

Aerial burning in the north-east Kimberley

Dry-season wildfires are a real risk for WA's Carlton Hill Station. A fire-management plan that incorporates aerial and ground burning has more than halved the number of wildfires occurring over the past six years.

Geoff Warriner, Manager, Carlton Hill Station, north-east Kimberley

Carlton Hill is a Western Australian property situated just north of Kununurra, east of the port of Wyndham and close to the WA-NT border. The property is 2,000,000 acres and comprises two main blocks, running 45,000 head of cattle. It has a turn-off of approximately 12,000 head/year.

Soil types are predominantly sandy, covering about 800,000 acres, with some 500,000 acres of rocky outcrops and black soil flats. The main pastures relate to the soils and are Spear (*Sorghum spp*) and Cain grass on the red soils and mainly Spear, Mitchell (*Astrelba sp*) and Kangaroo grasses (*Themida triandra*) on the black. The basic cover on the outcrops are spinifex. All these pastures are vulnerable to fire, and dry-season wildfires can potentially cause severe losses to the enterprise. For this reason Geoff has burned firebreaks around and through the property over the past six years linking them to internal firebreaks within the property.

Property fire management plan

The key aspect to the fire plan is aerial burning of a firebreak around the property's perimeter, with two other breaks burnt from north-south at intervals to divide the property. There is also one from east to west across the centre. Later in the season additional breaks are burnt from roads and tracks to complement aerial burning.

How firebreaks are burnt

Each year, arrangements are made with WA's Bush Fire Service for aerial incendiary burning of the firebreaks around the boundary, as well as internal breaks which divide the property into a number of blocks. These run north-south and east-west, creating six major blocks. Burning starts as soon as the country can carry a fire, normally around March-April and ceases in June. At this time of year permits to burn must be obtained from the local shire. Incendiaries dropped from the aircraft produce breaks from 100 to 1000 metres in width before the fires self-extinguish (depending on fuel load and the amount of moisture in soil and pastures).

After the aircraft work is complete, additional breaks are burnt from roads and tracks all over Carlton Hill until June when it usually becomes too dangerous to continue burning. Where possible breaks are not made on country burnt during the previous year.

Outcomes of the fire regime

This policy of burning perimeter firebreaks, backed up by the pattern of breaks within the property, has reduced the area affected by wildfire on Carlton Hill over the years. Geoff has seen a significant change: from 15 to 20 wildfires burning out 70 per cent of the property around six years ago, to five to 10 fires last year and the year before. Because of their relatively small size, these recent fires have had little effect overall.

Ancillary benefits are improved pastures early in the dry season and easier mustering, as well as making it easier to fight any wildfire that has occurred. A good pattern of firebreaks in place provides scope for safely burning larger areas for pasture management purposes.

Fire management costs

The main cost of aerial burning is the hire of the Bush Fire Service aircraft (currently \$500 per hour). It takes three hours flying time to burn the breaks around and across Carlton Hill. The incendiary pellets are included and there is also no charge for ferrying the aircraft and materials to the property. Additional ground-based burning costs are calculated mainly in labour and are usually done while doing water runs or other jobs.

Reference

Warriner, G., (1998), Carlton Hill Fire Prevention Management Plan, *Kimberley Pastoral Memo*, Dec. 1998, p. 7-8.

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Overgrazing after fire, by Andrew Craig, AGWEST

After burning firebreaks in stocked country watch for the effect of grazing when cattle chase green regrowth. Concentrating stock on small areas regenerating after fire can cause serious damage, particularly early in the wet season. At that time the perennial grasses must build up their depleted underground reserves and if new growth is continually removed the tussocks can be weakened and may ultimately die. The resulting increase in bare ground means less productivity and the likelihood of erosion problems.

Where firebreaks are established in high-rainfall areas each year from roads or tracks, burning each side alternately would be recommended.

If burning is required in a large paddock to remove rank grass, consider doing this towards the end of the dry season, probably after the first storms. At that time it should be easier to burn a reasonable proportion of the total area than in the early dry season, when fires tend to be small and patchy. With a larger burnt area, stock will be encouraged to spread out as they graze the new growth, reducing any damage. A different section of the paddock could be burnt in the following year, thus allowing for continuous stocking.

A large laminated map of the station is useful for planning purposes and for keeping track of recent fire history in different parts of the property.

