Sacrificial burns protect critical country

Jeff Little, Manager, Opium Creek Station, Mary River District, Northern Territory
Richard Fell, Tropical Savannas CRC, Northern Territory University, Darwin

Fire management at Opium Creek Station combines fire and chemicals to create sacrificial areas that protect other more sensitive or critical country.

Jeff Little manages Opium Creek Station which lies about 100 km east of Darwin. The 200 km^2 property borders the Mary River system and the proposed Mary River National Park and comprises 60 per cent woodland and 40 per cent floodplain.

Fire management is a very important part of sustainable land management on the property, and is designed to prevent the devastating impacts of uncontrolled fire on native floodplain pastures.

Fire and chemical applications are combined to give cost-effective and environmentally sustainable pasture and weed control. This combined treatment has been used effectively by the Department of Transport & Works, Bushfires Council NT, Parks and Wildlife Commission of the NT and other landholders. The overall result has been to reduce erosion, the cost of annual fence repairs and the threat of wildfires.

Fire-management plan

There is combined use of fire and chemicals at Opium Creek to create sacrificial areas that protect other more sensitive or critical country. These areas include fence lines on native dry scrub country and buffer strips bordering the floodplain. The buffer strips are burnt in strategic areas and provide a corridor between the high and low country. Three rocky ironstone outcrops pose a real threat for wildfires ignited by lightning strikes, so buffer strips are also burnt around these areas. Controlled burning of firebreaks and other areas is done early in the dry season and has added benefits for weed control.

Chemical treatments

Chemical applications are made towards the end of the wet season while the vegetation is still lush and green. Herbicide is applied in one pass to 10 m either side of the fence. Jeff uses a quad bike to pull a specially designed trailer and high-pressure spray unit. A boomless nozzle is used to get good ground-level coverage.

Herbicide is applied at recommended rates to increase the curing rate of the vegetation and enable an early burn. This method leaves root systems intact and reduces the risk of soil erosion.

Lighting firebreaks

Once the grass has cured, firebreaks, buffer strips and other designated sacrificial areas are lit from quad bikes. The Point Stuart Volunteer Bushfire Brigade, of which Jeff is also a member, generally assists with the operation. Grass and other vegetation regrow after about six to eight weeks and provide sufficient ground cover to prevent erosion and maintain a good break.

Burning in a firebreak on a quad bike at Opium Creek Station

Costs of fire management

In 1999, the cost of burning the 21 km boundary firebreak on Opium Creek was $672. This cost was calculated on a per kilometre rate of spraying and burning and the following specifications:

Spraying capabilities and costs	
Tank capacity	250 L
Spray rate	60 L/ha
Swath width	14 m
Area covered/tank	4.17 ha
Distance covered/tank	2.98 km
Herbicide cost/tank	$93.75* (incl. wetting agent)
Time taken to spray	4 mins/km
Speed	16 km/hour
Area covered/km	1.4 ha
Cost/km	**$32/km**

As shown above, the spraying process is relatively fast. Burning is also quick and takes roughly the same amount of time as the spraying.

Results of burning

Jeff regularly monitors the effects of the fire management plan at Opium Creek and has identified many benefits. These include: a reduction in wildfires;protection of fragile native floodplain grasses; less soil erosion on chemically treated firebreaks; a reduction in the cost of fence replacement; less labour costs in fire management; and better overall pasture and property management.

Disclaimer: Information provided by the TS–CRC for the Prime Notes CD–ROM publication is general advice only. Professional advice should be sought if seeking to apply information to specific circumstances. The TS–CRC has tried to ensure this information is accurate at the time of publication.
Visit our website at: http://savanna.ntu.edu.au

TROPICAL SAVANNAS CRC
Established and Supported under the Cooperative Research Centre Program