



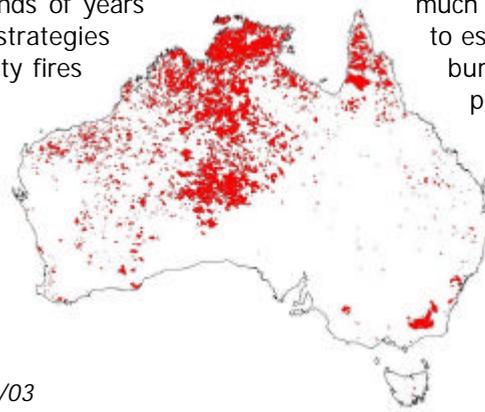
**NORTHERN TERRITORY
FIRE AND RESCUE SERVICE**

**BUSHFIRE MANAGEMENT
AND MITIGATION**

AN OVERVIEW

Introduction

Since time began fire has played a major role in shaping the unique environment of the Northern Territory. Over thousands of years fauna has developed amazing strategies a regime of frequent low intensity fires landscape. For many years the have also accepted and adapted intensity fires.



much of our flora and to escape or adapt to burning across our people of the NT to frequent low

Fire scar map for 2002/03

The Northern Territory Fire and Rescue Service has also adapted well to this fire regime. Equipment, fire fighting practices, policies and procedures were all designed to combat these low intensity fires.

The Northern Territory Fire and Rescue Service has legislated responsibility for bush fire emergency response and mitigation within designated Emergency Response Areas (ERA's) located within the Northern Territory's cities, larger towns and the surrounding rural/urban interface.

Although the landscape, biodiversity and climatic conditions differ considerably between NTFRS northern and southern regions, the NTFRS strategic direction for bush fire fighting management and mitigation are similar throughout the NT.

The natural bush within the NTFRS top end ERA's is predominantly tropical savanna, grasslands and light eucalypt forest with fuel loads on average at 4 to 5 tonnes per hectare. Regrowth after fires is vigorous due to high rainfall and therefore it is not uncommon for land to sustain fire on an annual basis.

The Alice Springs region is typical semi arid with spinifex and other arid region grasses making up the majority of fuel load. On average fuel load in the Alice region are around 2 to 3 tonnes per hectare however areas unburnt for many years can reach up to 4 tonnes per hectare. Regrowth after fire is dependent on rainfall but generally slow in comparison with the top end.

Darwin ERA fuel load 4-5 t/ha



Alice Springs ERA fuel load 2-3 t/ha



Risk Evaluation and Management

Bushfire prone areas within the NTFRS top end ERA's are basically the low land swampy corridors unsuitable for development while in southern ERA's it is the hilly and rocky corridors left by development of the low lands. Bushfire prone areas in the rural/urban interface in both the top end and the southern regions are predominantly large undeveloped parcels of land surrounding the sprawl of small hobby farms.

Many of these fire prone areas are environmentally sensitive and difficult to access for fire fighting purposes. To compound the problems of accessibility, many fire breaks constructed on the edge of top end developments have become infested with exotic grasses such as Gamba and Mission grass. In the southern regions the introduction of Buffel and Couch grass have greatly increased the risk to property owners and fire fighters. These introduced grasses can increase the fuel loads by 4 to 5 times the regions natural fuel loads. Windrows along fire breaks are often the highest fuel loads.

The major risk from bushfires within NTFRS ERA's is the hobby farms located in the rural/urban interface. Property loss is generally restricted to orchard trees and equipment and the odd shed. It is a very rare event for buildings to be lost to bushfire. The recent loss of a luxury hotel complex in Yulara was very much an exceptional event.

Farm shed Darwin rural/urban interface



Luxury resort Yulara



Environmental loss is considered secondary although public interest is indicating a need for the NTFRS to have a stronger focus on protection of environmentally sensitive areas.

Management of bush fire risk has become a very high focus for the NTFRS. The NTFRS utilises fire scar mapping, where available, and local knowledge to develop fire management plans for each ERA. The plans identify brigade response areas, high risk properties that may have high fuel load or are subject to annual burning. The plans also identify areas suitable for mitigation work such as prescribed burning and installation of additional fire breaks.

The enforcement of legislation has also become a very powerful mitigation tool. The Fire and Emergency Act requires that all landowners are to install fire breaks/access trails which significantly enhance fire control and reduces the risk to fire fighters. The Fire and Emergency Act also provides for infringement notices to be issued to non compliant landowners however very few infringement notices are actually served.

Liaison with the land owners followed by a formal letter from the NTFRS stating the legislative requirements and threatening a \$300 fine for non compliance is usually all that is required. Legislation also provides for the recovery of all costs associated with fire fighting on land that has not complied with the requirements of the *Fire and Emergency Act*.

Increased fire breaks/access trails and prescribed burning on Crown land has also reduced the threat from bushfires within all NTFRS emergency response areas. The Crown is very aware of the potential for litigation should a fire that started on Crown land escape onto neighbouring properties.

There are always exceptions to the rule as depicted recently within the Yulara ERA. Attempts by the NTFRS to introduce mitigation practices into this tourist focused ERA were not successful due to the resort management preferring to promote the biodiversity rather than undertake mitigation practices. The loss from bushfire of a 4 million dollar luxury hotel complex has encouraged the resort management to review their approach to mitigation.

Prescribed burning



Legislation enforcement



Education, Understanding and Attitudes

The employment of a full time Hazard Abatement Officer has greatly increased the knowledge of landowners with respect to bushfire management within NTFRS ERA's. The Hazard Abatement officer is responsible for coordinating bushfire awareness programs often in conjunction with the Bushfires Council NT (BFC), firebreak inspections and fuel reduction burning throughout the NT.

Although most Territorians accept bushfire as a common event landowners that lose property to bushfires are quick to look for blame. There is a growing trend toward seeking compensation for loss resulting from bushfire. Fire agencies now find they have to defend their actions or lack of. Fire cause is often not clearly obvious. This presents a challenge for fire agencies as highly skilled bushfire investigators are few and far between.

NTFRS ERA's are generally highly populated in comparison with the rest of the NT. A combination of the lack of obvious cause at the point of origin, outdoor lifestyle of most Territorians and the cultural acceptance of fire lighting by indigenous Territorians leads the NTFRS to the opinion that most bushfires are the result of deliberate or careless acts by humans.

Balance Between Mitigation and Management

Prior to 1996 the NTFRS had little involvement in bushfire mitigation. In fact the catch cry of the NTFRS was at one time *"We are fire fighters not fire lighters"*. This attitude basically stemmed from a lack of knowledge. Today the NTFRS recognises the value of mitigation and has allocated considerable resources to bush fire prevention. Although the number of bushfires occurring in all ERA's has not decreased over the long term the severity of bushfires certainly has. Crews now no longer chase bushfires from one end of their ERA to the other. This is particularly valuable for volunteers who try to balance full time employment with volunteer fire fighting.

Statistics show that volunteers now spend 15% of their total brigade time carrying out mitigation programs. Although this represents a considerable increase in time spent on mitigation there is a corresponding increase in time spent in training and emergency response to incidents other than bushfires.

Organisation and Use of Suppression Resources

During the 2002/03 reporting period the NTFRS urban based brigades responded to a total of 2137 grass and bushfires. Many of these are small grass fires on vacant lots and road verges in urban areas. This equates to a 39% reduction in bushfires within NTFRS ERA's on the previous reporting period. Although the significant decline in the number of responses to bushfires, the total number of calls to bushfires for 2002/03 equates to an average year over the long term.

Volunteers in the smaller towns and the Darwin and Alice Springs rural/urban interface responded to a total of 460 bush fires.

The NTFRS business plan 2001/05 output 1.1 identifies the need to *"Minimise the impact of emergency incidents on our community and the environment"*. To achieve this output the NT Government has allocated considerable resources.

The NTFRS has 155 full time, 54 auxiliary and 240 volunteer fire fighters. Volunteer brigades continue to provide a valuable resource for bush fire response and mitigation. Volunteer numbers have remained fairly static at around 240 volunteers across the NT with "word of mouth" by local volunteers still the primary means of recruitment.

Training of volunteers has also increased with all volunteers achieving competencies in bushfire fighting through courses run by the BFCNT. The NTFRS has also expanded it's reporting of information and data from volunteer brigades.

Equipment primarily for bushfire fighting includes 14 x 3000 litre tankers and 16 x 800 litre 4x4 grassfire units for quick response and access to difficult terrain. The NTFRS has recently begun relocating bushfire appliances between Darwin and Alice Springs ERA's to match the seasonal fire threats. This strategy is limited as volunteer brigade appliances are required to enable response to incidents other than bushfires.

3000 litre tanker



800 litre quick response grassfire unit



Inter- Jurisdictional Cooperation

The *Fire and Emergency Act* provides for the Director of Fire and Emergency Services to make provisions for effective cooperation with the BFCNT. The Director holds a position on the Bushfire Council.

The NTFRS and the BFCNT have a mutual aid agreement in place that enables quick response to calls for assistance. This cooperative approach is only utilised in the rural/urban interface of cities and towns and has not yet been extended to include combating very large fires in remote Bushfire Council regions. In many areas volunteer brigades have developed close working relationships and share resources for mitigation and combating bushfires.

Scientific Knowledge and Understanding

The NTFRS does not have a dedicated bushfire research capability. It does however have close relations with research organisations such as CSIRO. As a result of extensive research by CSIRO and other scientific organisations and with the assistance of the BFCNT, the NTFRS has obtained the necessary understanding of bushfire in the NT environment to develop policies and strategies that balance a strong bushfire emergency response capability with pro-active bushfire prevention practices.

Conclusion

Since 1996 the NTFRS has come a long way toward better understanding and management of the bushfire threat. Bush fire mitigation is now a major function of the NTFRS. Bushfire awareness programs, enforcement of legislation and prescribed burning have all contributed to a reduced risk to both land owners and fire fighters.

The very nature of the bushfire regime in the NT dictates that effective emergency response to bushfires will always be required. The NTFRS has vast experience and very effective methods for fighting fires in mainly grassland environments. The high rate of fire lighting in the NT combined with the often tinder dry conditions of the bush will unfortunately continue to see much of the NT burnt on an annual basis.

Although the NTFRS and the BFCNT are at this moment separate agencies, both face similar challenges in relation to limited resources and greater expectation from landowners. There is little doubt that through continued cooperation many of these challenges can be overcome.