FIRE MANAGEMENT

Fires and burning have been a part of Tjukurpa for thousands of years.

Burning the country began with the ancestral beings in the *Tjukurpa*. *Lungkaṯa* (blue-tongued lizard) burned the spinifex as he travelled towards Uluṟu from the north.

Aṉangu use fire for cooking food, warmth and making tools. They also burn patches of land as they travel to encourage bush foods to grow, to flush out game and to make walking easier. Fire patches are often as small as a few hectares and close together, leaving a pattern of burnt and unburnt terrain similar to a mosaic. Traditional burning of the Uluṟu area stopped when *Aṉangu* were removed from the region during the 1930s.

During the 1940s rainfall was good and the vegetation flourished. The 1950 fire, fed by the fuel grown during the previous 20 years, wiped out about one third of the park's vegetation. The pattern repeated itself and in 1976 two fires burnt 76 percent of the park. To prevent further damage to the diversity of vegetation, park managers approached traditional land owners for advice and tuition and a system of patch burning was developed for use in the park. Today, *Aṉangu* direct and carry out the burning with the assistance of park rangers.

Desert vegetation and burning

In order to understand burning, it is important to know about desert vegetation. There are two main vegetation groups in the park, one dominated by spinifex and the other dominated by mulga. Both these vegetation types have adapted very differently to survival in the arid zone.

Spinifex

The spinifex-dominated vegetation of the dunes and higher plains looks grassy with openly spaced trees. Most of the plants revegetate by sprouting either from under the ground like spinifex or above the ground like the desert oaks. After fire, regrowth will be visible within weeks, even without rain! Desert oaks have a thick bark, which allows resilience to fire. Vegetation with these resilient characteristics can survive frequent fires.

Mulga

Groves of trees on the lower plains and in the dips between dunes make up the mulga-dominated vegetation, looking quite different from the spinifex areas. Most of the plants in mulga areas regenerate from seed, and germination often requires heat from the sun or fire to crack seeds and encourage new growth. It takes two good seasons of rain to germinate the seeds and young mulga trees grow for around 10 to 20 years before they become mature enough to set seed.

Fires in immature mulga forests can eliminate whole communities of this species therefore these areas can only afford to be burnt every 50 years or so.




Fact Sheet
Uluṟu-Kata Tjuṯa National Park

In the park you will notice large stands of mulga, especially near Uluṟu and the seeds for these trees were germinated in the 1976 fires. While fire can enhance the germination of mulga, adequate rainfall is the most important factor determining successful regeneration events.

Rainfall and natural fires

Rainfall is the key to fire danger at Uluṟu. The higher the rainfall, the greater the amount of fuel and the more chance there is of fire. The periods of highest fire danger occur after a few years without fire when the spinifex has built up and the growth of grasses in the mulga has peaked following heavy rain. When these factors coincide, uncontrolled fires will travel long distances through both vegetation types, making these the most devastating fires. Natural fires mostly occur in the early summer months. They are usually started by the lightning strikes of dry electrical storms from the northwest. When these storms arrive the weather is usually hot, dry and windy, which are ideal conditions for raging fires.

What is patch burning?

Patch burning is a controlled type of burning using numerous small fires at one time. It is designed to protect the vegetation from destructive burning. The many small patches are burned so that large areas are protected from accidental burning. From a satellite, patch-burned areas make a mosaic pattern. Over the years, as the burnt patches regrow, satellite images show different shades in the various vegetation growth stages.

How does patch burning work?

Patch burning works by reducing the amount of fuel in patches and strips throughout the park. These strips and patches provide a natural break against the full force of a natural fire and allow it to burn out. This limits the amount of damage any one fire can cause in the park and is progressive so that regrowth is staged. Patch burning also has the ecological advantages of providing shelter and regrowth to support fauna within the park. Biologists often refer to this as the edge effect as they believe that wildlife shelter in the older vegetation yet move into burnt areas to eat the tender new shoots.

The patch burning program has been running in the park since 1985. It has taken over 20 years for the regrowth of the devastating 1976 fires to provide enough fuel to sustain small controlled fires.

Re-establishing the mosaic for the entire park will take around 20 years as only five percent of the park is burned in any year. This strategy has already shown success. In 1990 two large scale fires driven by the hot, dry, summer winds threatened the park, Both of these fires were easily controlled as they hit the patches and naturally burnt out. As a biosphere reserve, Uluṟu–Kata Tjuṯa National Park is an example of arid zone ecology.

Management has responsibility to preserve the diversity of life within the park and patch burning is an effective management strategy applied to maintain maximum diversity.

Fire increasers

Plants found in the park known as ‘fire increasers’ include northern mulga grass (*Paraneurachne muelleri*), native lemon grass (*Cymbopogon ambiguous*), threeawn wanderrie (*Eriachne aristidea*), waxy wattle (*Acacia melleodora*), and desert poplar (*Codonocarpaus cotinifolius*). These species directly benefit from fire, either through reduced competition with other species or through various germination cues.