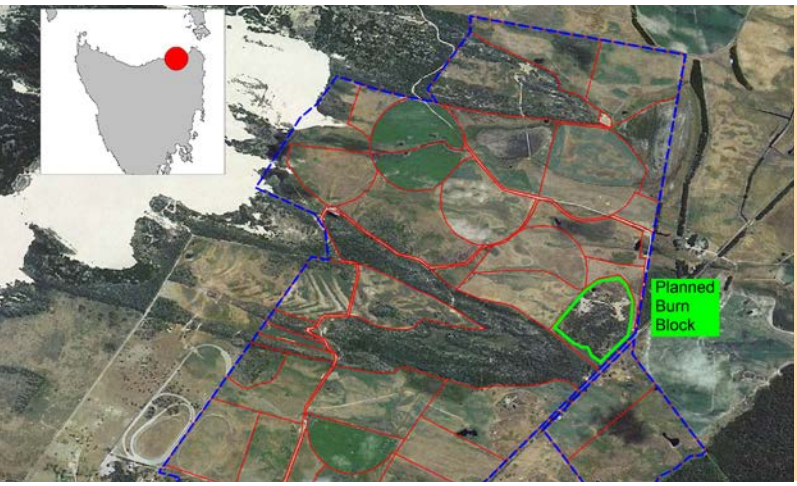
Ecological burn to regenerate cabbage gum woodland and reduce fuel loads. Elizabeth Hall, Manuka Park

"I believe we are the caretakers of the bush for the next generation. The planned burning pilot project gave me an opportunity to develop my knowledge of fire to improve bush health and regeneration on my property whilst reducing fuel loads." Elizabeth Hall.



Manuka Park - facts & figures

- 470ha
- Beef cattle (dryland and irrigated)
- 33ha of irrigated potatoes
- 90ha of native vegetation with an average patch size of 10ha (coastal scrub, black peppermint, white gum and cabbage gum woodlands)
- Altitude - sea level
- Rainfall average 730mm
- 2 x full time labour units
- Fire fighting equipment: 1 x 2000L water tank, loader, disc slasher

A fire action plan was developed for Manuka Park identifying fire management goals including ecological and fuel reduction objectives, as well as built assets for protection, potential fire breaks, natural assets and resources available for fire management.

Aim of the burn

To stimulate tree and shrub regeneration and reduce fuel loads.

Background

The 10ha cabbage gum woodland has variable plant diversity and condition, with generally poor recruitment of eucalypts and some dieback in mature trees. Understorey varies from bracken, sagg and weedy grasses to heathy vegetation. The block was fenced in 2012 and has not been burnt in over 20 years. The fuel hazard rating was assessed as high. There are some log piles near the fence and a few small gorse plants in the NE corner. Boundaries are secure all the way around the block (see maps). There are a few threatened grasstrees (*Xanthorrhoea* spp.). Threatened animals which may occur there include wedge-tailed eagle, Tasmanian devil, spotted tailed quoll and eastern barred bandicoot.

Recommended Planned Burn Conditions

- Moist soil conditions
- Stable high pressure system
- More than 2 days since rain
- Wind speed at tree top ≤20 km/hr
- Humidity 40 to 75%

The recommended burn interval for this block is 20+ years.

Lead up to the burn

The weather forecast was monitored for long periods of stable high pressure systems. In the few days leading up to the burn the weather conditions had persistently been dry with strong SW winds and low humidity. On the day of the burn 10-15km/hr winds, humidity 65% and no rain were forecast. The TFS district officer was approached to provide additional resources in the days leading up to the burn, with the burn confirmed the day prior. Neighbours were also notified once the burn date was confirmed.

"Initially, landholders should plan to undertake burns on their properties of a size that they can manage with their own resources. If it is evident that they cannot, then contact their TFS District Officer for assistance. TFS capability to assist will vary from area to area and day-to-day, however if there is enough notification crews can usually be assembled." Stephen Lowe (TFS)

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"While burning conditions were at the bottom end of the scale in respect to volatility and were not conducive to achieving a complete and effective burn, the burn conducted achieved a very suitable outcome through providing a learning experience on lighting techniques and planning process." Stephen Lowe (TFS)

The day of the burn (27 May 2013)

People and Equipment

TFS crews were used for this burn, as due to its location it would be high risk if things didn't go according to plan.

Crew 1: (1 X TFS 5.1 unit) 2 people lighting, 2 people on mop up.

Crew 2: (1 x 400L slip on tank mounted on 4WD & 1 X TFS 5.1 unit) – 1 person lighting, 2 people on mop up.

A 2000L trailer mounted tank towed by a tractor was left at the safety meeting zone, as a close refill point should it be needed. All crews had access to UHF radios.

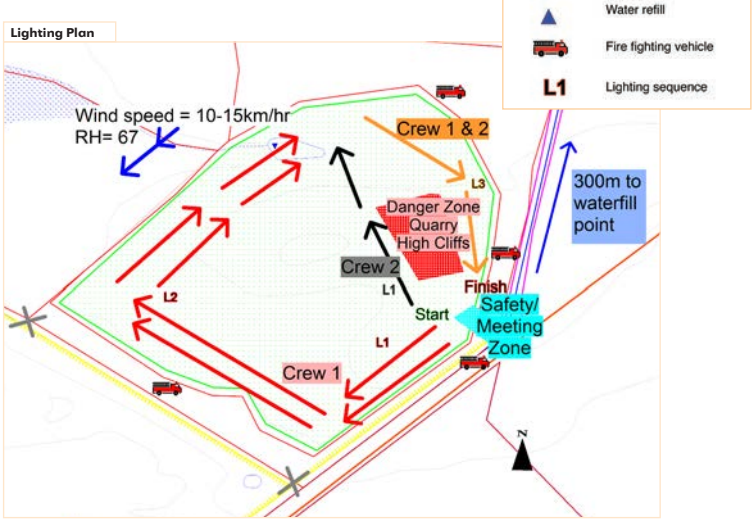
Process

11am All tanks were filled and checked, lighting plan decided, TFS permit burn implementation plan and a risk assessment completed.

12pm Briefing held to explain the plan, allocate tasks, highlight risks & contingency plans. All personnel were driven around the block to orient them.

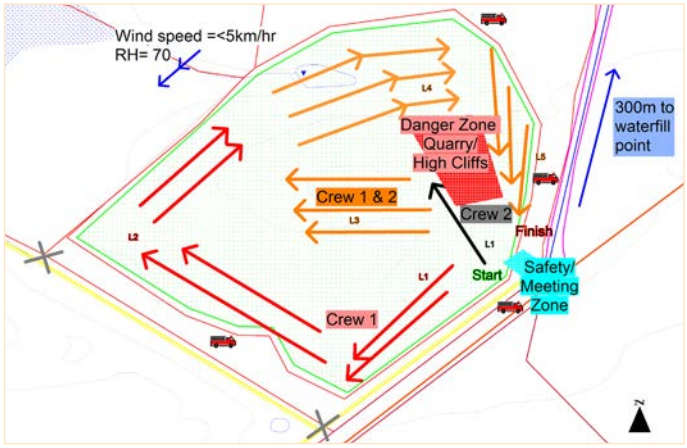
1pm Lighting commenced.

Planned lighting pattern based on forecast wind speed and direction –11am



There was significantly less wind than forecast (<5km/hr), so the lighting plan was altered and more people were assigned to drip torches so the burn could be lit with a higher intensity. The burn was completed at 3.30pm.

Actual lighting pattern - 1.30pm



After the burn

Approximately 3ha (30%) of the block was burnt. 1.5ha (15%) was a cool/damp burn with 55% unburnt. The burn was monitored for a few days afterwards - so a close watch could be kept on smouldering logs and trees (weather conditions post-burn were not conducive for creating escapes).

Key learnings

The lack of wind (<5km/hr) combined with low temperature and reasonably moist soil and fuel conditions on the day meant the fire did not carry through the block. Although the conditions weren't as forecast (less wind) and not ideal to achieve a complete burn of the area, the decision to continue as planned with the burn was made recognising that it would be somewhat "patchy" in nature. This decision was justified, given the desired outcomes of the burn and that the actual conditions didn't mean the burn was likely to be more volatile and harder to control than predicted. If this had been the case the decision would have been to call the burn off.

What next

- The most flammable areas and the edges of the block were burnt - this will allow Elizabeth to go back and safely burn the less flammable areas knowing the boundaries are secure.
- Monitor for regeneration & recovery, to learn from the results of this burn how best to burn for regeneration and ecological benefits.
- Follow-up spraying of gorse in autumn 2014.

This case study has been prepared as part of the Planned Burning Pilot Project delivered by Macquarie Franklin and funded by NRM North. For more information about this project contact NRM North on (03) 6333 7777.