

NORTHERN TERRITORY SUPPLEMENTARY SUBMISSION

SENATE INQUIRY *Lessons to be learned in relation to the preparation and planning for, response to and recovery efforts following the 2019-20 Australian bushfire season*

Seasonal differences between the Northern Territory (NT) and Australia's southern jurisdictions result in bushfire seasons occurring at different times of the year. The major period of bushfire risk in the NT coincides with the dry season, which occurs in tropical savannah landscapes of the northern part of the NT between May and October. Accordingly, where the Inquiry relates specifically to the 2019-20 Australian bushfire season, this submission relates to the 2019 bushfire season in the NT.

Hazard Reduction

The great majority of bushfire hazard reduction in the NT's tropical savannah landscapes is achieved through planned fuel reduction burning. Weather patterns in these areas lead to consistent annual cycles of vegetation growth. Wet season rains support extensive growth of native grasses that cure rapidly and provide the major part of bushfire fuel loads. In recent decades, bushfire risk has greatly increased in some areas as a result of the spread of exotic grasses such as gamba grass.

Early season burning of cured native grasses has been undertaken extensively in the northern part of the NT for millennia. Following European settlement and the displacement of many traditional owners, the effectiveness of these practices was soon recognised by the settlers. In recent years between 20% and 30% of land in the top end of the NT has been subject to planned fuel reduction burning in the early dry season. Planned burning has always been an important land management tool in the NT and there is no reason to expect that this will not continue. There is potential to refine and improve fuel reduction burning strategies for different vegetation and landscapes and further research in this area would be welcomed.

Fuel loads in areas of gamba grass infestation are typically three to five times greater than fuel loads generated by native grasses. Gamba grass cures a great deal more slowly than native grasses, and therefore does not become available for hazard reduction burning until much later in the dry season when weather conditions are often not conducive to safe conduct of planned burning. Gamba grass fuelled fires in the late dry season are typically very hot and fast moving; traditional ground based firefighting techniques are ineffective and aerial firefighting resources are required to combat these fires safely. The NT Government (NTG) is implementing policies and programs to control the spread and reduce the risk posed by gamba grass. Management of gamba grass is an important component of hazard reduction in the northwest top end of the NT.

The legislative framework for bushfire management in the NT is provided in the *Bushfires Management Act 2016* (The Act). The Act does not set out to unnecessarily limit the use of planned burning as a land and fire management tool. In most areas, during appropriate seasonal conditions, the Act allows a land owner or manager to undertake hazard reduction burning providing that they contain the burning within their own land.

During periods of increased fire risk, usually during the latter part of the fire season, the declaration of a fire danger period in a fire danger area invokes a requirement to obtain a permit to burn before using fire. This does not prevent hazard reduction burning; the issuing

of a permit will require a land owner to show that sufficient resources and capacity are available to manage burning in the prevailing conditions. In peri urban areas, and other areas of more intensive rural development, the ongoing establishment of a fire protection zone invokes a year round requirement to obtain a permit before burning. There is also a year round requirement to obtain a permit before undertaking burning using aerial incendiary delivery.

The Act also requires that the owner or manager of land in a fire protection zone must install and maintain firebreaks around the perimeter of the land and around buildings and infrastructure on the land. Firebreaks must be at least four metres wide. Authorised officers inspect up to 7000 properties each year and enforce the installation and maintenance of firebreaks. Firebreaks contribute significantly to hazard reduction by providing safe access and escape routes, and potential control lines, for use during firefighting operations.

Around 48% of land in the NT is Aboriginal Land granted under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Commonwealth). Planned burning is an important component of Indigenous land management practice; land management is seen as a land custodianship responsibility, undertaken to maintain the health of country. Burning is undertaken at different times to achieve a range of outcomes including; management of vegetation, protection of habitat and biodiversity, protection of cultural sites and activities, to facilitate harvesting of natural resources, and to enhance community safety.

Following many decades of depopulation and dwindling capacity to maintain land management practices across much of the land that has subsequently been returned to traditional ownership, since the 1990s there has been a strong movement towards re-establishing management arrangements on much of that land. Traditional owners have worked extensively with researchers to develop land management regimes that prevent the late season destructive bushfires that were prevalent in many areas during the latter part of the last century. Traditional land management practices incorporated extensive early dry season burning which has the effect of reducing fuel loads and preventing destructive late season fires.

A significant proportion of Aboriginal Land in the top end of the NT is now hosting greenhouse gas emissions abatement projects. These projects are able to produce and sell carbon credit units and are now estimated to be generating over \$10M per year from carbon credit sales. The majority of this income is directed to supporting land and fire management activities. The largest projects currently operating are within Arnhem Land and the fire management outcomes are clear. The incidence of late season destructive fires has been greatly reduced across the project areas, and the significant emissions related environmental benefits have been complemented with improvements in biodiversity and clear social, cultural and economic benefits flowing to nearby remote communities.

The beneficial fire management outcomes associated with emissions abatement projects reflect the effectiveness of well planned and executed early burning strategies. It is important to recognise that, while these projects are largely based on the implementation of indigenous burning practices, their effectiveness depends on a range of circumstances and factors. Factors that contribute to the success of these projects in the NT include:

- motivated and committed land owners;
- availability of skilled land and fire managers in the project area;
- absence of conflicting land use objectives;
- an accommodating legislative framework;
- strong relationships between project proponents and researchers;

- access to relevant technologies to support planning and monitoring; and
- ability to generate sufficient income to fund fire management activities.

Recovery following the 2019-20 bushfire season

During the 2019 bushfire season, in contrast to south-eastern and southern regions of Australia, the NT did not experience bushfire related devastation to a similar extent. Nevertheless, the area affected by fire in the northern savannah regions was unusually high, reflecting an unusually long dry season that included record high levels of severe and extreme fire weather.

Mitigation infrastructure and land-use planning

The NTG prioritises planning and mitigation on identified high risk regional areas. Risk is identified through analysis of fire history, evidence of fuel loads and evidence of proximity to assets and infrastructure. While these objectives have remained consistent over many years, new high risk areas have emerged in line with the spread of high fuel load weeds and the ongoing expansion of rural residential and industrial development.

Increased fuel loads, combined with longer fire seasons and more severe fire weather, necessitate new approaches to bushfire risk mitigation. The establishment of new forms of mitigation infrastructure such as extensive regional firebreaks and fuel breaks is under consideration, although funding extensive works of this kind is beyond existing budget capacity. Budgets are already under great pressure as a result of the high cost of the aerial firefighting resources that are necessary to combat gamba grass fires in rural residential areas.

It is currently estimated that gamba grass covers around 1.5 million hectares in the Darwin rural and surrounding areas. The most effective way to mitigate this risk would be to eradicate gamba grass. The cost would be measured in hundreds of dollars per hectare, a cost well beyond the NT's budget capacity. Ultimately, community safety considerations will necessitate the establishment of effective gamba grass controls in the highest risk areas. This may require a program based on collaboration between the NT, the Commonwealth and individual land owners.

Aerial firefighting

Firefighting in the NT has traditionally been undertaken using ground based resources. Fire is not uncommon in the NT; in northern tropical savannah areas it is not uncommon for over 50% of land to be affected by fire in a fire season. Frequent fire impact is a natural and necessary component of many NT ecosystems. In most parts of the NT the scale of fires, the sparsity of fire sensitive assets and infrastructure, and the limited fire response capacity leads to extensive use of back-burning to control bushfires.

In areas of rural residential development it was traditionally much more common to see the use of more conventional vehicle-based firefighting methods that aim to extinguish fires quickly. The spread of gamba grass has added a new dimension to firefighting practice in the top end; later in the fire season, even in mild fire weather conditions, gamba grass burns with an intensity that prevents vehicles or firefighters getting close enough to extinguish a fire using water. The increasing density of assets and infrastructure in these areas most often precludes the use of back-burning alone to manage fires. The spread of gamba grass, exacerbated by the impact of climate change, has created a need for aerial

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firefighting capacity in rural residential areas around the major population centres in the top end.

The NT currently has a minimum of three fixed wing 3,200L water bombers available through the fire season, with capacity to bring in further aircraft when required. One rotary wing aircraft is also retained on standby for air observation and air attack supervision roles, and further rotary wing aircraft can be engaged for suppression and reconnaissance operations.

The NT contracts the provision of all aerial firefighting resources from locally based providers. The NT receives Commonwealth support towards the cost of contracting fixed wing and some rotary wing aircraft through the NAFC arrangements. The cost to the NT of aerial firefighting capacity is a significant financial burden, and makes up a very high proportion of bushfire management costs. It is expected that these costs will continue to increase with continuing spread of gamba grass, continuing expansion of rural residential living, and continuing deterioration of fire weather conditions as a result of climate change.

The NTG does not own any firefighting aircraft. The NT has no current need for large or very large airtanker aircraft. The NT has contracted suitable aircraft to be available locally to satisfy current resourcing requirements. The cost to the NTG of aerial firefighting resources, even taking into account the Commonwealth contribution through the NAFC arrangement, is a significant drain on budget resources and seriously reduces capacity to adequately resource a range of mitigation and other critical fire management activities.