Best Practice Guideline:
fire management & prevention

preamble

Fire is an essential ecosystem process in fynbos. It provides the disturbance and stimulus that has contributed to the unprecedented floristic response we experience in our landscape. Fire can however also be a threat – not only to persons and property but also the very ecosystem it helped create.

This BPG is not intended as a definitive guide to fire management. Please consult expert advice before initiating a fire programme.

Legal Obligations

Wildfires as well as the use of fire as a management tool pose serious potential risks. Consult the National Veld and Forest Fire Act (101 of 1998) to acquaint yourself with the legal obligations of landowners in fire-prone landscapes.

Fire Management Objectives

Fire is an ecosystem process that is essential for the continued functioning of the ecosystem as well as the continued evolution of biota therein. Due to fragmentation of the natural landscape however, fire can no longer operate naturally on a landscape scale. We therefore need to facilitate the process within these smaller compartments to ensure persistence of biodiversity whilst ensuring the safety of persons and property.

The landowner/manager must therefore:
- maintain a fire regime that is in accordance with the functioning of the ecosystems present;
- implement regularly reviewed fire management tools so as to lower the risk of uncontrolled fire on the property; and
- protect persons and property through implementation of the above objectives in co-operation with neighbours, Fire Protection Association (FPA) and local and provincial authorities.

Management Actions:

Fire Intervals & Fire Regime

- Commission an assessment of the vegetation types and units as well as the floristics. This should be presented as a fine scale geo-referenced map that includes localities of species of concern (local endemic or Red Data listed).
- Determine the vegetation mosaic and the dominant species within these. This data must be reviewed together with a fire history map in order to understand the vegetation dynamics in response to fire and allow for management blocks to be designed that will present an opportunity for all life histories to persist.
- Consult expert advice on the determination of fire intervals per block that will facilitate continued functioning of ecosystem processes.
- It is preferable to implement a fire facilitation programme across cadastral boundaries to allow for holistic management.

Fire Management Tools

Fire Detection

Landowners will have to rely on their staff, neighbours and visitors as a fire detection system - if there is no formal lookout system in place.

Fire Danger Rating System

It is recommended that the landowner/manager obtains the daily Fire Danger Index (FDI) and any other local/regional fire danger ratings during the fire season. Fire danger ratings are provided by the local Fire Protection Association (FPA) to its members.

Table 1 below - Fire Danger Index

Fire Danger Index	Fire Conditions	Fire Management Preparation
Blue	Very safe fire conditions	• None
Green	Moderate to safe fire conditions	• Standby operational on a roster basis • Proactive fire management measures undertaken as planned
Yellow	Moderate to high fire conditions	• Standby operational on a roster basis • Limited/no proactive burning interventions • Open fires only permitted in authorised fireplaces
Orange	High fire condition	• Standby operational on a roster basis • No proactive burning interventions • Open fires only permitted in authorised fireplaces • Designated management staff available for wildfire response
Red	Very high to extreme fire conditions	• Standby fully operational • No proactive burning interventions • No open fires • Fire response team (proto-team) working close to fire-fighting equipment • Test fire-fighting equipment • Deploy field staff in safe areas only

- Standard operating procedures and protocols should be in place to ensure effective response to the occurrence of wildfires and the proactive management of risk mitigation measures.
- During the high fire risk season, a standby crew could be in place for rapid responses to fire.
- Ensure that all the necessary equipment is in good working order and easily accessible in an emergency.
- Ensure that staff are trained and capable of fighting fires.

Fire Exclusion & Management Zones

Fire management (suppression) zones must be demarcated.

- *fire exclusion zone* - management will actively suppress the spread of fires into areas designated as such to safeguard persons and property or ecosystems that are not as a whole fire driven e.g. forests.
- *fire management zone* – fuel load will be managed so as to reduce the fire intensity. This will form a zone around the *fire exclusion zone*.

Firebreaks

A firebreak network must be designed:

- As a means of access for personnel and equipment;
- To serve as a control line;
- As a line from where a fire can be attacked, for example by setting a back-burn;
- A system of internal and perimeter fire breaks should be maintained to act as pre-ignition boundaries for back burning when fire threatens the property;
- Internal firebreaks linked to controlled burning will only be prepared as and when controlled burning is to take place. This reduces the costs of making and maintaining of firebreaks, but more importantly the impact of such firebreaks on the natural environment;
- The fire breaks should be prepared and maintained annually in a manner that is least damaging to the environment and aesthetics of the property. To this end where possible current management roads and tracks should be utilised;
- Preparation of fire breaks must be scheduled for the period September to November.

Hazard Point Map

At the end of each fire season (end of April of each year), the manager is responsible for updating a fire hazard map. Areas that are a fire risk/hazard will need to be managed accordingly.

Fire Protection Association

Approach your Local Authority for assistance in establishing a FPA or alternatively contact Department of Water Affairs & Forestry for further information.

Important Considerations

- Fire intervals and the actual fire regime are determined by various factors and should be determined in consultation with expert advice.
- Consider contractual arrangement with a private contractor to provide properly equipped and trained fire crew to assist in the suppression or containment of wildfires, to maintain fire mitigation measures and to undertake prescribed burning on the property.
- Invasive plant species exaggerate fuel load thereby increasing fire frequency and intensity further decimating biodiversity.