

## Tjoritja / West MacDonnell National Park Report Card 2013-14

### Addendum: Fire Report

#### *Introduction*

Wildfire poses the greatest threat to the parks biodiversity, visitor safety and infrastructure. The frequency and impact of wildfire in central Australia is extremely variable depending on rainfall and resultant grassy fuel loads. For most years there is insufficient fuel to support extensive wildfire, with landscape-scale wildfires only occurring after periods of widespread above-average rainfall. This relationship has changed significantly with the spread of buffel grass (*Cenchrus ciliaris*), which has increased the need for fire management and fuel reduction activities, even in the driest years.

Active fire management needs to be an annual program but the nature, extent and effort required is highly variable depending on rainfall in the preceding 12-24 months. During average and below-average rainfall periods, prescribed burning programs are mostly focused on spinifex country to burn only small strategic patches that creates variability of fire ages within areas of uniform fire age areas and to create areas of low fuel loads that can contribute to protection of important assets (natural or cultural including infrastructure). During periods of above-average rainfall, the extent of prescribed burning programs must be expanded significantly across all vegetation communities and timed during periods of partially cured fuel loads and cooler periods of the year.

Fires do not need to be large to have an impact and conversely, not all large fires, or the total area burnt by large fires will necessarily have a significant impact as arid zone biota have degrees of adaptation to fire. There are however, many areas of the landscape within the park where fire should be excluded, or the interval between successive burning is many years (as many as 30 plus years).

The Southern Region Fire Task Group (SRFTG), comprised of a fire analyst and senior park staff, provides rangers with direction, guidance and administrative support for planning, delivering and reporting on fire management.

It is important to accept that there are often limited opportunities to undertake prescribed burning activities in central Australia: there may be few days where wind, rain, humidity, night and day temperatures and air pressure are appropriately aligned to commence, control and extinguish a burn; the staff time and resources required to achieve adequate fire management across vast tracts of land is extensive and competes with other priorities; the topography of the West MacDonnell Ranges creates opportunities for fire to jump fire breaks; and the numerous pockets of fire sensitive vegetation that need management are very resource intensive, often being in more remote and inaccessible areas.

#### *Recent Fire History*

It is difficult to rate the overall effectiveness of the fire management program in the park, since its establishment in the 1990s. Over this time period, there has been two periods of above-average rainfall and extensive bush fires throughout central Australia. The most recent period (2011-12) is illustrated by the fire history maps in Table 1 which show very few fires in the low rainfall years preceding and following the high rainfall years of 2011-12. This variability does not generally occur in northern Australia. Northern Australia shows a relatively consistent pattern in line with its fairly predictable seasons and predictable rainfall. The fire history maps also demonstrate that the reduction of fuel-loads from grazing and from land managers' efforts to manage bush fire can be quickly overridden by rainfall. In high rainfall years it is critical to rapidly and dramatically increase fire management activities and at very wide regional scales.

During the 2001-02 period 60% of the park was affected by fire, and during the 2011-12 period 70% was affected by fire. During both events, the majority of the fires and the area burnt were relatively large and occurred during hot conditions when fire impact and severity was high.

2011-12 was a period of high grassy fuel loads. Fires were relatively large and occurred during hot conditions when fire impact and severity was high. The historic cattle yards north of Bowman’s Gap on Ormiston Creek were destroyed in these fires. Areas of *fire sensitive vegetation* (species which decline in abundance and that can be eliminated from an area by relatively frequent and intense fires) were also affected. While only a relatively small area of the park contains fire sensitive vegetation (Fig 1a), these areas are biologically significant. Of these areas, 23% were affected by fire in 2001-02, 45% in 2011-13, and 4% were affected by both events (Fig 1b).

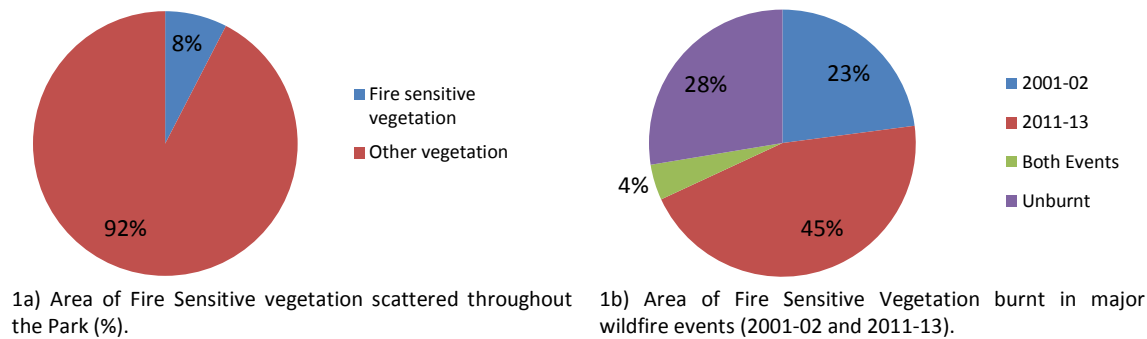


Figure 1 Preliminary assessment of fire impacts on fire-sensitive vegetation within Tjoritja / West McDonnell National Park

The 2011-12 fire events coincided with a time when the capacity of the SRFTG was critically low. Despite this, a significant level of fire planning and prescribed burning were undertaken, including cross-tenure coordination and delivery. Park rangers, the CLC and Bushfires NT, were able to use aerial incendiaries to increase the targeted areas burnt by prescribed fire programs. These fires burnt with a lower severity, reduced the continuity of fuel loads and fire potential, and reduced the impact of other hotter fires.

### 2013-14 Situation

Very little fire management was required over 2013-14. Large areas of the park are still recovering from the fires of 2011 and low rainfall for much of the year has led to generally low fuel loads. Fire may be more of an issue in the coming year due to recent rainfall and increasing fuel loads. Fire management plans are complete for the East (Simpsons Gap area) and West (Ormiston area) of the Park and guide on-ground work such as fire breaks, fuel load reductions and protection of infrastructure and biodiversity assets. Access to formal firefighting and management training is being explored. Staff members that have experience in fire management and are still on park are sharing their experience, and continue to provide some in-house training.

With much of the park in ‘recovery mode’, for the Simpsons Gap area, fire management focussed on establishment and maintenance of the long-term control lines using chemical and mechanical methods. These control lines provide the means of accessing areas for back burning fire breaks to manage future wildfire. Fire breaks to protect park infrastructure were achieved as a medium priority for the 2013-14 plan. Proposed conservation burns were not implemented.

Similarly for the Ormiston Gorge area, the low rainfall has reduced the grass growth and fuel levels remain low. Management focussed on creation of breaks and maintenance of long term control lines to protect infrastructure. Aerial inspection confirmed low fuel loads and enabled the creation of 2 strategic linear breaks to assist summer wildfires. A bushfire west of Redbank Gorge along the southern slopes of Mt Razorback burnt country that was not burnt in the 2011-12 wildfires. There were no conservation burns.

PWCNT purchased a Rain Dance incendiary device and staff will be trained in its aerial application in preparation for years with above average rainfall. This will increase the area that can be managed, and target the management more effectively and efficiently.

**Table 1.** Recent rainfall patterns and corresponding fire history.

- Above average rainfall years in central Australia are closely followed by extensive bushfires
- Extensive bush fires are rare in central Australia in years with average or below average rainfall

