CHAPTER 11: BUSHFIRE RISKS

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The Bushfire Threat

Whilst bushfires in South-East Queensland have seldom been as severe as the worst fires that have occurred in the southern states, (such as the 'Ash Wednesday' fires that claimed 75 lives in South Australia and Victoria in 1983,) serious fires have occurred in the region during most months of the year. Contrary to the widely held belief, bushfires do destroy property (including urban property) and they do kill people in South-East Queensland.

The most notable events in recent years were the fires of September and November 1994 which burnt through more than 4800 ha of exotic pine plantation and destroyed both rural and urban property on the Sunshine Coast and in Caboolture, Pine Rivers, Brisbane and other local government areas. These fires also injured nine fire fighters, seven very seriously. More recently, some 2000 fires (90% of them deliberately lit) were reported throughout the region over a three week period in August-September 2000.

The increasing popularity of rural residential living and the preservation of natural areas within urban developments in South-East Queensland (so-called 'wildlife corridors') brings with it an increasing level of risk. These 'wildlife corridors', unless well managed can easily become 'wildfire corridors' under conducive fire conditions. Put simply, any patch of bush will burn, regardless of whether it is in a State Forest, National Park, in farmland, along creek lines or in a neighborhood playground – if the conditions are 'right' for a fire and a source of ignition is present.

The bushfire season for South-East Queensland typically extends from mid to late winter through to early summer. The greatest danger occurs in the period towards the end of winter and into spring, especially if a good summer 'wet' season which produced abundant growth of grass and other fuel, is followed by a winter of low rainfall and lengthy periods of dry westerly winds. The risk generally eases following the first rains of the spring thunderstorm season and is largely absent during the summer 'wet' season. The 'wet', however, produces the conditions for lush growth that will, by the following winter, provide the fuel for the next fire season – and so the cycle continues.

Unlike most of the other hazard phenomena dealt with in this study, with bushfires there is a clearly defined philosophy of responsibility, namely, that if you own the fuel, you own the fire. According to the 'basic philosophy of operation' of the Queensland Fire and Rescue Authority (QFRA) Rural Fire Service (Rural Fire, 1999):

> *Fire control is a property owner's responsibility, supported in an organised manner by the community through the Rural Fire Brigades.*

Queensland rural fire authorities (including Rural Fire Brigades, National Parks Service, Forestry Service and local governments) have always supported a regime of fuel management in bush areas under a system of permits issued by local Fire Wardens. These permits are aimed at:

> *encouraging hazard reduction burning through the provision of legal protection for responsible users of fire and punitive action for irresponsible users*. (Rural Fire, 1999)

In the urban-rural interface areas that make up much of the South-East Queensland study area, however, until the destructive fires of 1994, there had been significant pressure to minimise, if not curtail, hazard reduction burning activities. These pressures came largely from lobby groups including environmentalists (who argued that any fire was destructive) and those whose medical conditions could be aggravated by the smoke from fuel

reduction burn-offs. Since those fires (and the fatal fires in NSW earlier in that same year), however, there has been significantly less resistance and hazard reduction practices are widely followed throughout the region.

The Bushfire Phenomenon

For a bushfire to start and to be sustained, three things are needed:

- there must be fuel available to burn;
- there must be sufficient heat to cause and maintain ignition; and,
- there must be sufficient oxygen to sustain combustion.

If any one of these is absent or inadequate the fire will either not start in the first place, or will not spread.

The fuel for a bushfire is made up of the available vegetation, together with any other combustible materials, (such as houses,) that become involved. Most of the natural vegetation communities of the region are 'fire climax' types that have evolved to the point where they rely, to varying degrees, on fire for regeneration. These include the various eucalypt-dominated forests and woodlands, as well as the *walum* heathlands and *Melaleuca*-dominated wetlands. These vegetation types and their distribution throughout the region are well described in Poole and others (1996). Cultivation, including pasture, tree crops and exotic pine plantations, are also significant sources of fuel.

The heat needed to start a bushfire can be provided by something as simple as a match or cigarette butt, or by something as dramatic as a lightning stroke. Of course, the higher the atmospheric temperature is in the first place, the easier it is for these sources to get things going. In the South-East Queensland region, in spite of its reputation for spectacular thunderstorms (see Chapter 6), the vast majority of bushfires are started either by human carelessness (e.g. a discarded cigarette butt or a poorly supervised burn-off) or human stupidity and wanton criminality (the deliberately lit fire e.g. by bored children or by car thieves disposing of stolen cars by setting them alight in bushland). Once the bushfire is established it generates its own heat.

The oxygen required for combustion is provided by the atmosphere and is constantly being replenished by the winds, either created by the fire itself, or by the atmospheric winds. Higher winds mean more oxygen and more intense flames.

The intensity of a bushfire, and thus its destructive potential, is determined by three factors that are related to these three basic elements. The first is heat yield. The heat yield of most native vegetation types in Australia is extremely high. Eucalypt trees and regrowth scrub, the *Melaleucas* of the wetlands, the *Banksia* and other species of the *walum* heath, and the exotic pines of the plantations, all produce naturally volatile substances. These fuels invariably produce more intense fires and yield more heat than does grass. The greater heat energy released by scrub and forest fires make them potentially more damaging to houses and other buildings than are grass fires. They also produce airborne embers and firebrands which can start spot fires well ahead of the fire front. Grass fires, by comparison, consume the available fuel much more quickly and produce few embers.

The second factor is the rate of spread. This can be influenced by two main conditions – terrain and weather. Fires burn more rapidly and with greater intensity on up-slopes than they do on down-slopes or on the flat. Generally, the steeper the up-slope, the greater the speed and intensity of the fire. Rising temperatures and wind velocities, and decreasing humidity, directly contribute to an increase in both the rate of fire spread and its intensity. As fuels dry out, ignition becomes easier and the rate of spread increases. Winds can also assist the spread of fire by carrying heat and burning embers to new fuels (causing spot fires ahead of the fire front) and by bending the flames closer to unburned fuels ahead of the fire. Doubling the wind speed will quadruple

the rate of spread of the fire.

Preliminary findings from *Project Vesta*, a joint CSIRO – WA Department of Conservation and Land Management research program, indicate that fire spread can be significantly greater than previously estimated where there is a developed shrub layer that is taller than one metre, and where wind speed exceeds 15 km/hour. There appears to be a wind speed threshold at around 12 to 15 km/h, below which fire can spread relatively slowly, but a slight increase in wind speed can result in large increases in the rate of fire spread . It has also been found that wind speeds within forest areas can be highly variable, giving rise to significant variability in fire spread rates (CSIRO, 2000).

Hot, dry air can lower the moisture content of forests and grasslands to around 5% (and in extreme cases to 2-3%,) greatly increasing the spread of fire. The worst fire weather conditions in South-East Queensland (high temperatures, low humidity and strong winds) tend to occur when deep low pressure systems develop over southern Australia, bringing strong dry westerly winds from the continental interior to the coast. This was the situation during the major fires of November 1994 and again in August-September 2000.

The third factor is the amount and nature of the fuel available. This can be influenced by the nature of the preceding growth season – a wet summer will give rise to much more growth than will a dry summer; the length of time since the area was last burnt (either by a previous bushfire or by fuel reduction burning); and by other land management practices such as cultivation, slashing, irrigation and so on.

It should be recognised that under some situations, the intensity of a bushfire can reach such a level that it simply can not be put out by currently available or practical suppression measures. Fire authorities in Australia acknowledge that this situation is unlikely to change in the foreseeable future.

The South-East Queensland Bushfire Experience

The history of bushfires in South-East Queensland has, until very recently, been poorly recorded. It is clear, however, that they are not just a recent phenomenon. For example, according to extracts from the records of the Caboolture Divisional Board, in 1883 a Mr. Walsh of Humpy Bong (i.e. Redcliffe) threatened to 'expose' the Board through the press, complaining of the danger of trees falling across the road due to bushfires, one tree having already fallen on his horses (CSC, 1979). These extracts also record the payment of 10/- to a Mrs. William Grigor of Glasshouse Mountains in 1898 for extinguishing fires on bridges in the area.

The most complete record of bushfires in South-East Queensland has been compiled by Tania Philips, the Community Awareness Officer in the Rural Fires Division of QFRA. Table 11.1 is based on the records she has made available.

Table 11. 1 Major bushfire seasons in South-East Queensland 1926-2000

Season	Remarks
1926	Extensive fires destroyed forests, farms, sugarcane, banana plantations and dwellings through the south-east corner of the State.
1929/30	37 fires investigated throughout the State.
1944/47	No records available
1957/58	Severe fire season during late 1957, early 1958. Dry conditions, lots of fires throughout the State. No detailed reports of large fires recorded.
1964/65	Large fire on Fraser Island burnt out 32 800 ha.
1968/69	Moderate to severe fire season with major fires occurring at - 1. 19/11/1968 - Brookfield fire threatened the western suburbs of Brisbane, eventually destroying 12 000 ha of forest and grassland. 2. Forestry personnel attended 326 fires which burnt 125 700 ha of forest and other property.
1976/77	September 1976. Major fires burnt a total of 600 000 ha in the South Burnett, Nanango and Brisbane areas.
1977/78	9/77 A.P.M. Pine Plantation at Petrie fire destroyed 300 ha pine forest and 350 ha native forest.
1981/82	Moderate to severe fire season recorded with major wildfires occurring at - 1. Springbrook, Beechmont, Lower Beechmont areas September 1981. 2. Severe fires on Moreton, Stradbroke and Macleay Islands during August-October.
1986/87	A moderate fire season with large fires occurring in the Mt. Glorious, Mt. Nebo and Noosa areas.
1991/92	A severe to extreme fire season with large fires occurring in the Sunshine Coast Hinterland (Bald Knob, Landsborough, Mapleton) which claimed the life of a volunteer fire fighter on 10/9/1991 at Palmwoods. Extreme fires in Gold Coast hinterland. At Mt. Tamborine fire destroyed three houses and claimed the life of one civilian (Sept 1991).
1992/93	Moderate fire season with major fires destroying four houses and several vehicles in the Coominya rural-residential area near Esk.. 40 000 ha burnt in Esk Shire.
1993/94	Jan. 1994 4000 ha burnt at Mount Glorious, Wivenhoe area and fires threatened Mount Nebo township and community.
1994/95	Severe fire season . 682 major fires occurred across the State in September and November. Major outbreaks occurred on 27-29 September and again on 4-7 November. Twenty three houses were destroyed, as well as farm building, fences and livestock. 3000 people were evacuated from their homes. Beerburrum State Forest suffered huge losses of plantation timber. Nine volunteer fire fighters were injured, with seven 7 suffering extensive burns, north of Caboolture.
1995/96	During November and December fires threatened homes in South-East Queensland. One house lost near Ravensbourne and $3m worth of pine forest destroyed.
2000/2001	August 2000 Hundreds of bushfires occurred in South-East Queensland (majority deliberately lit). Three buildings, two caravans and a vehicle lost.

Certainly the most extensive and severe fires in recent times were those on September and November 1994. The destruction wrought by these fires on Bribie Island during these fires is illustrated in Figures 11.1 and 11.2. It is worth noting that the vegetation that burnt was tall *Banksia*-dominated *walum* that had not been burnt for many years. Apart from the abundant and well cured ground litter fuel, most species in this vegetation form will burn well, even when green, because of the volatile oils contained in their leaves.

Figure 11. 1 Extent of bushfire damage on Bribie Island, November 1994 (CSC Photo).

Figure 11. 2 Detail of the November 1994 Bribie Island fire damage at Woorim (CSC photo).

The fires were extremely intense and moved very quickly. They left behind them only bare sand and white

ash. Fortunately only a few old sheds and fences were destroyed. Only limited damage was done to a few houses and gardens on the bush interface. The contrast between the green (non-flammable) and mown grass on the Bribie Island Golf Course and the devastation of the surrounding bush can clearly be seen in Figure 11.2.

Even with the incomplete record provided in Table 11.1, the ARI of significant bushfire episodes in South-East Queensland is approximately five years.

Bushfire Risks

In the context of this study, which has an emphasis on the urban environment, the primary risks posed by bushfires are to those areas on the urban fringe, or at the interface between the 'bush' and built up areas. The key risk is to buildings and to those elements of infrastructure that are either flammable (e.g. timber power poles and wooden bridges) or susceptible to the heat generated by bushfires (e.g. power supply switching gear and electronic equipment). People are also at significant risk, especially if they are caught in the open or in vehicles that are inadequately protected. This is a particular risk where rapid shifts in wind direction and speed cause the fire to change direction and speed without warning.

When considering the risk to people, the risks faced by fire fighters, most of whom are volunteers, should not be overlooked. This risk was highlighted recently by the deaths of several fire fighters in other states and the serious injuries suffered by nine volunteer fire fighters near Beerwah (the so-called 'Bell's Creek fire') in November 1994. These fatalities and serious injuries can, in virtually all instances, be attributed to a lack of appropriate hazard mitigation (i.e. fuel reduction) prior to the dangerous fire conditions occurring.

There are four main mechanisms by which bushfires cause damage. The first, and most obvious, is direct exposure to flames. Exposure to flames is typically only a threat where vegetation or other fuel is allowed to accumulate under, against, or on the exposed building. Similarly with infrastructure elements, fuel must be present close to the pole, bridge timbers and so on, for it to be affected directly by flames.

The second mechanism is burning debris. Buildings are at risk from wind-blown sparks and embers that can be carried significant distances from the fire front. They can also be propelled at great speed by the strong winds generated by the fire and be of a size large enough to smash unprotected windows. Sparks and embers can enter the building through openings such as open or broken windows or unlined eaves, thus introducing a source of ignition to the interior of the building. Sparks can start small fires in curtains, carpets and other interior furnishings. These can develop rapidly and destroy the building from the inside. Similarly, sparks can lodge in combustible material close to, on the roof of, or even under the building, thus causing exterior fires that can quickly envelop the building.

The third mechanism is radiant heat. Bushfires generate extreme heat levels at their active front. As the fire travels forward, this extreme heat lasts for only a few minutes, however, it is sufficient to fracture glass or cause combustible items inside the building, such as fabric and paper, to burst into flame. Radiant heat is also a significant threat to heat-sensitive power supply and other electronic equipment.

The fourth mechanism is the strong winds generated by the fire. Wind speeds in excess of 42 m/s (120 km/h) can be experienced in fires. This is somewhat greater than the wind loading standard applicable to most urban buildings in South-East Queensland (mostly 30 m/s). Such winds can cause direct damage, e.g. by unroofing buildings; it can cause impact damage by propelling debris, including burning debris, at considerable velocity; trees or power poles may be toppled , especially if weakened by the fire.

A significant secondary bushfire hazard is smoke. Fire smoke can produce direct physical effects on people,

especially in those with respiratory illnesses such as asthma and emphysema, as well as psychological effects. Stress and anxiety levels in many people can be raised simply by the smell of fire smoke on the air. Smoke can also reduce visibility to the extent that roads, and even airports, may need to be closed temporarily.

There is perhaps a perception that only buildings in rural areas are at risk from bushfires. There is little doubt that they make up the bulk of buildings destroyed, however, buildings in urban areas are also at risk – as was demonstrated on Bribie Island and elsewhere during the 1994 fires. Ahern and Chladil (1999), using data from three severe historic fires in which urban houses were destroyed (the 1967 'Black Tuesday' fires in Hobart, the 'Ash Wednesday' fires in the Otway area of Victoria in 1983 and the Como-Jannali fires in NSW of 1994), have calculated that 95% of all urban buildings destroyed in bushfires were within 100 m of the bush interface. Buildings destroyed beyond that range were almost universally victims of ember spotting. The greatest distance recorded (in the 1967 Hobart fires) was 684 m from the vegetation boundary. Ahern and Chladil observe:

> *Consider also, the case of common suburban lot dimensions. Assuming an average lot depth of 40m, we can account for about 64% of all houses burnt* [as] *actually being adjacent to the vegetation boundary. If one allows 30m for a road reservation we are 70m from the vegetation boundary and have accounted for about 75% of all burnt houses. Only 13% of all houses burnt were beyond a distance equivalent to a house lot, a road reservation and another house lot.*

It should be noted that 'vegetation boundary' relates to 'bush' rather than grassland vegetation.

The potential for bushfire spread has, since the 1960's, been measured using the various versions of the McArthur Forest Fire Danger Meter and the McArthur Grassland Fire Danger Meter. The 'fire danger', based on input including weather variables and fuel variables, is rated from low to extreme. These ratings form the basis for public warnings and govern the introduction of fire bans and other restrictions on the use of fire.

Under the *Queensland Building Act*, which calls up the Building Code of Australia, all buildings constructed since 1993 in those areas so designated by each local government authority as being bushfire prone, must comply with standard AS 3959-1991 *Construction of buildings in bushfire-prone areas* (Standards Australia, 1991). AS 3959-1991 specifies only minimum standards that are intended to improve the performance of buildings against burning debris. Other passive risk reduction measures, such as correct siting of the building, the provision of suitable landscaping to act as a barrier to the oncoming fire, and the protection of windows, should also be considered. Guidance on the siting and design of residential buildings in bushfire prone areas of Queensland is provided in DHLGP & QFS (undated).

More recently, a national position on development and building in bushfire prone areas has been developed. The relevant codes and standards to give effect to this agreed position will be published in late 2001. The objective is to produce developments that are designed to minimise the impact of bushfire on the community and the built environment. They will be performance-based and allow for regional variation. Risk reduction will be achieved by limiting development to areas with 'acceptable bushfire risk' and by imposing standards which embrace the survivability of structures and their occupants if subject to bushfire attack. Included will be the concept of 'defensible space' which aims to maximize the opportunity for interventions by property owners and suppression agencies to further improve survivability of structures and their occupants.

Guidelines have also been published that are designed to assist local governments identify those areas under their jurisdiction that are bushfire prone, and consequently subject to the provisions of the Building Code; and to establish standards for the planning of subdivisions in bushfire prone areas (QFRA,1998). These guidelines encourage local governments to prepare fire hazard maps based on 'fire loading factors' derived from an assessment of the topography, aspect, fire history and vegetation cover of the area. Fire hazard mapping, employing the recommended fire loading factor methodology has been undertaken by the Rural Fire

Service using GIS. This data has been kindly made available to this study and the mapping of South-East Queensland is shown in Figure 11.3.

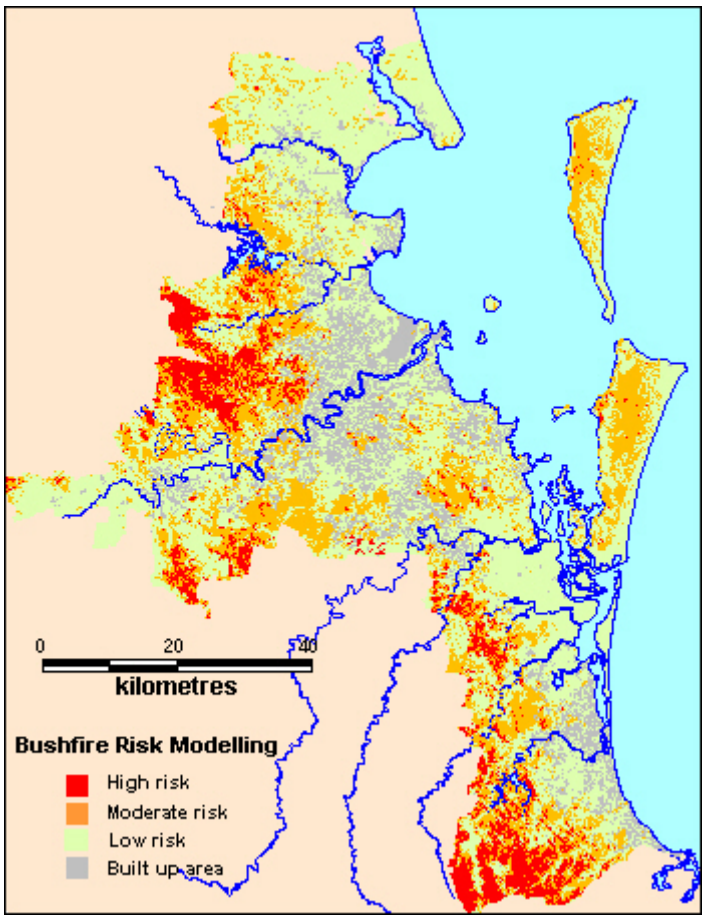

Figure 11. 3 South-East Queensland fire loading factor zonation

It must be emphasized that this mapping does **not** show where bushfires can occur, but rather it shows those areas in which the hazard is sufficiently great to require specific risk reduction strategies, such as the construction of fire breaks, the siting and construction of roads to avoid cul-de-sacs, and the stipulation of minimum domestic water storage requirements, to be required as part of the subdivisional siting and planning process.

Excluding the urban built-up areas and the road network, approximately 3850 sq km of the South-East Queensland study area (or 75% of the total) could be subject to bushfire, simply because it is under vegetation. The study area, however, contains 195 sq km of high loading factor and 505 sq km of medium loading factor land classified under the Rural Fire Service mapping. This represents 3.8% and 9.7% respectively of the total study area. A number of suburban areas and rural villages lie within, or abut, areas classified as having at least a medium fire loading factor and several rural villages. The edges of these areas at least have a significant exposure to bush fire.

These risks can, to a degree, be balanced by the provision of fire services. These are provided either by rural brigades, urban brigades or by other agencies such as the Forest Service (in State Forests) and National Parks Service (in National Parks). Figure 11.4 shows the boundaries of the areas covered by rural and urban fire brigades in the study area. There are 38 rural brigades that are cover land within the region.

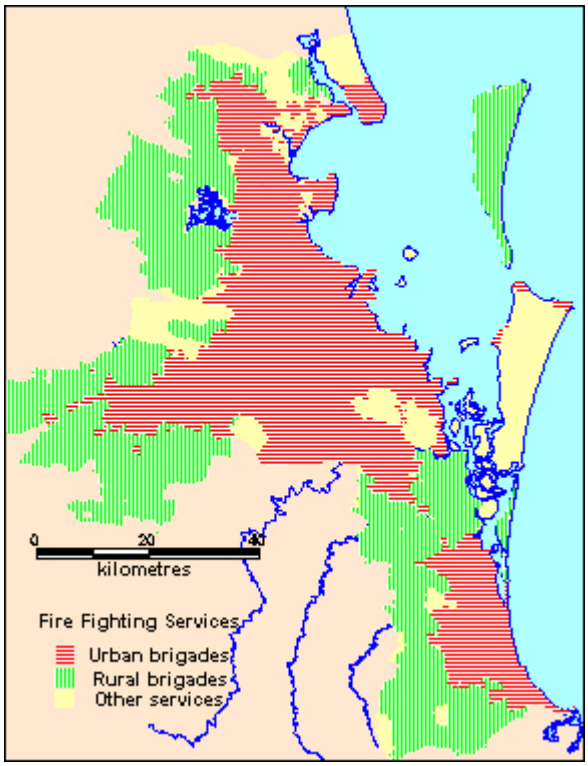

Figure 11. 4 South-East Queensland fire suppression agencies

The management of fuel reduction is underpinned by a predominantly volunteer network of fire wardens. Their role is to manage the Permit to Light Fire system. Fire wardens are regarded as the pre-fire experts and the objective of the permit system is to promote the responsible use of fire as a land management and hazard reduction tool. The universal application of this system throughout Queensland provides the legal mechanism by which to substantially control ignition from man made sources

The role of the fire warden is to consider applications for Permits to Light Fire and issue, or refuse to issue, permits. Permits issued are conditional in that they require the permittee to ensure that fire is used and maintained in a safe and responsible manner. An added incentive for compliance with the permit system is the provision of relief from civil liability to permittees. Permits may also be issued by urban brigades of the QFRS.

Support for rural brigades in LGA such as Caboolture, Pine Rivers and Gold Coast includes collecting the rural fire service levy that is rated at a level recommended by the rural brigades. Some councils also provide funds to assist with administration of their local Rural Fire Brigade Groups and the purchased numerous water supply tanks in areas with identified need. During bushfires council also provide water tankers and earthmoving equipment to assist in suppression activities.

Interpretation

The experience of the 1994 and 2000 fires should have removed any illusions that bushfire is not a serious threat in South-East Queensland. Those fires came very close to having a destructive, and potentially fatal, impact on urban areas, especially in the hinterland areas. The major threat, none the less, remains in the rural and rural fringe areas, including rural villages such Springbrook, Mount Glorious and Mount Nebo.

The fuel management regime and other mitigation measures undertaken by LGAs and other agencies since 1994 certainly proved to have been effective during the more recent episode of rural fires in August - September 2000.

There are no appropriate statistics available by which to measure bushfire total risk.

Community Awareness

In spite of the experience of the widespread fires in the region in 1994, and the spate of fires in September 2000, there appears to be a persistent view in the community at large that South-East Queensland does not have a significant bushfire risk. There seems to be many reasons for this false perception, not least of which is the view that South-East Queensland is 'too wet' for serious fires, that bushfires are only a problem in the southern states such as Victoria, or that bushfires only occur in rural areas.

Even amongst people in the higher risk urban fringe areas, there has been a general decline in experience and knowledge of bushfire and fuel management. The popularity of rural residential development and the increased number of properties now managed by 'weekend' farmers has taken large areas rural land out of ongoing management. Many residents of these areas also have a strong attachment to what they see as the 'natural' environment. One outcome of these changes in land use and land management has been that regrowth, scrub and litter fuels are allowed to build up in a haphazard manner – often because of the landholder's mistaken view that the use of fire as a land management tool is 'wrong', even 'environmental vandalism'.

Perhaps as potentially dangerous is a general lack of awareness as to what to do should a bushfire threaten especially in urban/rural interface areas. A common (and natural) response is to flee or, in the case of most police officers, to order people to evacuate their homes. Experience in South-East Queensland and elsewhere has shown repeatedly that this type of response increases the risk of both fatalities (people caught in the open or in their cars during an evacuation) and the loss of property (if there is nobody there to douse small spot fires in or around the house before they grow to an uncontrollable degree).

Rural fire brigade volunteers throughout the rural areas, however, play an important part in educating and assisting people in these areas, whilst some councils are taking an active part in requiring landholders to better manage potential bushfire fuel loads..

Forecasting and Warnings

The fire danger rating system in common use throughout eastern Australia has come to be known as the McArthur Fire Danger Rating System after the late A.G. McArthur who developed the system. The McArthur Fire Danger Rating System is based on a large amount of experimental work that has been carried out over the years and continues to be revised and refined through ongoing research. The system provides a means of estimating fire behaviour across a wide range of common fuel types and is currently available in both circular slide rule and electronic forms. They integrate the combined effects of fuel moisture content and wind velocity to calculate a basic fire danger index. The resultant indices can be related to fuel quantity and slope to predict head fire spread rates and other fire behaviour characteristics such as flame heights and spotting potential.

The indices are also directly related to rates of forward spread on a scale of 1 to 100. An index of 100 represents the near-worst possible fire weather conditions that are likely to be experienced in Australia. They are also divided into five fire danger classifications of low, moderate, high, very high and extreme. The index number is directly related to rate of spread, ignition probability and suppression difficulty. At an index of 1

fires are virtually self-extinguishing, whilst at an index of 100 fires will burn so rapidly and intensely that control is virtually impossible.

When fire danger conditions are expected to become very high to extreme, corresponding to a Fire Danger Index of 40 or above on the McArthur Mark IV Grassland Fire Danger Meter, the Bureau of Meteorology issues Fire Weather Warnings. Warnings are broadcast to the general public via radio and television. Fire authorities will respond as required when Fire Weather Warnings are received and in most instances implement fire restrictions over the affected region.

The Bureau of Meteorology issues fire weather forecasts for South-East Queensland each day throughout the fire season. These forecast contain information about expected temperatures, atmospheric moisture, wind speeds and direction and the corresponding fire danger rating for the following three days. During an ongoing major fire event, the Bureau of Meteorology issues special spot forecasts detailing current and expected conditions in the area of the fire.

Recent developments in the use of AVHRR satellite imagery and its analysis have enabled the development of map products that provide information about the quantity, condition and distribution of available fuel across Queensland. This information is now available on the rural fire service website (www.ruralfire.qld.gov.au) and is a valuable tool for planning and monitoring fire management, particularly in broad acre areas.

Further Information

More detailed information on the levels of exposure of individual neighborhoods or properties to the various bushfire risks outlined here should be referred to the QFRA or respective local government council.