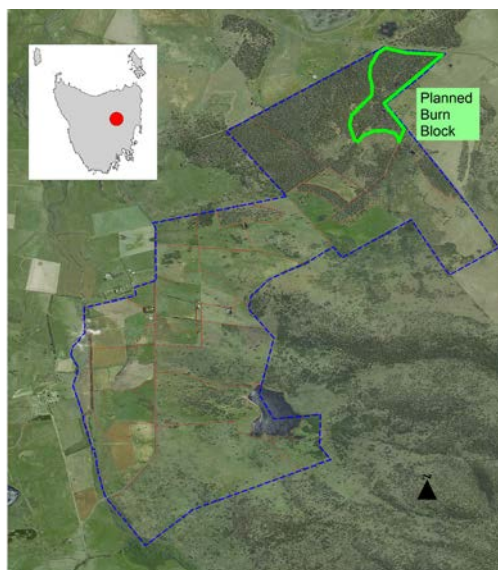


# Planned burning for fuel hazard reduction, biodiversity management and weed control - John and Isabelle Atkinson, Maitland



“The planned burning project gave me the logistical support I needed to undertake burning on my property. My father and I have wanted to burn the bush block to encourage biodiversity for quite some time. Before the project the overall risks of lighting a fire such as fire escaping to a neighbouring property was greater than the potential benefits of burning.” John Atkinson

## Maitland - facts & figures

- Property size 850ha
- Merino wool production
- Irrigated cropping - poppies & cereals (120ha)
- 180ha of native vegetation (mainly grassy black peppermint woodland). 155ha in one large block, the remaining native vegetation patch size averages 5ha.
- Altitude - 220m
- Average rainfall - 560mm
- 1.5 x full time labour units
- Fire fighting equipment: 1200L trailer mounted tank, tractor, loader and discs



A fire action plan was developed for Maitland identifying fire management goals including ecological and fuel reduction objectives, asset protection, potential fire breaks, threats and threatened species, and resources available for fire management. Due to threatened species occurring within the block and his existing covenant John had to obtain 2 separate permissions before the burn could go ahead: 1. permit for threatened species from Threatened Species and Marine section (DPIPWE). 2. permission to burn the covenant from the Private Land Conservation Program (DPIPWE). These permissions are valid for the life of the Fire Management Plan.

## Aim of the burn

1. encouraging biodiversity,
2. reducing fuel hazard, and
3. controlling gorse.

## Background

Black peppermint inland forest on canozoic deposits (DAZ) is a threatened vegetation community. This 49ha patch was put into a 12 year covenant in 2008. 36ha of the total block was planned to be burnt. The patch also has white gums, and a variable understorey: grass, bracken or sedge/sagg dominated. It has not been burnt in over 30 years & has an overall fuel hazard rating of high. Threatened plants found include knotty spear grass (*Austrostipa nodosa*), propeller plant (*Stenanthemum pimeleoides*) and chocolate lily (*Arthropodium strictum*). Threatened animals may include the wedge-tailed eagle, Tasmanian devil, spotted tailed quoll, masked owl and the eastern barred bandicoot. Gorse is scattered on the boundaries of the bush block. The block boundaries were secure all the way around, with the most vulnerable boundary along the eastern side.



## Recommended Planned Burn Conditions

- Moist soil conditions
- Stable high pressure system
- More than 2 days since rain
- Wind speed  $\leq 20$  km/hr
- Humidity 50 to 75%
- Aim to burn  $< 20\%$  total area each burn

The recommended burn interval for this type of bush and its range of species is every 20-30 years.

## Lead up to the burn

The weather forecast was monitored for long periods of stable high pressure. 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 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)

“Overall I felt the burn went fairly well. I would like to have seen more of the area burnt. In hindsight I was probably a little bit too cautious, but the gorse on the boundary made it a bit tricky. That being said it has set the area up for another burn and will work well with my gorse control scheduled for that area. It was good to have the fire brigade support and everything considered was a good start.” John Atkinson

## The day of the burn (29 May 2013)

Morning fog lifted around 10:30am. A test burn lit at 11am indicated conditions were suitable for the burn to go ahead.

### People and Equipment

Crew 1: 2x 400L TFS units manned by 5 people, plus 3-6 people lighting (includes 6 TFS personnel). Along the northern boundary there were 3 people lighting and 3 people on patrol

Crew 2: (1x 400L slip on tank mounted on 4WD ute) - 1 person lighting and 1 person on patrol.

2 x 400L trailer mounted tanks were positioned at the north and south safety zones. One person monitored the overall burn. All crews had access to UHF radios.

### Process

11.30am All vehicle tanks were filled with water & checked, lighting plan decided, TFS permit burn implementation plan & 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.

12.45pm Lighting commenced.

### Actual lighting pattern - 1.15pm

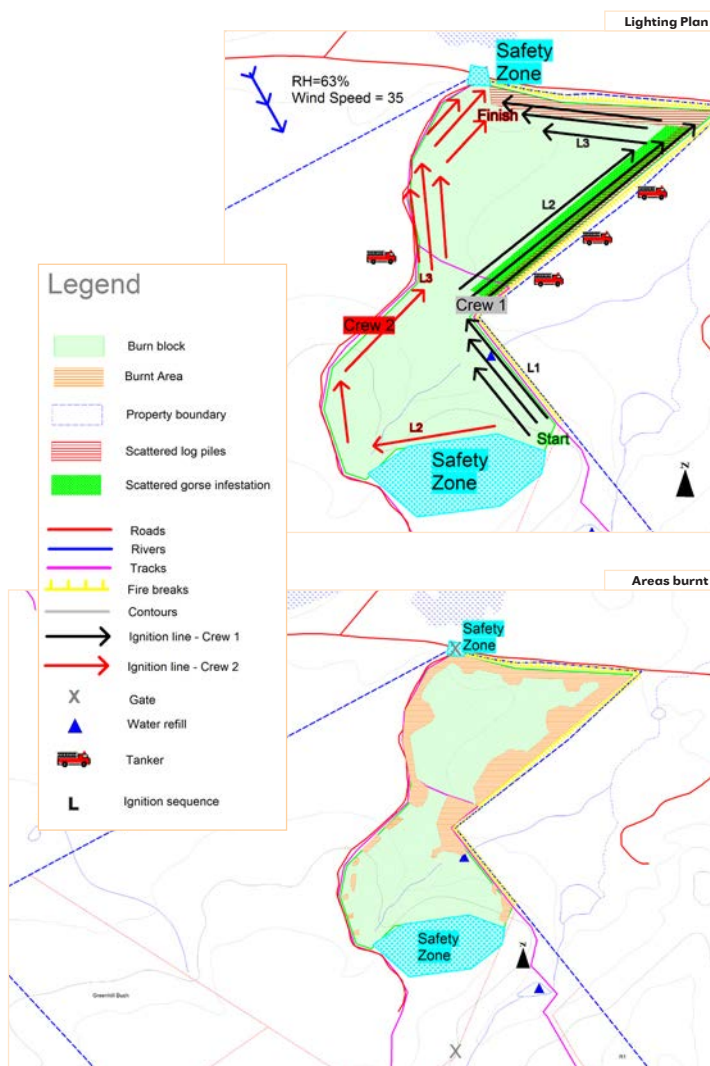
There were higher wind speeds than forecast (35km/hr) however, due to high soil moistures and a high humidity the burn needed lighting with greater intensity than planned. The burn was completed at 3.30pm.

## After the burn

Approximately 9ha (20%) of the block was burnt. John monitored the burn for a few days after - looking for smouldering logs and trees and ensuring that the fire stayed within boundaries. Log piles were turned to encourage them to burn through completely.

## Key learnings

- It is possible to ‘push’ 1 or 2 factors if other factors are at the bottom end. The fuels were moister than anticipated from the morning fog, so in this case the high wind speed of 35 km/hr did not mean the burn was not safe. The test burn was used to make sure conditions were suitable for the burn - if this hadn't gone well the burn would have been called off at this stage. As it turned out, conditions were on the less flammable side, and intensive lighting was needed to achieve an effective burn.
- In the fire management plan, it was recommended that <20% of the total block area be burnt at one time. However, successfully meeting a target such as this is problematic due to logistics of managing the burn (i.e. in this block there were no natural boundaries such as gullies, rocky areas etc. that could be used to contain the fire internally). The only way that some of the block can be left unburnt, is by burning when flammability is low (such as for this burn). An exact area to be left unburnt can be difficult to meet.



## What next

- The most flammable areas, the gorse and the edges of the block were burnt (including large log heaps). This has achieved the aim of fuel hazard reduction, and will allow John to go back and safely conduct a burn of the less flammable areas knowing the boundaries are secure.
- Monitor for regeneration & recovery, to learn from this how to adjust the burn plan to achieve better outcomes.
- Continue to monitor log heaps, to ensure they are fully extinguished before spring.
- Follow-up spraying of gorse in autumn 2014.