning within highly urbanised areas, purely on health grounds.

Fire Awareness

One would imagine that if your property has a direct boundary connection with a bushland reserve that is burnt either by those charged with the responsibility of managing it, or by arson events, then it would be reasonable to think that becoming proactive in property protection measures, or just raising your own awareness of fire issues would be practical, sensible and justify the incursion into your free time?

Clearly this is not always the case. Our subtropical climate generally belies the few months where short periods of very high to extreme fire danger weather persist (25 and above on the Forest Fire Danger Meter).

Brisbane City Council has tried a number of strategies to deal with this issue with various levels of success. These include:

- Incidental neighbour contact, through the Conservation Ranger's patrols;
- Good Neighbour Program (later to become the Bush Neighbour Program) - targeted at a street by street level;
- Increased fire preparedness levels through widening fire access tracks along property boundaries;
- Combined presentations to high-risk communities with Queensland Fire and Rescue Service (Bushfire blitz and Bushfire Prepared Community);

- Combined presentations with Fire and Biodiversity Consortium to Conservation Partnership private property owners; and
- Bush Neighbour School Program.

The incidental contact whilst on patrol:

Brisbane City Council Conservation Rangers undertake vehicle and foot based patrols of the conservation reserve network. These incidental opportunities to talk with neighbouring residents or visitors form part of their duties during these patrols. Features of this approach include:

- It is cost effective in terms of multi tasking (no additional cost);
- The "one on one" nature tends to provide a good communication loop;
- It is not target specific;
- It may miss the most at risk or unaware resident; and
- It is not effective in terms of comprehensive coverage of all neighbours.

Bush Neighbour Program

This was a planned and structured program that involved inviting residents from identified high-risk areas to participate in fire awareness sessions. It was aimed at improving their understanding of the effects of fire and what they could do to prepare their own home in the event of a bushfire. Unfortunately the low level of attendance

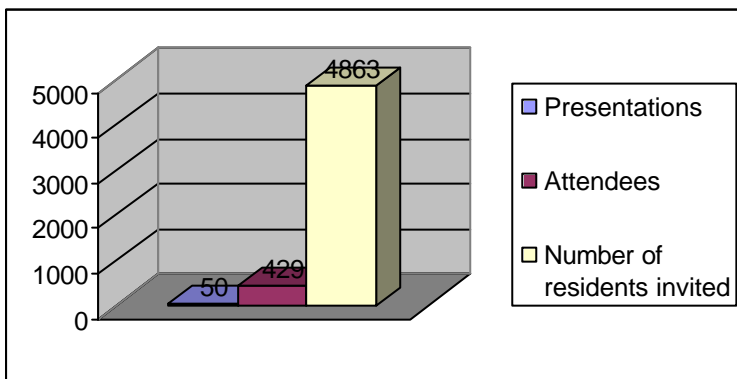


Figure 2. Good Neighbour Statistics

from those invited, reduced the overall effectiveness of the program as outlined in Figure 2. Features of the Bush Neighbour Program included:

- It targeted high-risk areas;
- It had structured delivery with visual aids and take home messages;
- It provided the opportunity for community capacity building through shared interest;
- It was delivered on site with real life examples in abundance;
- It was peer reviewed by industry (Safer Communities Award 2002);
- There were some major difficulties in generating community interest even after major fire events in southern states, for example post Canberra fires only 2 participants;
- The average attendance was only 11 persons per session; and
- On average, there was a 9% take up on invitations to attend sessions.

Combined Presentations with Queensland Fire and Rescue Service and Brisbane City Council

Bushfire Blitz and Bushfire Prepared Communities are initiatives of the Queensland Fire and Rescue Service to which Brisbane City Council co-presented. In essence, the information provided at these events is very similar in style and content to what Brisbane City Council presented during the Bush Neighbour Program. The major difference is that the primary presenter is a fire officer from the Queensland Fire and Rescue Service complete with a big red fire truck. Features of the presentations include:

- They are targeted to high risk areas;
- They are cost effective through shared funding;
- There is a higher level of marketing;
- The big red truck marketing magnet;
- There are consistent messages from both agencies;
- They are generally better attended than the Bush Neighbour Program; and

- They are delivered off site, so examples are pictorial only.

Combined presentations with South East Queensland Fire and Biodiversity Consortium and Brisbane City Council
Brisbane City Council has a private property conservation program (Conservation Partnerships Program) where private land-holders can engage in conservation measures on their own land. To assist participants to manage their lands for sound ecological outcomes Brisbane City Council and the South East Queensland Fire and Biodiversity Consortium conduct detailed presentations on ecological fire management, property management planning and bushfire safety at a host participants home. Features of this approach include:

- It is targeted to private land holders involved with Brisbane City Council Conservation Partnerships Program;
- It is delivered on site at the private residence of a participant;
- It involves a substantial time commitment - a six hour workshop plus homework;
- It is very effective in terms of information and practical examples; and
- It focuses on property protection and biodiversity enhancement.

Bush Neighbour Schools Program

Brisbane City Council recognises that by providing children with sound environmental information not only helps them to develop their own good habits, but they also become powerful role models for their parents. This program is presented to schools by Brisbane City Council's Environment Centre staff and Conservation Rangers, in areas where the frequency of arson is high. Features of the Program are:

- It is targeted at Year 5 students;
- It is presented in school at no cost, outlining good and bad behaviour in bushland areas;
- It is followed by an interactive board game (reinforcement through fun);
- It builds relationships between school community and their neighbouring bushland and ranger staff; and
- It can generate spin off projects such as the development of native gardens within the school grounds to attract native wildlife.

Conclusion

A multi faceted approach seems to be successful, such as combining incidental contact with more formal approaches. By far the most successful approach in terms of attendance has been the combined Queensland Fire and Rescue Service and Brisbane City Council events. In terms of understanding the issues and following through with on ground action, the South East Queensland Fire and Biodiversity Consortium and Brisbane City Council events seem to have provided more positive outcomes. This is an area that could benefit from further research. It has been very difficult to engage with the community on this issue. The best results have been with the support of external agencies. Whilst there is no doubt that Brisbane City Council has the local knowledge, resources and expertise to conduct fire awareness activities, unfortunately there seems to be a disproportionate level of resistance from the community to accept the transfer of fire information from local government staff.

Summary

Since 1991, when Brisbane City Council first recognised it's responsibility for managing fire on it's fire prone estate, many issues have been, or are still being, worked through. The development of a fire management program (including a prescribed burn program), the resourcing of staff and infrastructure for fire management, addressing smoke management and raising the level of fire awareness across the wider population of Brisbane, are all issues that are constantly under review. The primary objectives of this review process are constant improvement and refinement of how Council manages it's estate. At no stage can this process ever be considered complete.