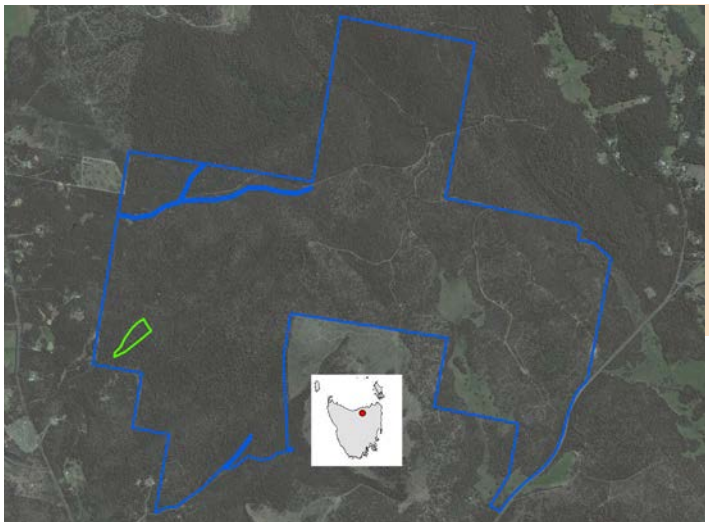
Planned burning in remnant bush for fuel reduction.

Tasmanian Land Conservancy



Archers Whareham - facts & figures

- 810ha property, now managed for conservation, previously for forestry.
- Predominantly covered by native vegetation.
- Majority of the property has not been burnt for 20+ years.

Aim of the burn

To begin implementing the Fire Management Plan for Archers Whareham, to reduce fuel hazards to minimise the risk of wildfires to this property, and to neighbouring properties.

Background

Archers Whareham is covered in eucalypt regeneration <5m high. This vegetation is vulnerable to a wildfire and could also be damaged by low intensity planned burning. Therefore broad scale fuel reduction burning was not an option. The main access road (running SW – NE), could be a control line if strengthened by fuel reduction burn units along its length. This minimises the expense of machinery work required to prepare breaks and boundaries.

This planned burn was the first step in building this strengthened control line. Once burnt, this unit can be used as a boundary, increasing the boundary security for future burns.

A 1.8ha patch within a *Eucalyptus obliqua* (brown top stringy bark) dry forest (DOB) with an understorey dominated by bracken and sagg, and an overall fuel hazard rating of extreme. This patch is on the northern side of the main access road, which provided the most secure boundary for the planned burn. The unit was surrounded on its other sides by a narrow, overgrown 4WD track and sloped slightly up hill to the east.

Although a small area, this unit presented some serious challenges in burning and keeping the fire contained:

- Stringy bark is a very high fire hazard. Fire runs up the bark to the top of the canopy, and pieces of lit bark break off and can spot into neighbouring patches of bush (spotting distance depends on the wind speed, but under planned burn conditions could be up to 20m).
- Extreme fuel hazard – rating determined by the bark spotting hazard combined with the amount of continuous dead material in the ground and understorey layer. This will increase fire intensity and spread.
- Minimal access tracks through the bush to the south (escapes would be difficult to contain).

Burn day - 31 March 2015

Weather forecast

The weather had been fine for 4 days leading up to the burn (with 10-20mm rain prior to that), and the forecast for the day of the burn was for light (10-15kph) north easterly winds, 18°C and 70% RH. The forecast for the next day was for a change, bringing rain and north westerly winds (25-30kph).

The critical factors for this burn were wind speed and direction – the burn could not be done safely under a southerly or south westerly wind direction and/or if wind speed was >20kph.

Equipment & people

Managing the burn:

One person from TLC had the task of overseeing the burn. This meant they had no active role in lighting the burn, or any other duties. Their job was to stand back from the burn, watching and monitoring both the weather conditions and fire behavior and using radio communications:

- direct the lighting team so that an appropriate lighting sequence and intensity was maintained;
- direct the mop up crew to where they were needed;
- direct the wet lining crew (pace, location, etc.).

Lighting team:

2 people manned drip torches and worked together lighting the burn.

Fire suppression resources:

- 1 x 400L slip-on foam inducted unit manned by two people and putting out wetlines ahead of the lighting team.
- 1 x 400L slip-on foam inducted unit manned by two people and monitoring the fire.
- 1000L tank with additional water positioned at the safety zone.
- Permanent water refill 10 min drive away.

It was great to have guidance from an expert when burning an area with an extreme fire hazard rating for the first time. As a land manager, learning first-hand the different ways to control a planned burn was an excellent experience.

Denna Kingdom, Reserves Manager, TLC.

The burn plan

The map above shows how the burn was conducted. Steps are outlined below.

1. & 2. Secure the vulnerable edge (southern boundary), by back burning off the road. Began at 1.40pm (after first registering with TFS on 1800 000 699) and took 1.5 hr.

3. Infill burn the centre of the block. Began at 3.15, and took 45 min.

4. Secure the northern and eastern boundaries by burning along this edge back into the block (wetline used here due to insecure boundary). Began at 4.00 & took 1 hr. Finished at 5pm.

Fire running up trunk of stringy bark - creates a high spotting hazard

Key learnings

- The burn boss keeping out of the action meant they could objectively monitor fire behavior, weather and how the team is performing, and adjust lighting patterns, or call in additional suppression resources, etc.
- Starting burns small using widely spaced spots of fire, kept the initial part of the burn small and allowed the burn boss and crew to get a feel for how the fire would respond to differing fuels types and loads.
- Secure the most vulnerable boundary first and take as long as needed to do it - rushing this step can lead to increases in fire intensity and escapes.
- If the weather changes during a burn, or burn intensity cannot be kept to manageable levels, the burn should be stopped and recommenced when the conditions are more suitable.

Weather conditions during the burn

Weather conditions were monitor regularly during the burn. The snapshot below shows how stable conditions remained for this burn.

Time	RH	Wind	Temp
1.30	71%	N@10-15km/hr	18°C
2.20	73%	N@12km/hr	19°C
5.00	76%	NW@12km/hr	17.5°C

Managing burn intensity

Spot lighting was used for all steps except step 4, when it was safe to light lines. Spacing between spots and between the two lighters was 5-10m. It was critical not to overlight this burn, to keep intensity manageable. Even with these precautions, the fire did spot on 2 or 3 occasions over the southern boundary, however these escapes were quickly dealt with.

Wettlining used to help secure the northern boundary. Note the extreme fuel hazard

Taking it slowly and carefully to secure the southern boundary

Conduct a briefing so everyone helping out on the day is fully informed as to how the burn is to be conducted and any risks

After the burn shrubs and trees undamaged by the burn, which has done a good job of cleaning up the fuels

What next

- In autumn 2016 we are aiming to burn the next three small burn units adjacent to the one burnt in 2015, to improve the main track as a wildfire control line.

This case study has been prepared as part of the Red Hot Tips project delivered by Macquarie Franklin and funded by the Tasmanian Government. For more information please contact Leanne Sherriff by emailing lsherriff@macfrank.com.au or visit www.sfmc.tas.gov.au/red-hot-tips