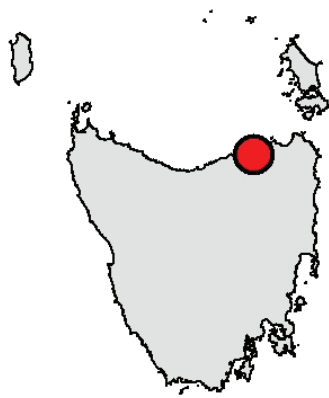


Planned burning in native bush for tree and shrub regeneration.

Richard Ramsay, Umtali, Bridport



Aim of the burn

To assess whether burning a native coastal woodland in poor condition would encourage regeneration and improve the health of the woodland.

Background

2.5ha remnant black peppermint coastal woodland with a sagg and bracken-dominated understorey and

some scattered shrub species including banksia, wedding bush and leptospermum. The fuel hazard rating was high with the block not burnt in over 20 years.

The block was not fenced from stock and was in poor condition with severe dieback of mature eucalypts and no regeneration. Similar blocks growing nearby were even more degraded with no live trees remaining.

This block was selected for the burn as it still had living trees and therefore it was considered a better chance for regeneration than other blocks on the property.

The burn unit is located less than 2km from Bass Strait (approximately 1km just west of Bridport) and is flat, with similar vegetation and fuels throughout.

Burn day – 21 April 2015

Weather Forecast

The weather had been fine for approximately 7 days leading up to the burn, and the forecast for the day of the burn was for light (6kph) southerly winds, 17°C and 50% RH. The forecast for the first two days after the burn was similar to the day of the burn with a change bringing rain forecast 3 days after the burn.

Equipment & People

One person lit the burn using a drip torch.

Fire suppression resources:

- 2x 400L slip-on units (each manned by two people); and
- 1000L tank with additional water positioned at the safety zone.

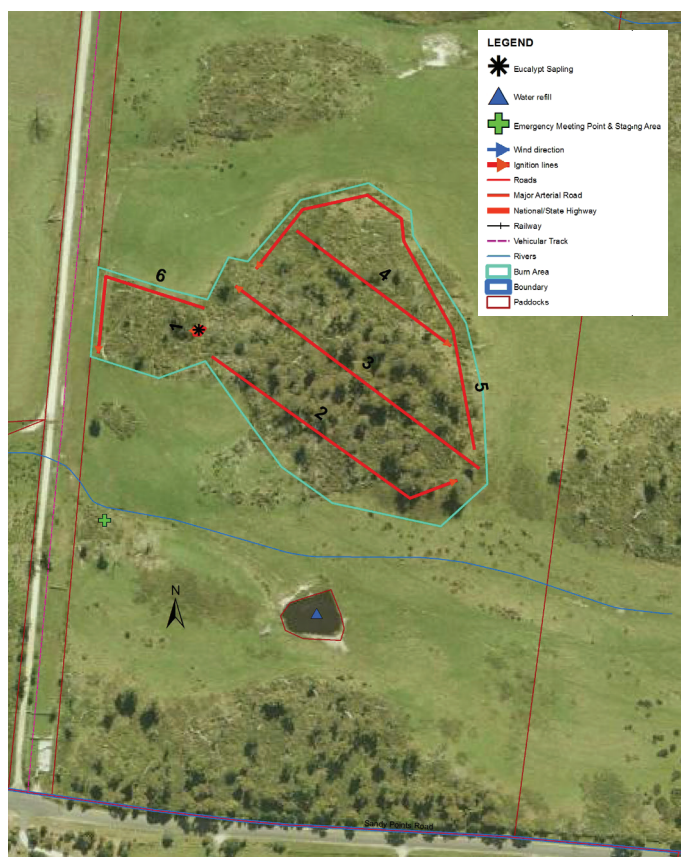
The burn plan

The lighting plan below shows how the burn was conducted. Steps are outlined below.

1. There was one eucalypt sapling on the NW corner of the unit which the landholder wished to protect. The sapling and surrounding vegetation was wet down

prior to surrounding vegetation being lit approx 5m from the sapling. Once this asset was protected, the burn commenced.

2. Secure the vulnerable edge (southern boundary), by lighting a line of fire 10-15 m in from the edge.
- 3.&4. In-fill burn the centre of the block by lighting lines of fire approximately 15-20m apart, starting on the southern side and moving to the northern side (this kept the lighting team out of the smoke).
- 5.&6. Finish the burn by lighting the northern and western edges.



Lighting plan



Land owner, Richard Ramsay

"I have observed many plantings of native woodlots and have been disappointed with the results but after time the results have been not so bad. I hope this is the case with our patch of bush."

Richard Ramsay

During the burn

The burn started at 12.45pm and was finished at 2:30pm. The wind direction shifted during the burn from NE to NW, however this didn't affect the burn plan. The wind was very light during the burn, and fuels were somewhat moist, so lighting intensity was increased.

Apart from protecting the sapling, no water was used during this planned burn. The surrounding green pasture acted as a very effective barrier.

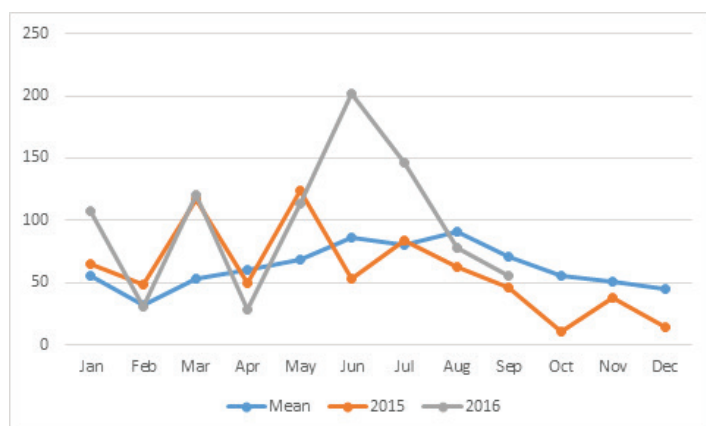


Grass boundary

The lighting pattern combined with differences in fuels through the unit created a mosaic effect, with some areas burnt more intensely and others less so (see below).



Intensity of the burn varied - where there were heavy fuels there was a good ash bed.



Bridport monthly rainfall

Following the burn

The block was fenced from stock within 4 months of the burn being done, thanks to a grant from NRM North. Unfortunately the months following the burn were drier than average, which may have impacted regeneration.

A detailed survey was conducted in October 2016 (18 months following the burn), to assess the impact of the burn on the health of the bush. Two 100m transect lines were established and five 5x5 m plots along each were assessed for cover (% dominance estimated), and seedlings in each plot were counted and identified.

Sagg, bracken and sword sedge had recovered very well, as had the weedy understorey species (flatweed, chickweed, sorrel and grasses). There was variation in the intensity of the burn noted in different plots. Regeneration appeared to depend on the proximity of a healthy seed source, presence of bare ground (space), in addition to a good ash bed. Only one eucalypt seedling was found in one plot, with one banksia seedling in another plot. There was however a diversity of understorey species in some plots, where the cover of introduced species was not so high (e.g. wattle, hibbertia, leptospermum, wedding bush, drosera, milkmaids, purple flag iris, trigger plant were all observed). An inspection of the block, outside the plots identified some significant clusters of blackwood seedlings.

Dieback in mature eucalypts was severe, and on the western side of the block the mature eucalypts had died (the burn may have been one stress too many, although being followed by a dry period may have impacted tree recovery post-burn).



Burn unit in October 2016 - the understorey has bounced back well.

Key learnings

- Within the prescribed weather parameters for a burn, lighting intensity can be used to achieve the type of burn that is desired.
- While the number of tree seedlings observed was disappointing 18 months after the burn, it won't be clear for another few years whether the burn was effective at improving the health of this patch of bush. It may be that where mature trees are clearly already stressed, that seed viability could be compromised. Spreading seed collected from healthy trees might be an option worth investigating.

What next

- Continue to control browsers (possum and wallaby) and monitor the regeneration & recovery of native plants.