Guidelines for vegetation burning

Wildfires have been part of our environment for millions of years.

In dry forest types, wildfires can be expensive to fight and cause millions of dollars of damage on hot, windy days.

Fuel, or the amount of vegetation available to be burnt during a fire, directly affects the intensity of a fire. The more fuel on the ground, the greater the wildfire damage.

Fuel reduction burning aims to rob wildfires of their fuels before they start and to minimise their effects.

This booklet provides the necessary information to safely use fire to reduce fuel loads on and around your property.

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GUIDELINES FOR BURNING VEGETATION

INTRODUCTION

These guidelines provide fire users with information to plan, prepare and conduct:

- Fuel reduction burns
- Stubble burns
- Burning of piles heaps and windrows
- Prescribed fires

Before you start, if you are not prepared, not confident, not equipped or not experienced, you should consider other options for fuel reduction. These options include slashing, mowing, ploughing or grazing. You may slash and rake the vegetation into heaps or piles which are easier and safer to burn. Further, you may choose to contact your local fire brigade for advice or assistance in conducting the burn.

If you decide fire is the best method for fuel reduction, this document will provide information and guidelines that should enable you to achieve a safe and satisfactory outcome.

Your Property – Your Responsibility

Your local brigade will be quite happy to provide advice, but they are under no obligation to provide assistance. If you request the brigade to assist with the burn, an agreement between you and the brigade must be signed (Notice of Responsibility – Appendix A).

In many areas the local council's weed officer will be able to advise you about maximising the effectiveness of the burn for weed control which may provide long term benefits.

If after considering the options you decide to carry out the burn, the following information may be of assistance.

Your Fire - Your Responsibility

A fire burning on your property is your responsibility **regardless of who lit it and whether a fire permit period has been declared or not.** During a fire permit period you will require approval to light a fire for the purpose of clearing vegetation. This approval takes the form of a Fire Permit issued by a local Fire Permit Officer and is only issued **for burning vegetation.**

In most cases the Permit Officers are volunteers and may not be available during working hours. Planning your burn and obtaining a permit in advance will eliminate the inconvenience of not being able to obtain a permit at short notice.

Provided you **meet the conditions on your Permit** and take all reasonable steps to keep the fire on your property you are protected against any liability for damage caused by that fire should it escape.

If you are assisted by the local brigade, you will be required to obtain a Permit in your name (if in a fire permit period) and sign a Notice of Responsibility (Appendix A). Once the brigade has completed its agreed tasks and handed over it is up to you to undertake any action noted on the Notice of Responsibility.

If a fire permit period has not been declared, and you are being assisted by the local brigade, you will still be required to sign a Notice of Responsibility and undertake the actions noted.

If the area to be burnt exceeds two hectares it is necessary to complete and have a Burning Plan approved by the Permit Officer. If you require guidance to plan the burn the Permit Officer or the local brigade may be able to assist. **Note:** Stubble burns are exempt from this requirement.

If the area to be burnt is less than two hectares, you are not required to complete a plan. However, a 'Vegetation Burn Checklist' is available to assist you in identifying any issues that may need to be considered. An example is attached (Appendix C).

It is necessary to ensure your fire doesn't smoke out your neighbours or become a nuisance. Consider where the wind will take your smoke and who it is going to affect. Before you light the fire you will be required to notify your immediate neighbours and its good practice to let people know early so they can avoid the smoke.

Your fire should be registered with the Tasmania Fire Service by calling **1800 000 699.** This will avoid unnecessary call outs of brigades, many of whom are volunteers and would have to leave work to attend the call.

Fire does not recognise changes in ownership, only changes in fuels. If the fuel load on your neighbours' property is similar to yours, suggest a joint burn. This may save time, money, and increase the overall effectiveness of burning.

All burns should be planned, regardless of size or the time of year.

The following factors affect fire behaviour, and your ability to manage the fire safely:

- Fuels – vegetation type, quantity and arrangement
- Topography – slope, aspect
- Weather– temperature, relative humidity, wind speed and direction, fire danger rating
- Control Lines – boundaries for the fire
- Available resources – people, equipment, water supplies
- Safety considerations – protective clothing, communications, first aid
- Lighting techniques
- Mop up and patrol

Your plan needs to consider all of these factors. There are several checklists and burn planning forms designed to assist you. These are available from your local Permit Officer, or the Tasmania Fire Service website www.fire.tas.gov.au. A sample checklist is attached (Appendix B).

FUEL – YOUR FUEL YOUR FIRE

Fuel is simply the vegetation available to be burnt during a fire. The type and quantity of fuel, the way it is arranged and its dryness all influence fire behaviour. The most critical fuel is the fine fuel (less than the diameter of a pencil). Grass, leaves, bark, twigs (collectively known as litter) on the ground or suspended in the shrub layer dry quickly, in comparison to heavier or coarser fuel, such as limbs, logs, stumps etc.

The intensity of the fire and the flame height is proportional to the quantity and dryness of fine fuel. The greater the fuel quantity, the greater the intensity (hotter), the higher the flame height and the faster the fire spreads.

For example if the quantity of fine fuel is doubled the flame height and rate of spread of the fire also doubles, but the fire intensity is increased four times.

Increased flame height can lead to unsightly, long term scarring of bark and trees which may remain blackened for several years.

Fuel quantity is rarely consistent or uniform across an area and therefore the fire behaviour will vary according to the fuels across the area to be burnt. The way you light the fire (the lighting pattern) and the type and location of control lines should vary according to the quantity of fuel, the way it is arranged and the type of fuel.

If fine fuels are suspended in shrubs the flame height will increase significantly.

Heavy fuels will continue to burn long after the fire front has passed, thus increasing the chance of weather changes re-kindling or affecting the fire and increasing the need for regular checks to ensure the fire remains within the boundaries.

In early Spring and Autumn heavy fuels tend to be wetter and more difficult to ignite. By late Spring they have dried and trees and logs are easier to ignite and stay alight.

TOPOGRAPHY

The effect of topography on fire behaviour is significant. The intensity and spread of fire increases dramatically when travelling up a slope.and decreases when travelling down a slope.

As an example, if the slope increases by 10° then the rate of spread of the fire will double when compared to a fire burning on level ground in similar fuels under the same weather conditions. The intensity of the fire and the difficulty in controlling it will increase by a factor of four. On a downhill slope the reverse applies. ie. a fire backing down a 20 degree slope will travel four times slower than it would on flat ground.

The direction a slope faces (aspect) strongly influences fuel types and moisture conditions. A slope with northerly aspect receives more sunlight and generally will have different fuels and be much drier than other aspects. The fire behaviour may be more difficult to manage than other aspects. The fuels on these slopes will be dry enough to burn for a longer period of time than those facing another direction. The type of vegetation on different slopes and aspects is the best indicator of the dryness of the area. A significant change in vegetation type is a good indicator of changes in local moisture conditions.

WEATHER

Weather conditions have a significant influence on fire behaviour and it is your responsibility to obtain the weather forecast for the area where you are conducting the burn. This information is readily available from the Weather Bureau by telephone or online.

Weather information can also be accessed via the Tasmania Fire Service website www.fire.tas.gov.au.

Temperature and Relative Humidity

Temperature and relative humidity affect the moisture levels of the fuels. The higher the temperature and the lower the humidity, the dryer the fuels and the more intense the fire. Temperatures usually reach a maximum mid afternoon at the same time as the humidity reaches its minimum.

Ideally temperatures should be 20° or less and humidity should be 40% and increasing when fires are lit. Information on temperatures is included in weather bulletins in the media. More detailed information on forecast temperatures and humidity is available from the Bureau of Meteorology website www.bom.gov.au. This can also be accessed through the Tasmania Fire Service website www.fire.tas.gov.au.

Wind Speed and Direction

Wind speed influences the rate at which fire spreads, the direction it travels and the fire intensity. Winds usually begin to increase in strength from mid morning onwards and start to reduce in the evening.

Fuel reduction burning is safer carried out when winds are **less than 15 km/h.** The wind direction will influence the direction of fire travel. Wind direction is critical to lighting patterns and control line locations. Remember that many places have regular wind shifts during the day. Make sure that an unwanted wind shift is not going to turn your fire into an escape! **Wait for the wind shift to occur before lighting the fire.**

Local topography can also influence wind, changing both the speed and direction.

Changes in wind speed and direction have the most immediate and significant influence on fire behaviour and can carry embers outside the control lines which may start spot fires. If spot fires are unnoticed, or unattended, they can quickly develop into a fire which is beyond your means to control.

The table below provides a means of estimating wind speeds suitable for fuel reduction burning.

Beaufort Scale	Description	Wind Speed at 10m above ground in the open (km/h)	Wind Speed at 1.5m in the forest (km/h)	Specifications for estimating speed over land
0	calm	<1	<1	Calm: smoke rises vertically
1	light air	1 to 5	1.3 to 2.0	Direction of wind shown by smoke drift but not by wind vanes; slender branches and twigs of trees move gently.
2	light breeze	6 to 11	2.2 to 3.0	Wind felt on face, leaves rustle; ordinary vanes moved by wind; trees of pole size in the open sway gently; tops of trees in dense stands intermittently sway gently.
3	gentle breeze	12 to 19	3.2 to 4.4	Leaves and small twigs in constant motion; winds extend light flag; trees of pole size in the open sway very noticeably; tops of trees in dense stands sway.

If the forecast or actual winds exceeds force 3 on the Beaufort Scale, then a planned burn should not be lit.

FIRE DANGER RATINGS

Fire Danger Ratings were developed to integrate a range of weather values such as rainfall, temperature, humidity and wind speed into an indicator of how easy it may be to light or control fires.

Fire Danger Rating FDR	Fire Danger Index FDI	Description	Suitability for Burning Off
Low	0 - 5	Fires will be difficult to light and if not self extinguishing then easy to control with hand crews. Head fires stopped by small control lines	May be OK for dry heaps, conditions may be too quiet for ground or elevated fuels
Moderate	5 - 12	Head fire easily attacked with water. Difficulty of suppression low to moderate.	Ideal conditions for controlled burning
High	12 - 24	Difficulty of suppression high without water and perhaps machinery.	Not suitable for controlled burning
Very High	24 - 50	Fires easy to ignite and may be impossible to suppress without extensive machinery and favourable conditions.	Not suitable for controlled burning.
Extreme	50+	Fires are easy to ignite and not capable of being suppressed.	Not suitable for controlled burning.

In summary, no planned burn should be lit without advice if the forecast or actual Fire Danger Rating is greater than Moderate or if any of the forecast weather conditions are outside of the following parameters for the duration of the burn:

- Wind – no more than 15km/hr
- Relative Humidity – between 40% - 60%
- Temperature – no more than 20 degrees
- Soil Dryness Index – between 25 – 50

If a Fire Danger Rating greater than High is forecast for the day/s following the burn the fire must be mopped up and made safe before leaving, then patrolled and checked on a regular basis until the weather moderates.

The duration of the burn is dependant on fuel type. If burning bush, or heavy fuels, the burn should not proceed if the forecast FDI for the following 3 days is High or greater.

FIRE WEATHER INFORMATION

Listed below are the Fire Weather Forecast Stations for which the Bureau of Meteorology issues detailed fire weather forecasts and fire weather outlooks.

The information for the fire weather station nearest the planned burn area is available from a number of sources.

Bureau of Meteorology - Phone: 6221 2000 and ask for the Fire Danger Rating for a specific station.

State Fire Management Council Website
http://www.sfmc.tas.gov.au/part_a/intro_weather_map.htm and follow the link to Fire Danger Index Forecasts and Outlooks.

Fire Weather Forecast Stations

Bushy Park, Devonport, Dover, Fingal, Flinders Island Airport, Friendly Beaches, Geeveston, Hobart Airport, Hobart City, King Island Airport, Launceston Airport, Launceston City, Liawenee, Luncheon Hill, Marrawah, Maydena, Moogara, Mt Wellington, Ouse, Palmers Lookout, Scotts Peak, Scottsdale, Smithton, St Helens, Strahan Airport, Tarraleah, Tunnack.

CONTROL LINES

Before any fire is lit, the area to be burnt must be completely surrounded by a control line from which the fire can be managed.

Fire stops where it runs into something that won't burn and where it can't jump a gap to the next area of flammable material.

A control line can be a road, a track, a previously burnt area, a green paddock, a ploughed paddock, a rocky outcrop, a stream, or an area of wetter type vegetation. Regardless of what it is, the quality or the strength of the control line should **match the type of fire behaviour which is going to occur next to it**. If the vegetation is sparse, a line raked to mineral earth a metre wide may be sufficient. Alternatively if the vegetation is dense, in high quantities and dry (for example bracken/ti-tree scrub) the control line may need to be more than three metres wide with good vehicle access and perhaps even with some fall back options.

The basic rule of using fire is that a fire can be made safe provided it is surrounded by a control line to bare earth, a (dead) blackened fire edge or natural vegetation boundary such as green grass.

The control line should be taken down to mineral earth and be wide enough to prevent the spread of fire from radiant heat.

As a guide, the width of the break should be more than the length of the fuels to be burnt.

Take note of overhead power lines and ensure that the fire is a safe distance away and that the wind is blowing any smoke away from the lines.

Small quantities of material from the control line may be raked into the area to be burnt. Large quantities should be pushed or raked away from the area to be burnt.

Typical urban interface where accumulated fine fuels have been raked into a small pile ready for disposal by burning.

Multiple small piles can be burnt one at a time and easily controlled by one person with a garden hose, knapsack spray, buckets of water etc.

This is a safer and easier alternative than one large pile.

Warning – Even fairly small piles create an ash bed that may contain hot embers for days. The ash bed should be raked out and wet down until completely saturated and cold.

RESOURCING – EQUIPMENT AND PERSONNEL

Sufficient resources need to be onsite for the duration of the fire. The amount and type of resource will depend on the type, size and complexity of the area being burnt.

With good planning, adequate control lines and a well thought out lighting pattern, the demand on those resources should not be excessive. However, there will always be times when the fire intensity may temporarily increase next to the control line or a sudden wind change occurs and it is necessary to take action to prevent the fire crossing the control line.

That action may range from wetting down the fire with water, or making a control line wider.

A garden hose or knapsack spray may be suitable or a high capacity pump and water supply may be necessary. Similarly a rake may be suitable for strengthening a control line or a dozer, tractor or plough may be required.

The level of resources is entirely dependent upon the complexity of the fire, the expected fire behaviour and the level of risk.

The available resources must be capable of controlling or extinguishing the fire.

PLANNING THE BURN

The factors which affect fire behaviour and your ability to control a fire within pre-determined boundaries must be assessed if fuel reduction burning is to be undertaken safely. During a fire permit period, permits for fuel reduction burning of areas in excess of two hectares will only be issued on the basis of a Fuel Reduction Burning Plan being approved.

These plans can be prepared and approved in advance of suitable weather conditions.

Preparing plans in advance will eliminate the frustration of not being able to obtain a permit at short notice.

Burning Plan templates are available from Local Fire Permit Officers or the Tasmania Fire Service website www.fire.tas.gov.au. An example is attached (Appendix B).

LIGHTING PATTERNS

The method of lighting influences the way a fire develops and spreads, and determines how easy or difficult it is to control.

Maintaining control of the lighting pattern is the most powerful tool available to the person in charge of the burn.

The lighting pattern is influenced by topography, fuel load, location and strength of control lines and the weather.

- Lighting a fire along a control line on the downwind side means the fire backs into the wind.
- Lighting the fire at the top of a ridge line means the fire has to back down the slope.
- Lighting adjacent to downwind or upslope control lines first means the fire is less intense nearest the most vulnerable edges and has the added effect of strengthening the control lines as the fire develops.
- Once the control lines have been strengthened, use a downslope, or against the wind lighting pattern.
- Spot lighting rather than a line of fire has the effect of a slower moving less intense fire.

The picture above is an example of a fire lit along a control line. The fire is burning away from the line which reduces the chance of spotting, flame height is low which will keep scorch height low. This will result in a clean burn which has removed the fine fuels.

Test Fire

Having assembled appropriate personnel and equipment to conduct the burning it is wise to light a test fire first. The purpose of a test fire is to confirm your planned fire behaviour in terms of flame height, rate of spread and your ability to control it.

Select an area which is relatively level and with fuels which are typical of the main area to be burnt. With firefighting equipment on hand, light a fire and let it develop to 20-25 square metres.

Compare how the test fire is burning with what you intended.

If the flame heights are consistently a metre or more it means the weather and fuel conditions are such that the fire is likely to behave erratically as it develops and will be difficult to control. Put the fire out and postpone the fuel reduction burn to a more suitable day.

MOP UP AND PATROL

The phrase, “mop up and patrol” is used in firefighting to describe what needs to be done to leave the fire in a safe condition. Mop up and patrol must be a consideration of your planning; if you can’t commit to it, the burn should not proceed.

If the area burnt is relatively small, whatever smouldering or burning material remains should be completely extinguished.

If the size of the area burnt is too large for this to be possible then all smouldering and burning material within at least 30 metres of the control lines should be extinguished.

The area should be patrolled or checked regularly to ensure nothing flares up or has the potential to cause sparks to land outside the control lines. This needs to continue for a few days after the fire and then needs to be rechecked on the next windy or warm day. Don't be surprised if you see some smoke coming out of your fire some time after it appears to be out. This commonly happens as the day warms up, or the wind speed increases. Be prepared to investigate and ensure small smouldering patches are safe.

Further Information

The State Fire Management Council website is a continuously updated source of fire management information and links: www.sfmc.tas.gov.au.

The Tasmania Fire Service website has information on the Fire Permit system including the fires that don't need fire permits: www.fire.tas.gov.au

Your local fire brigade can provide advice about fire permits, burning off and local vegetation. Further, Tasmania Fire Service offices have staff that may be able to provide advise. Contact your local Tasmania Fire Service office or brigade by Freecall **1800 000 699.**

STUBBLE BURNING

A single permit may be issued for multiple stubble burns.

These are the only burns treated on this basis and it is still a mandatory condition that the permit holder registers the permit on 1800 000 699 **each time** they intend to burn stubble.

Planning for Stubble Burning

Not all parcels of land are the same shape. Topography varies from flat to undulating through to very steep. Lighting patterns will be influenced by these variable factors as well as by weather conditions.

For stubble burns there is no requirement to submit a written plan for approval, however, all fires should be planned and well thought out before lighting to minimise the chance of escapes.

The Stubble Burning Checklist (Appendix D) should assist with planning for stubble burns.

LONGER DURATION FIRES

Piles

Pile burns are carried out where other forms of disposal are impractical.

These guidelines are to provide a procedure for the construction of piles of leaves, sticks branches and other accumulated vegetation that has been cut, slashed and raked up in order to allow safe and efficient burning.

- The material to be burnt must only be vegetation. Household or building materials such as plastic, cardboard boxes treated timber etc**. must not be burnt**.

- All vegetation to be burnt should be at least three metres clear of any log, stump or other flammable material.
- Locate piles in open areas away from trees and overhanging branches.
- Piles should be well clear of power lines or telephone cables. Smoke and ash can cause power lines to arc and the heat will damage the lines.
- Construct long and wide piles rather than excessively high piles. Piles that are too high produce too much heat. If there is a large quantity of vegetation to be burnt construct several small piles rather than one large one.
- All material to be burnt should be dead and dry. Construct the pile so that it is well aerated and does not contain quantities of soil.
- All material in the pile should be less than 100 mm in diameter.

Safety Considerations

- If a fire permit period has been declared you will need to obtain a permit prior to conducting the burn.
- Before lighting the pile check that the weather conditions are within the parameters for burning vegetation as set out on the permit.
- Ensure you have adequate resources to control the burn, extinguish any possible spot fires and completely extinguish the pile after the burn has been completed.
- Supervise the burn constantly after lighting to ensure there are no spot fires in surrounding vegetation.
- If multiple piles are to be burnt, burn one at a time unless adequate resources and operators are present at each pile being burnt.
- Completely extinguish the pile immediately after the burn has been completed, rake out and wet down until completely saturated and cold.
- After a pile burn has been completed and extinguished the ground may remain hot for quite some time. The burn area should be checked regularly until the ground is cool.

An example that has the potential to cause problems:

- High and untidy
- Too close to surrounding vegetation
- Large ember shower produced soon after lighting
- Large quantities of heavy fuel
- Will burn for a long time and will require someone to be in attendance
- Unable to manage safely, even with significant firefighting resources

Example of a smaller more manageable pile:

- Cleared all around
- Well aerated and clean burning
- Dry, small diameter fuel
- Short duration and can be easily extinguished if conditions change
- Easily managed by one person with a garden hose

Smaller more manageable piles which will burn for a short time are a preferred option over a large pile which will burn for a long time.

An example of a larger but well constructed pile:

- Dry, well aerated fuel which will create enough heat to establish the fire in the heavy fuels
- Well clear of surrounding vegetation
- Accessible all round
- Complete combustion will result in a clean burn with little residue

A poorly located and constructed pile which illustrates the outcome when heavy fuels are too green to burn.

Given the amount of heavy fuel in the pile, there may be other disposal options rather than burning.

This example illustrates several problems:

- Pile is constructed at the bottom of a slope so it will need a large break on the uphill slope.
- Too close to surrounding vegetation
- Too close to power lines
- On the edge of a deep channel making access difficult

A poorly constructed pile:

- Large quantities of earth pushed into the pile with machinery
- Long duration smouldering fire
- Difficult to control or extinguish even with significant firefighting resources

The same pile as the previous picture after it has been burnt. It has left a large pile of earth containing material which will continue to smoulder for days.

A change in weather conditions could result in this smouldering material being exposed and blown into the surrounding paddocks.

Problems with this pile:

- Built at the bottom of the slope
- Too close to surrounding vegetation
- Once this fire is lit it has only one way to go, up the slope
- Unable to manage safely, even with significant firefighting resources

This pile is built on a marsh. If the fire is lit after an extended period of dry weather it has the potential to start a peat fire.

Fires in peat can go unnoticed until they extend to the surrounding vegetation and create significant suppression problems.

WINDROWS

The aim of burning heavy fuels pushed up into heaps or windrows is to remove as much fuel as possible, including large logs.

The difference from piles is that windrows are always going to be long burning because of fuel size.

This means they are alight for many days, or even weeks and provide a potential source of escape, particularly after a dry winter, or if there is an early start to the fire season.

Before committing to pushing heavy fuels into windrows and then burning them, consider any other viable options to remove the fuel such as harvesting the larger logs for firewood and shredding the residue for garden mulch.

This option removes the potential for fire escape and may have a significant financial benefit.

If burning is the only viable option, the following guidelines should be followed:

- When constructing windrows use root rakes or excavators rather than blades to minimise the inclusion of earth
- To encourage complete combustion, leave the windrow aerated as much as possible
- Allow time for the fuels to dry before attempting to burn
- Leave a 20 metre wide gap every 50 metres along windrows
- Do not construct windrows under or near power lines
- Leave a safe distance between the windrow and standing vegetation
- Plough or blade around windrow to reduce flammable vegetation
- Do not rely on marshy type ground as a barrier

Examples of poorly constructed windrows:

- Too close to surrounding vegetation
- No breaks
- Large quantities of heavy fuel
- Too green for complete combustion of heavy fuels
- Long duration smouldering fire
- Difficult to control even with significant firefighting resources

Burning

This must be done when the surrounding fuels will not carry a fire. The guidelines are as follows:

- Commence late Autumn – early Winter. If burnt in Spring, windrows will need constant attention and resources until the fuel is fully consumed. TFS does not support windrow burning before the fire season.
- After 20mm+ of recent rain (within five days)
- SDI below 100 and falling
- Temperature 10-20 degrees
- Relative humidity 40% plus
- Wind less than 15km/hr

After ignition, from time to time, the rows should be carefully pushed in with a machine. This will ensure complete combustion.

Mop Up and Patrol

Continually monitor windrows until they are completely out. Walk the windrows feeling the soil for heat and looking for smoke, particularly on warm days. This should be done in the morning and mid afternoon.

If the weather is showing a trend towards warm, dry and windy conditions, action must be taken to prevent escapes.

Remember, Your Fire, Your Responsibility

BARK HEAP MANAGEMENT

Bark heaps pose two major problems in fire management:

1. They may spontaneously ignite
2. Once lit they may continue to burn into the summer resulting in escapes

Logging practices which create bark heaps are being discouraged. Bark should be returned to the coupe and dispersed during or at the end of the operation.

It is Forestry Tasmania policy that bark and waste will be returned to the forest unless treated and burnt in accordance with the following:

- Bark and large diameter (25-35cm) waste wood will be separately heaped at least 40 metres from flammable vegetation.
- Bark heaps will be piled onto a raft of light, <20cm diameter limb wood, placed on a well drained site previously cleared to mineral earth. The bark and waste wood heaps will be isolated from adjacent flammable material, cleared to mineral earth. Light limb wood may be included in either bark or waste wood heaps.
- Rubbish, metal, oil and other foreign matter will not be included in either bark or waste wood heaps.
- Compacted bark will be aerated before being added to bark heaps to be burnt.
- Bark and waste wood heaps will not be ignited until the summer fire danger period has passed as indicated by the lifting of the fire permit period or a reducing soil dryness index.
- Bark heaps which are still burning when the local SDI exceeds 50 in spring will be extinguished.

PRESCRIBED FIRES

These are fires which are covered by the Fire Service Act or Regulations and include:

- Fires for the burning of carcasses
- Fires for cooking or warmth
- Burning of garden waste less than one cubic metre in volume.

Fires for the above purposes may be lit without a permit but are subject to the following conditions:

BURNING OF CARCASSES

Disposal of carcasses by burning is rarely satisfactory, they should be buried. If burning is the only viable option the following points must be considered and adhered to:

- As with all fires, the burn should be planned.
- The fire should be registered by calling 1800 000 699. This will prevent unnecessary call outs of brigades.
- The fire must not be lit in or on peat, humus or marram grass, or within three metres of any stump, log or standing tree.
- The area within three metres of the fire must be free of all flammable material. This is a minimum distance, if the fire is large the distance will need to reflect the size of the fire.
- The fire must not be left unattended unless it has been completely extinguished.
- To consume a large carcass eg a cow, will require a large quantity of well aerated dry fuel.
- It will be a long duration fire which may be affected by changes in weather (see notes on pile burning).
- The smoke and smell generated by the burning carcass may be offensive and subject to environmental regulations.
- Before ignition, the abdomen and paunch of the carcass should be slashed open to allow gases to escape. This will eliminate the possibility of the carcass exploding during combustion.
- Although the fire may be lit without a permit you are still legally required to keep the fire on your property.

The example above would be ideal for burning a small carcass:

- Well aerated and free burning
- Dry small diameter fuel
- Large amount of heat generated
- Easily added to if necessary
- Can be quickly extinguished with a garden hose if conditions change

FIRES FOR COOKING OR WARMTH

The size and characteristics of a fire for either of the above should reflect the purpose. Consider the following:

- The fire should be registered (if possible) by calling 1800 000 699.
- The fire must not be lit in or on peat, humus or marram grass, or within three metres of any stump, log or standing tree.
- The area within three metres of the fire must be free of all flammable material.
- The fire must not be left unattended until it has been completely extinguished.
- Cooking is more efficient when carried out over a bed of coals rather than a free burning fire.
- A fire for warmth will be more efficient when free burning and producing radiant heat.
- When building a fire for cooking or warmth, smoke is undesirable so select dry kindling, dry heavy fuel less than 100 mm in diameter and ensure the fire is well aerated.
- A fire for warmth, when properly constructed, should not need to be greater in size than half a cubic metre.

Example of a well prepared cooking fire:

- Clear of surrounding vegetation
- Enclosed by rock barrier
- Good bed of coals

A cooking fire can also be built in a shallow hole dug in the ground.

At the completion of cooking it can be covered with soil and safely left.

The above example is a fire which would provide warmth for a group of people:

- Clear of surrounding vegetation
- Well aerated and free burning
- Generating large quantity of radiant heat
- Minimal smoke
- Easily extinguished with a garden hose or buckets of water if conditions change.

The example above would provide warmth for one or two people and would burn down to a bed of coals suitable for cooking.

BURNING OF DOMESTIC GARDEN REFUSE

The practice of burning domestic garden refuse in heaps or incinerators in suburban back yards is discouraged by the Tasmania Fire Service. In some municipalities there are council bylaws which prohibit the practice.

If you choose to dispose of domestic garden refuse by burning, within any council bylaws, you must consider and adhere to the following:

- Only burn domestic garden refuse.
- The fire should be registered by calling 1800 000 699.
- The fire must not be lit in or on peat, humus or marram grass, or within three metres of any stump, log or standing tree.
- The area within three metres of the fire must be free of all flammable material. This includes timber fences.
- The fire must be less than one cubic metre in size.
- The fire must not be left unattended until it has been completely extinguished.
- The material to be burnt must be dry, free of earth and well aerated to allow free burning with minimal smoke.

Typical domestic garden refuse fire where the surrounding ground fuel will be raked up and added to the fire as it burns down so keeping it less than one cubic metre.

- Dry fuel
- Well aerated
- Free burning
- Minimal smoke
- Short duration
- Easily and quickly extinguished if conditions change

WOOD WASTE

A fire for the disposal of wood waste by a factory, sawmill or similar premises is a prescribed fire but a wood waste permit must be obtained for this purpose and the fire lit in accordance with the provisions outlined on the permit.

Wood waste permits can only be obtained from TFS District Staff.

Before committing to burning wood waste explore whether other alternatives such as selling the waste for firewood or chipping are viable.

If a day of total fire ban has been declared all permits are revoked and no fires may be lit in the open.

SUMMARY

Vegetation can be reduced or modified in a number of ways which will increase bush fire. These include mowing, slashing, grazing, mulching, ploughing, irrigating or burning.

If, after assessing the options, burning is deemed the most effective method then the following points need to be considered:

- If you are an inexperienced or infrequent user of fire in the open you should seek advice before proceeding with a burn.
- A fire burning on your property is your responsibility, regardless of who lit it.
- If a Fire Permit period has been declared you must obtain and register a Fire Permit before you light your fire.
- Fires which do not require a permit should still be registered by calling **1800 000 699.**
- Having obtained and registered the Fire Permit, you must comply with the conditions on that Fire Permit to be protected from liability for damage caused by the fire escaping.
- All fires lit in the open at any time and for any reason should be planned. For areas greater than two hectares a plan must be submitted and approved (stubble burns excepted).
- The available resources must be capable of controlling or extinguishing the fire.
- Obtaining current and predicted weather information for the area where you are conducting the burn is your responsibility.
- Obtaining information on council bylaws relating to burning in the open is your responsibility.

Note:

If changes in conditions during the burn are affecting your ability to control the burn **call 000** for assistance from your local brigade before it becomes an escape.

Appendix A

NOTICE OF RESPONSIBILITY

(To be completed prior to any work being undertaken)

07256

I, the landowner/occupier of the property specified below, have requested that the Tasmania Fire Service carry out burning operations on that property. I understand that the Fire Service Act 1979 limits the liability of the State Fire Commission and members of the Tasmania Fire Service for any injury or damage caused as a consequence of these operations

Signed by ……..…….. ……
(Name of landowner/occupier) *(Signature)*

of ……
(Address/property name)

Brigade Contact ……..…..……..
(Name of Brigade Member) *(Signature)*

Date ……/……./ 20…….

ACTIVITY RECORD

(To be completed before the TFS leaves the property)

Time of brigade arrival:……

Time of brigade hand over of burning operations to landowner: ……..……

Any hotspots identified to the landowner: (Tick) ☐ Details: ……..….
……

Landowner advised to monitor area: (Tick) ☐

Other issues/comments:
……
……

I agree that the information recorded in the Activity Record is correct in every respect.

……..….. …..……..……..
Signed by landowner/occupier *Signed by brigade member*

Date: ……/……./ 20…….

Appendix B

TASMANIA FIRE SERVICE BURNING PLAN

PERMIT NO ISSUED: ……..…

A PERMIT HOLDERS DETAILS

Given Name: _____ Surname: _____

Street/Road Number/Name: _____

Suburb/Town/Location: _____

Postcode: _____ State: TAS Contact Phone No/s: _____

B LOCATION OF PLANNED BURN

Is the location of planned fire same as on permit holders details? Yes / No *(If No complete details below)*

Street/Road Number/Name: _____

Suburb/Town/Location: _____

or

Map Sheet Name: _____ Scale: _____ Grid Reference: _____

C DESCRIPTION OF AREA

Vegetation Type/s: Bush Scrub Grass Slash
Logheaps

Years Since Last Burn: _____ Size of Area to be Burnt (Ha): _____

Topography – Predominant Aspects: North East South West

– Predominant Slope: Flat Undulating Moderate Steep

Boundaries/Control Lines: Roads Raked Lines Stream/Water Course

Green Crop Cleared/Ploughed Ground Recent Burnt Area Tracks

What needs to be done to ensure Control Lines are secure: _____

_____

_____

What is the most vulnerable edge: _____

D WEATHER

Temperature should not exceed 20°. Relative humidity should be above 40%.

Wind speed must be less than 15kph. Wind direction **must not be from**: _____

Nearest Fire Weather Station_____ Forecast Fire Danger Rating (Day of Burn) _____

Next Three Days	Day 1	Day 2	Day 3
Fire Danger Rating			

E PERSONNEL and RESOURCES

Number of personnel to be on site: _____

Name of person in charge: _____

Firefighting equipment on site: _____

_____

Firefighting equipment available at short notice: _____

_____

F LIGHTING TECHNIQUE

How many people will be physically lighting fire: _____

How long will it take to light fire: _____

What is the most suitable time of day to light fire: _____

How long will the fire burn for: _____

Describe the sequence of lighting: (For example southern boundary 1st, once secure spot lighting down slope/upwind etc.):

_____

_____

_____

G PATROL / MOP UP / EXTINGUISH

Number of personnel available to patrol and extinguish perimeter and hot spots within 100 metres of perimeter over the next three days: _____

What firefighting equipment will be available for this purpose: _____

_____

H RISKS

Identify any assets which may be at risk as a result of the planned burn: _____

_____

I ESCAPES

If the fire escapes or the fire activity is such it appears likely to escape, list your actions: _____

_____

_____

_____

J PERMIT HOLDER'S OBLIGATIONS

This plan forms the primary conditions of your fire permit, it is not valid until approved by the Fire Permit Officer and has the permit number written in the top right hand corner of the front page. This plan must be retained by you and you must be able to produce this plan and your fire permit upon the request of an authorised officer at any time during the duration of the fire. Failure to retain this plan will be deemed to be a breach of the conditions of permit. A copy of the plan must be provided for the permit officer.

Upon the declaration of a Total Fire Ban your permit is revoked. If your fire is alight you must take immediate steps to stop it spreading and extinguish it.

If you need help dial 000 and ask for the Fire Service

K ADDITIONAL INFORMATION

FIRE WEATHER INFORMATION

Listed below are the Fire Weather Forecast Station for which the Bureau of Meteorology issues detailed fire weather forecasts and fire weather outlooks. The information for the fire weather station nearest the planned burn area is available from a number of sources.

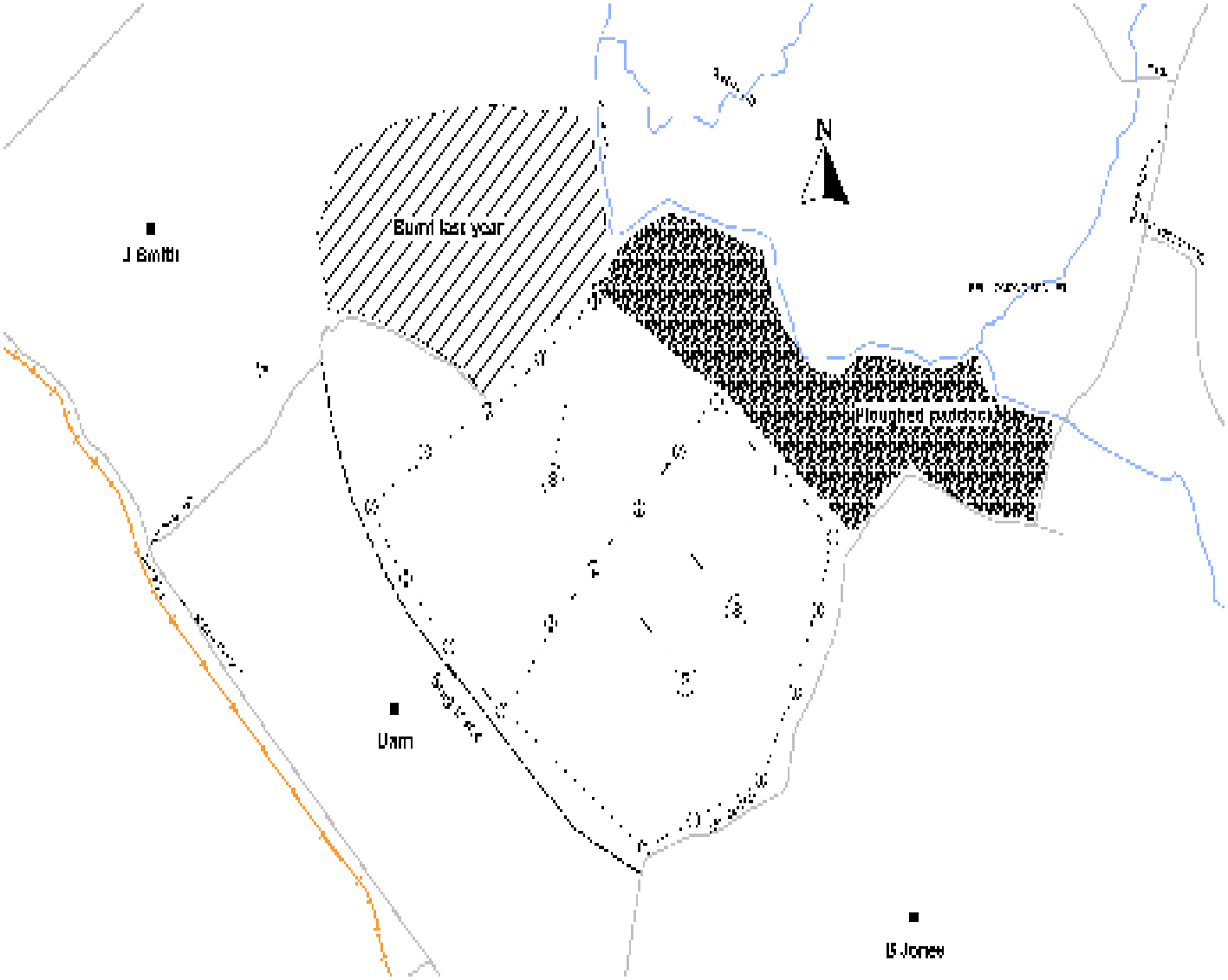
Bureau of Meteorology Ph: (03)62212000 and ask for the Fire Danger Rating and other information for a specific station. The website www.bom.gov.au has additional information.

Tasmania Fire Service Web Site www.fire.tas.gov.au has links to other weather information.

State Fire Management Council Web Site www.sfmc.tas.gov.au and follow the link to Fire Danger Index Forecasts and outlooks.

Fire Weather Forecast Stations
Bushy Park, Devonport, Dover, Fingal, Flinders Is Airport, Friendly Beaches, Geeveston, Hobart Airport, Hobart City, King Is Airport, Launceston Airport, Launceston City, Liawenee, Luncheon Hill, Marrawah, Maydena, Moogara, Mt Wellington, Ouse, Palmers Lookout, Scotts Peak, Scottsdale, Smithton, St Helens, Strahan Airport, Tarraleah, Tunnack.

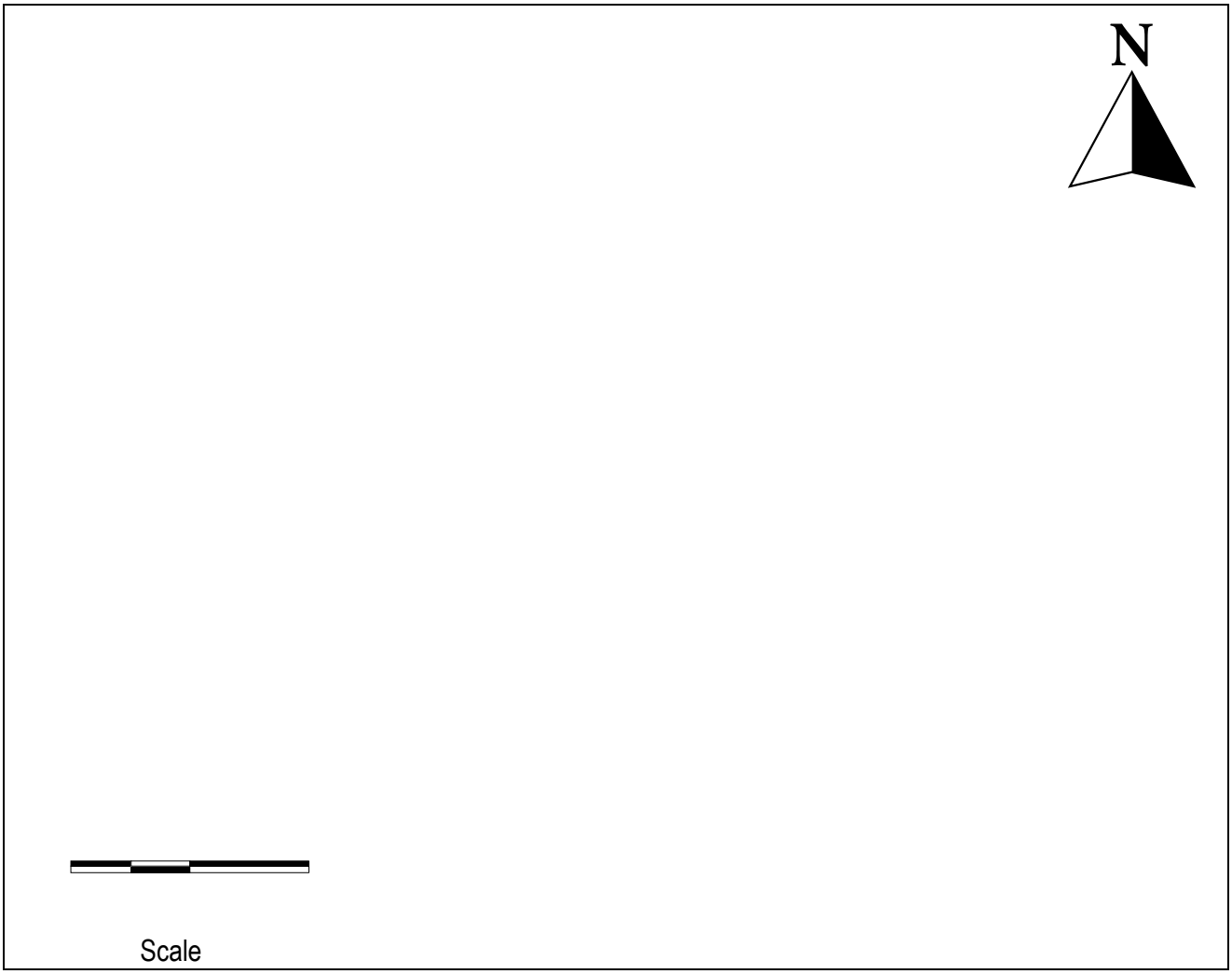
EXAMPLE OF PLAN OF BURNING AREA AND LIGHTING TECHNIQUE



LEGEND FOR BURNING PLAN

W	Water Point	———	Road
X	Start Point	- - - - -	Track
S →	Down Slope	XXXXXXXX	Control Line
T	Tanker	~	Stream/Creek
■	Assets/Neighbours	①→①→ direction	Lighting sequence &
		②→②→ direction	Lighting sequence &

PLAN OF APPLICANTS BURNING AREA AND LIGHTING TECHNIQUE



SYMBOLS FOR BURNING PLAN

(W)	Water Point	———	Road
(X)	Start Point	- - - - -	Track
(S)→	Down Slope	XXXXXXXX›	Control Line
(T)	Tanker	~	Stream/Creek
■	Assets/Neighbours	①→①→ direction	Lighting sequence &
		②→②→ direction	Lighting sequence &

This Plan Approved By: (PRINT)..... (SIGNATURE).....

Position: ……Date: …../…./….

Appendix C

Vegetation Burn Checklist

Assessment - prior to burning

Proposed date of burn:……..Location:…….

- ❒ Consider the objective/s of the burn and any alternatives to burning.
- ❒ Contact the local council and check for any bylaws which may prohibit burning.
- ❒ Estimate the area in hectares or square metres, or the size of a pile/s in cubic metres.

.....

- ❒ Check that access to the area is suitable for the resources necessary to control the burn.
- ❒ Control lines to be completed prior to burn.

.....

.....

- ❒ Areas/assets to be protected are identified.

.....

.....

- ❒ Hazards/safety issues identified (eg overhead power lines, direction of smoke travel)

.....

- ❒ Water point identified and access checked
- ❒ Contingency plan worked out for any escapes
- ❒ Resource requirements determined
- ❒ Neighbours to be notified identified
- ❒ Advice sought from Permit Officer or local brigade if you have any doubts.
- ❒ Permit obtained if in a Fire Permit Period

Day of the Burn

- ❒ Weather forecast obtained, current and predicted for the duration of the burn
- ❒ Fire registered by calling **1800 000 699**
- ❒ Neighbours notified
- ❒ Resources assembled/ checked
- ❒ Final check of boundary (control lines)
- ❒ Briefing of any assisting persons
- ❒ Test fire results: Flame height:……metres. Rate of Spread:……metres/minute
- ❒ Lighting plan/method .....

.....

- ❒ Start time……Finish time……
- ❒ Mop up/black out completed
- ❒ Effectiveness of burn, objective/s of the burn achieved - yes/no
- ❒ Necessity and frequency of further checks of the burn area.

Appendix D

Stubble Burn Checklist

Proposed date of burn:……..Location:……

- ❒ Control lines to be completed prior to burn

.....

.....

- ❒ Contingency plan for escapes

.....

.....

- ❒ Hazards/safety issues identified (eg overhead power lines, smoke from poppy stubble)

.....

.....

- ❒ Water point identified .....
- ❒ Neighbours to be notified (consider smoke travel)
- ❒ Resources required……

- ❒ Weather forecast obtained (no wind for poppy stubble burns)
- ❒ Permit obtained and registered or fire registered if not in a Permit Period. Call **1800 000 699**
- ❒ Resources assembled/ checked
- ❒ Final check of boundary (control lines)
- ❒ Briefing of assisting persons
- ❒ Lighting plan .....

.....

- ❒ Start time…….Finish time……
- ❒ Mop up/black out completed
- ❒ Patrol frequency arranged (if necessary)…….

Checklist completed by:……Date:……..

Notes.....

.....

.....

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.....

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.....

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Disclaimer

Whilst the State Fire Commission has made every effort to ensure the accuracy and reliability of these guidelines, the State Fire Commission does not accept any responsibility for the accuracy, completeness or relevance to the viewer's purpose, of the information in these guidelines and those viewing it for whatever purpose are advised to verify its accuracy and to obtain appropriate professional advice.

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