



This bulletin is published by the Department of Water Affairs and Forestry

In this edition of the Veldfire Bulletin we take a closer look at how property owners can protect their economic assets - homesteads, farm buildings and livestock – from wildfires.

We thank you for the feedback we have received from you regarding previous editions of the Veldfire Bulletin and look forward to your continued communication of comments and requirements to us. This is best done through our team of regional fire advisors. Their contact details are on the last page of this bulletin.

How prepared are you for wildfires?

Chapter 5 of the National Veld and Forest Fire Act, No 101 of 1998 places a duty on all owners to have equipment and available personnel to fight fires on their properties.

The final responsibility for veldfire management lies with the owner of the land. The Act affirms this clearly in sections 17 and 18. Veldfire management within a Fire Protection Association (FPA) must find a balance between the plans of the individual property owners, and the collective plans of the FPA, established for the common good.

Each owner is obliged to manage veldfires on his or her own property, integrating prescribed burning and wildfire protection plans. As FPA members you should agree on standards for integrated veldfire management plans, using examples of good practice in your area, and apply these to your property.

Wildfire: An unwanted veldfire

An integrated veldfire management plan must address:

Fire protection: All activities designed to protect an area (including human life, property, assets and values) from damage by wildfire, including prevention, preparedness, suppression (response) and recovery.

Fire prevention: All activities concerned with minimising the incidence of preventable wildfires (unwanted veldfires of human origin).

Fire preparedness: All activities undertaken in advance of the occurrence of a wildfire to minimise the area burnt, the loss of life, the damage to assets and to ensure more effective fire suppression.

Fire suppression (response): Desirable levels of readiness of available personnel, equipment and systems for the detection and rapid control of wildfires.

Fire recovery: All activities undertaken after a wildfire concerned with restoring any harmful impacts that such a fire may have had.

In South Africa wildfires are a reality. However, they do not have to result in the loss of human life or assets. In this bulletin we will highlight certain aspects of preparedness that will assist you to manage veldfire risk on your property.

Veldfire risk: the chance of a veldfire igniting, spreading and causing damage to one or more assets, measured in terms of likelihood and consequences.



Fire fighter using a drip torch





WHAT CAN YOU DO C

Houses do not have to be specially built to protect you from a wild fire.

- Avoid complicated rooflines where embers can lodge. ①
- Wind accompanying a veldfire can be very strong and it is important that roofing material is firmly fixed.
- Thatch roofs are particularly vulnerable and should be fitted with a sprinkler system. ②
- You need easy access into the roof cavity to check for embers that have found their way in during a wildfire.
- Fire place should be fitted with metal screens to prevent sparks blowing down the chimney. ③
- Fit vulnerable windows with clip-on wire-gauze screens. ④
- Clear gutters, which collect leaves and other flammable debris. ⑤
- Do not store firewood against buildings. ⑥
- Avoid timber trellises on sides of buildings that could be exposed to a wildfire.

Protecting your livestock

Loss of farm animals can most easily be prevented by:

- Preparing and maintaining fuel-reduced areas onto which stock, especially breeding stock, can be moved and held during a wildfire. ⑦
- Where possible have shade and water available in these areas.
- Take measures to protect your fodder reserves.

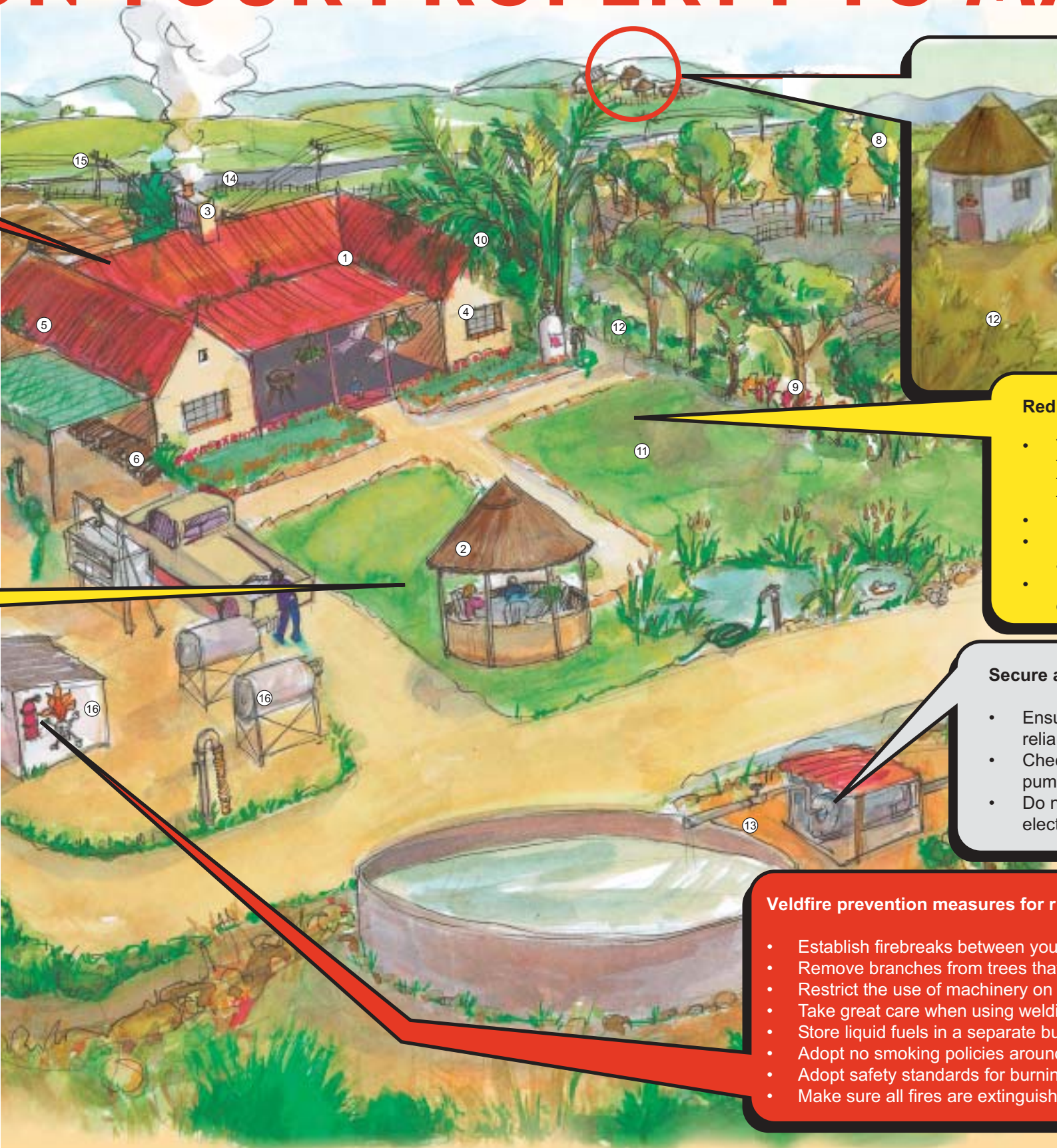
Landscaping your garden for veldfire protection

You can use your garden for fire protection, the objective being to reducing radiant heat or preventing direct flame contact reaching buildings. The garden should also be easy to walk through in any direction to allow fast access to all parts.

- Plant and maintain screening trees, at a safe distance from houses, to reduce wind speed and filter out burning embers. ⑧
- Avoid dense clumps of trees especially if they are not fire resistant.
- Replace highly flammable trees (i.e. trees with fibrous or stringy or loose bark).
- Remove dead trees, dead branches and accumulated dead leaves from within the tree canopy.
- Prune trees to avoid a continuous fuel bed from ground level into tree canopies. ⑨
- Remove trees close to, or overhanging or touching buildings. ⑩
- Ensure trees are a safe distance (at a distance of at least the height of mature trees) from buildings and power lines.
- Position open spaces, water features or lawns between buildings and the most likely direction a wildfire will approach from.
- Maintain short well-watered lawns, cultivated soils or gravelled areas beneath trees. ⑪



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Veldfire prevention measures for r

- Establish firebreaks between your
- Remove branches from trees tha
- Restrict the use of machinery on
- Take great care when using weldi
- Store liquid fuels in a separate bu
- Adopt no smoking policies around
- Adopt safety standards for burnin
- Make sure all fires are extinguish



MANAGE VELD FIRE RISK?



Reduce the fuel on your property

The level of hazard depends on the continuity, the proportion of dead and live material, the thickness of foliage and twigs, and the flammability of the vegetation.

Reducing fuel will reduce the fire hazard.

Reduce the amount of fuel for at least 20 metres around buildings. ¹²

Complete your fuel reduction activities ahead of the fire season.

Ensure an adequate supply of water

Ensure that your water supply is sufficient and reliable.

Check water levels in reservoirs and check pumps regularly when fire danger is high. ¹³

Do not rely solely on electric pumps as the electricity supply could fail during a fire.

Prevent rural property owners

Clear land and any public road or railway. ¹⁴

Check that it could cause a power line to short circuit. ¹⁵

Check that it is safe on days when the fire danger is high.

Use cutting, cutting and grinding equipment outdoors.

Keep equipment well away from houses. ¹⁶

Do not store high hazard areas such as fuel stores.

Do not burn rubbish or disposing of hot ash. ¹⁷

Do not leave them unattended. ¹⁸

The risk of losing life and property during a veldfire is influenced by:

- The condition and location of your buildings
- The type and amount of the surrounding vegetation
- The availability and reliability of your water supply
- The fire fighting capabilities of yourself and your staff

Where your house is located on your property is important.

- Some parts of your property will be safer.
- Flat ground is safer as for every 10° increase in the slope the rate of spread and intensity of a veldfire will double.
- Properties situated next to areas of dense vegetation are more vulnerable.

Why do houses burn?

- Burning embers landing on or near the house.
- Radiant heat ahead of the fire penetrating the house.
- Direct contact from flames.

You need to isolate buildings from embers, radiant heat and flames.

Radiant heat

- This is the heat generated by fires.
- This heat affects you well before the flames reach you.
- It can kill through heat stroke if you are not protected.
- It only travels in straight lines and a barrier between yourself and the heat source will effectively shield you.

Building design and construction

One of the main causes of buildings catching fire during wildfires is through burning embers. These are often carried ahead of the fire by strong winds and find a way into houses setting fire to furnishings. Outside houses embers can set fire to a doormat, a woodpile or dead leaves that have accumulated in gutters.

All buildings are at risk when situated close to flammable vegetation. Although brick and concrete masonry walls are inherently non-combustible, many architectural features such as windows, exposed timber roof members, fascias and doors are vulnerable to fire. Buildings with thatch roofs or other combustible roof cladding such as bituminous-based fibre sheeting or plastic, as might be found in informal settlements, are particularly vulnerable. Window glass can fail relatively easily during a fire allowing high levels of radiant heat to penetrate the interior or allow burning embers to enter. This then exposes combustible furnishings such as curtaining to direct heat and ignition sources.

DO YOU HAVE SUITABLE EQUIPMENT TO SAFELY FIGHT A WILDFIRE?

It is essential that adequate equipment and staff are available to respond rapidly when a wildfire threatens your property. Remember that rapid response times are crucial to preventing a small fire from spreading. You must maintain your fire-fighting equipment in a serviceable and safe condition, and locate it where it is readily accessible.

Some useful items of fire-fighting equipment

- Drip torch ①
 - Fire beaters ②
 - Rake hoes ③
 - Rakes, spades, shovels, slashers and axes
 - Chain saw and brush cutter
 - Fire hoses and fittings
 - Buckets (preferably metal) and mops
 - Knapsack spray ④
 - “Bakkie Sakkie” ⑤
 - Portable pump
 - Ladders
 - Torches plus spare batteries
 - Cellphones and portable two-way radios
- ① **Drip torch:** A hand-held device for igniting fires. It consists of a fuel tank with a nozzle through which the burning fuel is “dripped” onto the vegetation.
 - ② **Fire beater:** A hand-held fire-fighting tool consisting of a wooden handle and a flexible flat rubber head.
 - ③ **Rake hoe:** A hand-held tool with a dual-purpose head. Used for clearing control lines during a fire.
 - ④ **Knapsack spray:** A hand-operated water pump with a capacity of between 15 and 20 litres that is worn on the back by fire fighters.
 - ⑤ **“Bakkie Sakkie”:** A water tank (600 litres), complete with a pump and a set of hoses, that can easily be slipped onto the back of a one-ton light delivery vehicle.



Courtesy of The Working on Fire programme

Fire fighter using rake hoes



Courtesy of Natural Bridge

“Bakkie Sakkie”



Courtesy of The Working on Fire programme

Fire fighter using knapsack spray pumps

PERSONAL SAFETY

All staff required to carry out fire-fighting activities should be competent and be issued with basic safety equipment. Fire-fighter safety must be given priority over all other fire suppression considerations and must comply with all relevant occupational health and safety standards. It is also recommended that staff receive training in first aid. Fire fighters must also be given sufficient time to rest to relieve fatigue and stress whilst fighting fires.

All protective clothing should be made of natural material such as leather, wool and cotton. All protective clothing should be stored in a single accessible place.

Suggested protective clothing and equipment

- Cotton overall
- Long-sleeved cotton shirt
- Long-denim trousers
- Sturdy leather boots or shoes
- Leather gloves
- Cotton hat with a wide brim or a hard hat
- Goggles to protect eyes from smoke
- Large damp cotton handkerchief to protect nose and mouth
- Woollen socks
- Damp cotton towel to protect neck
- Water bottle
- First aid kit





IF YOU LIVE IN AN AREA WHERE WILDFIRES OCCUR REGULARLY, HOW PREPARED ARE YOU?

Is your property prepared against a wildfire?

- Do you have a plan to fight wildfire?
- How are you going to stay informed of fire conditions on days having a high fire risk ?
- Do you have a list of phone numbers you may need during a wildfire and what assistance can you expect?
- What direction is a wildfire most likely to approach from and have you positioned your firebreaks accordingly?
- Have you decided whether you will stay or leave should a wildfire occur?

How well are your buildings maintained?

- Have you cleared accumulated leaves and debris from gutters?
- Have you removed inflammable woodpiles and dry vegetation from under wooden decks, against walls and next to pillars?
- Have you considered removing branches or trees that overhang buildings?
- Do you remove hanging pot-plant baskets with dry material from buildings during periods of high fire danger?
- Have you fitted windows with clip-on wire-gauze screens to be used in the event of a wildfire?
- Is all roofing secure and have you sealed roof vents, eaves and floor vents with wire-gauze screening?
- Are liquid fuels and paints stored in a separate store away from any houses?

Is your garden well maintained?

- Are your lawns kept short and well watered?
- Have you slashed long grass and undergrowth, especially under trees?
- Have you removed dead and dry branches from trees?
- Is your garden easy to move through in all directions?

Do you have sufficient water supplies and fire fighting equipment?

- Are your hoses long enough to reach all sides of your house?
- Have you ensured that your water supply will be sufficient and reliable in the event of a wildfire?
- Do you check water levels in reservoirs and water tanks on a daily basis when fire danger is high?
- Do you check your water pumps daily when fire danger is high?
- Have you considered the placement of your garden taps and installed hose fittings that are fire proof?
- Do you have a sprinkler system for your garden and roof?
- Do you have portable petrol-powered pumps in addition to electric pumps as the electricity supply can fail during a wildfire?
- Is your fire-fighting equipment appropriate and serviceable?
- Do you store your fire-fighting equipment in a single easily accessible place?
- Do you have suitable clothes for fire fighting ready for everyone?
- Do you have available a first aid kit suitable for treating burns ?

Have you made provision for your livestock?

- Where will you move your livestock to should your property be threatened by a wildfire?

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Gauteng	15th floor, Sanlam Plaza East Building, 285 Schoeman St, Pretoria	012 392 1300	012 382 1304
KwaZulu-Natal	185 Longmarket St, Pietermaritzburg	033 342 8101	033 394 1849
Limpopo	Magistrates Building, Magistrates St, Makhado	015 516 0201	015 516 1062
Mpumalanga	5th floor Prorum Building, corner Brown and Paul Kruger St, Nelspruit	013 759 7300 013 759 7385	013 755 4003
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