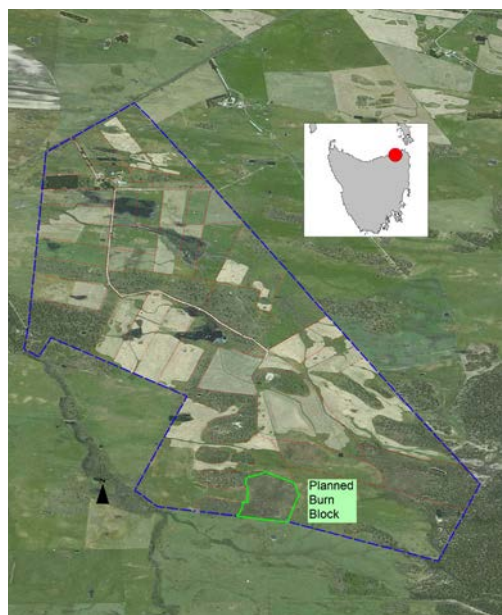


Ecological burn to stimulate grass tree and heath regeneration.

Anne Williams and Stephen Phillips, Dorset Downs



“Steve and I want to use fire as a tool to help regenerate our native vegetation on Dorset Downs. The planned burning project has given us the confidence to undertake burning on our property. It has shown us that it is possible to control fire—such as the back burning we undertook to secure boundaries.” Anne Williams

Dorset Downs - facts & figures

- 400ha
- Beef cattle
- 109ha of native vegetation, (black peppermint, cabbage gum woodland and heathland) with an average patch size of 8ha.
- Altitude - <10m above sea level
- Rainfall - 730mm
- 1 x full time labour units
- Fire fighting equipment - 1 x 1000L tank, loader, disc slasher
- Contract business - bulldozer and excavator



A fire action plan was developed for Dorset Downs identifying fire management goals including ecological and fuel reduction objectives, built assets, fire breaks, natural assets and resources available for fire management.

Aim of the burn

Encouraging grass tree and shrub regeneration.

Background

The 9ha coastal heathland is dominated by sagg and sword sedge with a low diversity of other species. The block has not been burnt in over 20 years and has an overall fuel hazard rating of high. Threatened sandy grass trees (*Xanthorrhoea arenaria*) are common throughout the block. Phytophthora root rot is also present. Some threatened animals which may be found in the area include the wedge-tailed eagle, Tasmanian devil and New Holland mouse.



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 60%

The recommended burn interval for this type of vegetation is every 10-15 years.

Lead up to the burn

Anne and Stephen bulldozed fire breaks around the northern, eastern and the majority of the western boundary 2 months before the burn leaving a 100m strip on the western boundary to be back burnt on the day of the burn. The southern boundary is a farm track which follows the property boundary. The weather forecast was monitored for 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 10-15km/ hr winds, humidity 65% and no rain were forecast.



Due to threatened sandy grass trees within the block, Anne and Stephen obtained a permit from the DPIWPE Threatened Species and Marine section before burning. This permit is based on their property Fire Management Plan, and doesn't need to be re-applied for every time they want to burn.

“On-the-ground preparation for the burn is the key to a successful burn—having good breaks in place which can be driven, watching the weather, easy and close access to water and removing hazards before lighting.”
Garth Bennett, Parks and Wildlife Service, DPIPW

The day of the burn (26 June 2013)

People and Equipment

6 people assisted with this burn.

Crew 1: 2x lighters

Crew 2: 2x lighters

Crew 3: 2x people manning 400L slip-on tank mounted on 4WD ute

A second 4WD ute towing a 400L trailer mounted tank was on-hand in case needed.

Each crew had access to a UHF radio.

Process

11am Test burn lit. Lighting plan decided, TFS permit burn implementation plan & a risk assessment completed.

12.15pm Briefing held to explain the plan, allocate tasks, highlight risks & contingency plans. All personnel were driven around the block to orient them.

Planned lighting pattern - 12:00pm

The first step was to burn in a 100m x 10m boundary on the western side. Back burning of this strip commenced at 12:15pm with 3 people (1x lighter & 2x patrol). Foam was used to reduce the amount of water needed to prevent the fire spreading west into the area which was not to be burnt.

1pm Burning the block commenced.

Actual lighting pattern - 1:00pm

There was more wind than forecast (20km/hr) however, based on the test burn and the secure boundaries it was deemed safe to proceed as planned. The actual lighting pattern varied slightly from the plan (which had originally been to commence lighting off the NW corner). Lighting the burn finished at 2.15pm and final patrol and mop up at 3pm.

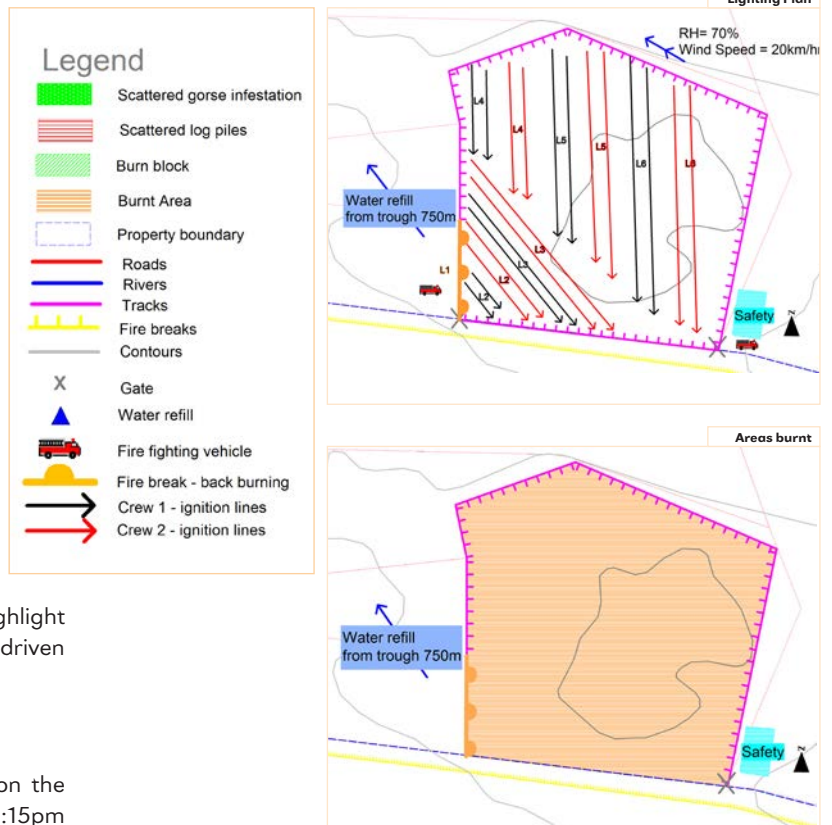
After the burn

Approximately 95% of the block was burnt. The block was monitored that night and the following day to ensure that the burn was completely extinguished.

There was 8.5mm of rain 5 days after the burn, which ensured it was fully extinguished and safe.

Key learnings

- By monitoring the weather conditions to identify potential days with high pressure systems, days without rain, soil moisture, suitable relative humidity and wind speeds, and with the burn to be done in a flammable vegetation type it was possible to achieve a very successful burn in mid-winter.
- Back burning can be used as a very effective way of putting in good breaks, if the conditions are appropriate, as they were in this case.



What next

- Monitor impacts on grass trees where phytophthora is known to occur (i.e. do they regenerate & survive, or is death rate increased?).
- Adapt future burning regimes and management based on results.