# Burning Grass Trees

Information Sheet, March 2022

## Objective

This information sheet provides guidance for managing the bushfire hazard and habitat values of grass tree skirts, within rural and residential areas, in a safe and ecologically sustainable manner.

## Background

For this document, the term 'grass tree' refers to *Xanthorrhoea* and *Kingia* species. These plants are characterised by a bare trunk, usually single stemmed, with rigid needle-like leaves. As these leaves mature and dry, they are retained by the plant, forming a 'skirt', or thatch.

Grass trees are abundant in many areas, and their skirts are highly flammable. Consequently, their management can be an important consideration in reducing bushfire hazard.

Grass tree skirts are important fauna habitats, providing homes for many native bird, mammal, reptile and invertebrate species.

Grass trees are commonly found in bushland remnants and reserves, often near development. It is common practice for grass tree skirts to be burned or trimmed for bushfire hazard reduction purposes.

When managing grass tree skirts, it is important to consider the impact that their management, either through burning or trimming, may have on the grass trees themselves and on their value as wildlife habitat.

The information in this document has been derived through a comprehensive review of scientific literature and through extensive consultation with fire practitioners and ecologists with recognised expertise in managing bushfire hazards and wildlife conservation. The findings of this research have been condensed into the following considerations and management actions.

Figure 1: *Xanthorrhoea priessii* or Balga, a common grass tree species throughout south-western parts of Australia.

Figure 2: *Kingia Australis*, usually referred to as the Kingia, can grow to 8m tall and is common on damp sites and wetlands.

This information sheet has been developed by the Department of Fire and Emergency Services to help build understanding of managing the potential bushfire fuel hazard of grass trees.

## Considerations

When developing bushfire risk management actions, the following should be considered:

- Grass tree skirts may present a bushfire hazard to assets (through flame, radiant heat, embers and smoke) requiring specific management, often by trimming or burning the dry skirts, preferably from the top down (see page 4).
- Burning grass tree skirts frequently (every 3 years or less), or too intensely, can result in negative impacts to native fauna and ecosystems.
- Burning grass tree skirts encourages flowering and new growth; however, this process draws on the plants' energy and nutrient reserves. For this reason, burning at intervals of less than 6 years should be avoided (where skirts can be safely retained).
- Burning during late autumn or early winter results in slower leaf regrowth following fire. This is preferred as it results in less stress on the plants' energy and nutrient reserves.
- The skirts of taller grass trees are often higher than, and therefore separated from, surrounding vegetation. Consequently, the probability of grass tree skirts being ignited by low to moderate intensity fires decreases with their height above the ground. Therefore, where there is no direct threat to assets, leaving skirts on some taller grass trees unburnt should not increase the overall bushfire hazard and can preserve valuable fauna habitat.
- Grass trees can still burn despite recent rainfall, although at a lower intensity and producing fewer embers. Therefore, burning grass trees after recent rain can reduce the risk of damage to assets and the probability of 'fire escape'.

Figure 3: Carnaby's Black-Cockatoos perched on grass tree flowering spikes. Photo: Sheila Rowlands.

Figure 4: Silvereye feeding on insects on a grass tree flowering spike. Photo: Sheila Rowlands.

- Grass tree skirts are home to many native animals. These include the critically endangered western ringtail possum, bandicoots, mardos, phascogales, native rodents, pygmy possums, honey possums, microbats, reptile species, frogs and invertebrate species.
- Recently burned grass trees have little habitat value. For many fauna species, it may take more than 5 years post burn for grass trees to become usable habitat once again.
- Several bird species such as woodswallows, fairy wrens, honeyeaters and thornbills nest in grass tree skirts.
- Igniting grass trees should always be done from the top down. If grass tree skirts are burned from the bottom up, they burn rapidly. Consequently, resident animals may be unable to escape and may perish. Instructions on how to burn grass trees correctly are on page 4.
- The complete removal of a major habitat structure, such as burning all grass tree skirts, even when this loss is temporary, can result in fauna species becoming permanently lost to an isolated patch of native vegetation.
- Grass trees are highly susceptible to dieback (*Phytophthora cinnamomi*). This fungal pathogen can be transported by foot and vehicle traffic and by water movement. Appropriate hygiene practices should be implemented if dieback is likely to be present.
- Grass trees can persist for decades without their skirts being burned. Although very old grass tree skirts can weigh down and kill the plant, this phenomenon is rare in healthy grass trees.

## What you need to do

The bushfire hazard presented by grass tree skirts varies with their proximity to buildings and other assets. DFES recommends using separate Risk Treatment Zones in managing grass tree skirts. These zones (see Figure 5) align with those given in the *Guide for applying the Bush Fire Risk Treatment Standards for Residential and Public Buildings*:

**Inner Zone (or 'defendable space'):** Land that is within a 10m wide buffer separating flammable vegetation from buildings and assets (including access ways).

- Grass trees should be regularly maintained in a minimum fuel state with treatment intervals of <3 years.
- Around buildings, grass tree skirts should be trimmed mechanically rather than by burning.

**Outer Zone:** Land that is between 10m and 20m (sometimes greater) of a building or asset where vegetation is managed to reduce the impact of bushfire.

- Grass trees that present as a fuel ladder (a means by which fire can move from ground level into the canopy) should be prioritised for treatment.
- Grass tree skirts can be trimmed mechanically or lit from a single downwind point at the top of the dry skirt and allowed to burn down. Instructions on how to burn grass trees correctly are given on page 4.

**Unmodified Vegetation:** Contains vegetation greater than 20m from a building or asset. Where safe and practical to do so, around 25 per cent of unburned grass trees should be retained between burns including:

- Those grass trees which have not burned during the planned burn.
- The skirts of grass trees over 1m in height and those with multiple heads, as they have greater habitat value.

**Across all zones:**

- Grass trees can be protected from mild bushfires and excluded from planned burns by raking and removing the surface and near surface fuels from around their trunks.
- Where practical, the treatment of grass trees should be undertaken in late autumn or early winter. Treatments at this time reduce impacts on resident fauna that breed in spring, particularly nesting birds, marsupials and reptiles.
- Where multiple grass trees in a small patch are being treated, environmental impacts and the risk of fire escape can be lessened by treating one grass tree at a time.

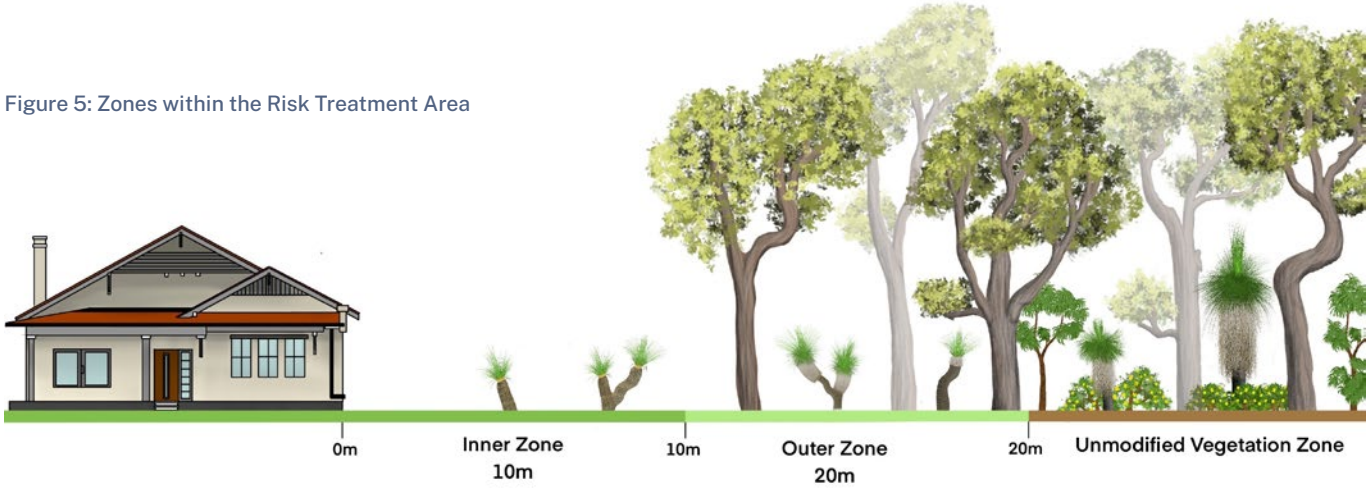
## Further information

**Bushfire Technical Services**
Email: environment@dfes.wa.gov.au

**Burn SMART**
**A planned burning guide for small landholders**
dfes.wa.gov.au/site/documents/BurnSmart_Guide_2021.pdf

**Guide for applying the Bush Fire Risk Treatment Standards for Residential and Public Buildings**
dfes.wa.gov.au/site/documents/Guide-for-applying-the-Bush-Fire-Risk-Treatment-Standards.pdf

Figure 5: Zones within the Risk Treatment Area



## How to burn a grass tree

### The right way

- Check skirts for visual signs of animals, for example, presences, nests and hollows.
- Burn one grass tree at a time.
- Light the top of the dry skirt on the downwind side.
- Use a single ignition point.

This results in a slower spreading, less intense fire that does not readily block the avenues of escape for animals.


### The wrong way

- Grass trees should not be lit from the bottom of the skirt or on the upwind side.
- Do not use multiple ignition points.

This causes grass trees to burn rapidly and at a higher intensity, which can block the avenues of escape for animals.