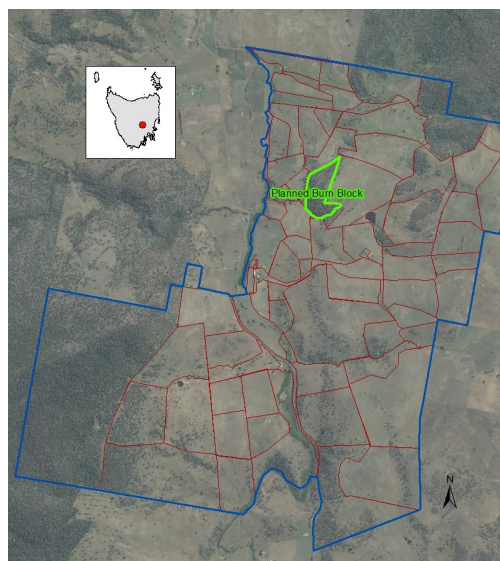


Planned burning to regenerate silver peppermint forest and for fuel reduction. Sarah and Stephen Barrington, Apsley Park



"I applied for the project to gain more confidence in using fire as a tool on the property. Over the generations this is a skill that has been lost and I saw this as an opportunity to gain experience and increase my skills to better manage fire on the farm." Stephen Barrington.

Apsley Park - facts & figures

- 1,400ha grazing property
- 520ha of native vegetation
- Majority of the property has not been burnt for 30+ years
- Fire equipment: 1 x driptorch, 1 x 750L slip on tank for 4WD, 1 x 750L trailer mounted tanker and 2 x tractors



A fire management plan was developed for Apsley Park identifying fire management goals including ecological, weed and fuel reduction objectives, asset protection, potential fire breaks, threats and threatened species, and resources available for fire management.

Aim of the burn

To achieve a mosaic burn to encourage silver peppermint regeneration and to reduce fuel loads.

Background

The 12ha block of silver peppermint woodland varies in topography and aspect ranging from a steep south west facing slope with dense litter and bracken on the ground to a gently sloping grassy north facing and sagg dominated section. This made for an interesting case study burn site.

Overall the patch of bush is in good condition however, there is a lack of tree regeneration. The block has not been burnt in over 30 years and has an overall fuel hazard rating of high. It contains a few scattered gorse plants. Silver peppermint is a threatened vegetation community, and threatened animals which may be found here include the wedge-tailed eagle, Tasmanian devil, spotted tailed quoll and the eastern barred bandicoot.

Due to the time of year, the boundaries were secure all the way round as the grass in surrounding paddocks is green and will fail to sustain a fire. However, the fence line that runs along the eastern boundary, at the top of the hill, needs to be protected from fire, as sags and other vegetation from the bush run right up to and through it.

Legend

- Safety point
- 🚒 Fire fighting vehicle
- Water tank
- Fence
- Track
- Ignition lines
- Contours
- Rivers
- ▨ Section 1
- ▨ Section 2
- ▨ Section 3
- ▭ Case study burn
- ▭ Dam
- ▭ Paddock boundaries



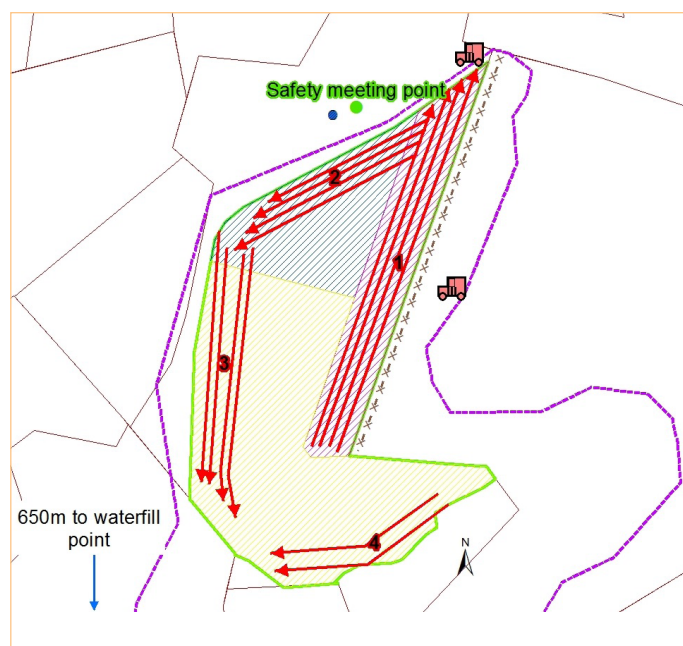
The day of the burn (13 May 2014)

People and Equipment

1 x 750L slip on tank mounted on 4WD ute manned by 2 people, with 4 people (working in pairs) lighting up with drip torches.

A 750L trailer mounted tank towed by 4WD was positioned at the north east boundary, as a backup. All teams had access to UHF radios for communications.

Participants arrived and burn plan developed.



“Normally I try to burn early in the season but today taught me it is possible to burn later in the season, by monitoring the weather, opportunities do arise.”

Tom Clark, from Lanoma Estate is a farmer at Westerway and volunteer fire fighter with TFS.

1:30pm – commenced lighting section 1

RH: 51%	Wind: NNW@11km/hr	Temp: 16°C
----------------	--------------------------	-------------------

Section 1, along the top of the ridge, was the most vulnerable edge of the block, with saggs, bracken and long grass growing right up to the fence, and then leading into long grass in the paddock beyond the fence. It was decided to light this section first by burning from the fence line, into the wind and slope to create a blackened break, to contain the burn from section 3 (the steep hill). The lighting teams ignited ensuring that the person furthest away from the edge of the block was always ahead of the other ignition lines. The suppression crew followed behind the lighting teams, monitoring and suppressing any fire which burnt towards the fence line.

2:30pm – commenced lighting section 2

RH: 51%	Wind: NNW@16.5km/hr	Temp: 16.5°C
----------------	----------------------------	---------------------

This section, at the northern end of the block, gently slopes to the north. A vehicle track, suitable as a break under these conditions, ran along the northern boundary. This section had varying fuel levels from continuous high levels of dry fuel in the north to low, discontinuous fuels broken up by rock areas. Before lighting for this section started, a weather check noted that wind speed had increased to 16.5km/hr (direction unchanged) and the sun had come out, increasing fuel drying. However, noting how section 1 had burnt, it was decided it was still safe to proceed. In fact as the burn was being done with relatively high fuel moisture levels the increase in wind speed was used to our advantage to carry the fire through this section.

Key learnings

- This case study burnt clearly demonstrated the effectiveness of balancing different factors which influence fire against each other. At this site the fuel moistures were high and fuel hazards variable, meaning that having high wind speed and steep slope were beneficial to encourage the fire. The fire was also lit in such a way as to maximise the fire behaviour by using parallel lines.
- Burning in late autumn when conditions were benign meant we had better control of the variables to get the desired level of fire behaviour without risking escapes. There was also more flexibility in the range of weather conditions which would be acceptable to light the burn.
- Having the surrounding paddocks green with very high fuel moistures and limited dead fuels reduced many of the risks associated with this burn, which at other times of the year would not have had secure boundaries.
- The areas which successfully burnt were the areas with higher fuel hazard. It will now be possible to burn the damper southern section when fuel moistures are low without the risk of the fuels in the adjacent sections being too low and hence vulnerable to escapes.

3:15pm – commenced lighting section 3

RH: 46%	Wind: NW@18km/hr	Temp: 17°C
----------------	-------------------------	-------------------

This section included western and southern slopes, which while steep also had the highest fuel moisture levels. The near surface fuels were dominated by sagg and bracken, with high levels of litter in the surface fuels. This section was burnt last to give the fuels the maximum time to dry out. The wind speed increased a little to 18km/hr prior to this section being lit, however it was still safe to proceed due to high fuel moisture and the security of the boundaries. Like section 2 the high wind speed was used to help carry the fire.

4:10pm – finish

RH: 52%	Wind: NW@10km/hr	Temp: 16°C
----------------	-------------------------	-------------------

By the time section 3 had finished being lit; both the wind speed (10km/hr) and temperature were decreasing.

Overall the burn was very successful, achieving a mosaic of differently burnt areas through the bush. Where there were rocky areas or areas where fuels were discontinuous the fire failed to sustain burning. The southern section did not burn due to the high fuel moisture content, despite the wind and slope effects being positive for fire. In the areas which burnt well, some areas burnt hotter than others, providing a suitable ash bed for the silver peppermints and other native plants to regenerate.



What next

- Monitor for regeneration & recovery, and whether the burn did achieve desired regeneration outcomes. Depending on the outcomes adjustments to burns in future may be needed to achieve better outcomes.
- Follow-up spraying of gorse in autumn 2015.