



# The Landowner's Guide to **FIRE MANAGEMENT**

**P**eriodic natural fires have always occurred in fynbos and probably in renosterveld systems too. Many plants actually need fires to reproduce and ensure their long-term survival. The challenge now is to use fire in a fragmented and highly modified modern landscape to ensure the survival of all plant and animal species that live in the landscape. **Although fynbos is a fire-adapted system, just one or two inappropriate fires at the wrong time of year or wrong frequency, can cause the local extinction of many species.**

The most important use of fire for conservation management is to maintain viable populations of all existing plant and animal species. The use of fire to achieve other management objectives should always take this into account. These may include: reduction in fuel load to prevent unmanageable wildfires, the control of invasive alien plants, increase in water yield from catchments, promoting desirable plants for the flower picking industry, or improving grazing.

## Principles of Fire Management

### Frequency

- The interval between fires should largely be determined by the growth rate of existing plants. **No fire should be permitted in fynbos until at least 50% of the population of the slowest-maturing species in an area have flowered for at least three successive seasons.** Similarly, a fire is probably not necessary unless a third or more of the plants of these slow-maturing species are senescent (ie dying or no longer producing flowers and seeds).
- **Prescribed burns should generally not occur more often than every seven years** as this may result in a loss of species that have not matured and produced seeds. Research suggests that, **under natural conditions, fynbos should be burnt between eight and 20 years** after the last fire. Fire at intervals greater than 25 years may result in the fynbos becoming senescent. Generally however, **our biggest challenge is to protect fynbos from fires that are too frequent.**

Although not much research has been done on the role of fire in renosterveld<sup>1</sup>, the above guidelines are a good starting point. As renosterveld

can contain a high proportion of grasses, which are fast-growing and highly flammable, renosterveld can be burned more frequently than fynbos, possibly every three to 10 years. However, renosterveld is far less dependent on fire than fynbos.

- Light is important for bulb flowering and the germination of renosterveld species seedlings. This light is received by plants after fire but it can also be provided by bush cutting or periodic grazing by stock. While fire does promote grass regeneration and can temporarily improve grazing, **frequent burning in renosterveld can result in the disappearance of a number of plants that require longer fire cycles** (eg the legumes that fix nitrogen) and are important for grazing animals.

### Intensity

The intensity of a fire is influenced by the fuel load, fuel moisture, relative humidity and wind speed. The intensity can be manipulated by either reducing the fuel load (i.e. burning more often) or by selecting the conditions that will lead to the desired type of fire. Most fynbos species require high intensity fires for survival, however, low intensity burns are often favoured for safety reasons.

## Season

Due to the Mediterranean climate (summer drought) over most of the Fynbos biome, accidental fires occur mainly in summer although they are possible in all months under suitable weather conditions. Generally, a **late summer or early autumn burn is best for fynbos species**, however, prescribed burning in the summer months (Nov – Feb) is seldom advised due to the risk of runaway fires. Burning is usually only feasible in March and April. **The season for prescribed burns in the Western Cape is the 15 January – 15 May** (Cape Town Metropolitan Council, 1995) although consultation with CapeNature and the relevant District Council may permit prescribed burns to be carried out after these dates if necessary. Generally, **fire experts**

**consider autumn (March - May) to be the best and safest time to burn**, although the occasional summer fire may actually be beneficial. Repeated summer fires should be avoided.

## Proportion of area burned

**It is vitally important, no matter how large or small the managed area, to maintain a mosaic of vegetation ages within a property.** This follows the precautionary principle, which suggests that a variety of burn practices and veld ages is the best way to maintain species diversity. It also allows recolonisation of burnt patches by mobile species from unburnt patches. **If an entire natural area is burnt, it is likely that some species will be eliminated completely.**

### Do's

- Burn vegetation at the end of Autumn
- Ensure you have adequate firebreaks to prevent runaway fires - certain requirements are laid down in the new Veld and Forest Fire Act for firebreaks, including minimum width and measures to prevent erosion
- Ensure you inform neighbours of your intention to burn
- Maintain fire fighting equipment and keep ready
- Keep a record of fires, using a map of veld age-class distribution as a basis. Note the date and time of ignition, weather conditions etc. Certain indicator species may be used to show the readiness of the veld for future burning.

### Don'ts

- Never burn vegetation in winter or spring
- From July to November don't put stock, cattle or sheep onto vegetation following a fire
- In fynbos, don't burn vegetation unless you can see that all Protea species have flowered for at least three years
- In renosterveld, don't burn vegetation that is shorter than 50cm and doesn't have mature bushes from a number of different species
- Don't allow the fuel load to accumulate to dangerous levels
- Don't leave fires unattended
- Don't burn on Fridays, weekends and holidays
- Don't leave an extinguished fire unguarded

**Landowners should devise an appropriate burning strategy** informed by the advice of CapeNature extension officers, as well as legal and practical management requirements.

## Authority

In order to undertake a burn during the prescribed season, permission must be obtained from your Fire Protection Association (once operational) which will issue a permit. Other relevant authorities, such as the District Council and CapeNature, should be notified before burning.



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