

# Leadbeater's Possum Advisory Group

## Fact Sheet - Leadbeater's Possum and fire management

### At a glance

- Fire in the environment can have impacts on biodiversity outcomes, both positive and negative, depending on the circumstances.
- Fire regimes — the frequency, intensity, season, extent and type of fire — vary according to the landscape and through time. Fire regimes impact on the range of species at a location and the habitat that a particular location provides.
- Victoria's ecosystems are dependent on appropriate fire regimes for their continued existence and evolutionary development. Fire disturbance is important in stimulating regeneration of plant species and the long term renewal of habitats. However inappropriate fire regimes, including extensive, severe, or fires too frequently can pose a threat to flora and fauna, including the Leadbeater's Possum and its habitat.
- The Department of Environment and Primary Industries (DEPI) works with a range of partner agencies including Parks Victoria, VicForests, Fire Services Commissioner, Melbourne Water and the Country Fire Authority to reduce the impact of major bushfires and other extreme events on people, infrastructure and the environment.
- DEPI undertakes a range of fire management activities on public land to meet its statutory obligations and policy commitments. Activities include planned burning, slashing, mowing and clearing to create and maintain fuel breaks.
- DEPI and Parks Victoria also play a key role in natural values recovery following severe bushfires, including after the 2009 bushfires.

### Fire in the Victorian environment

Fire in the environment can have impacts on biodiversity outcomes, both positive and negative, depending on the circumstances.

Victoria is one of the most bushfire prone areas in the world as a result of wet winters (which creates fuel in the form of vegetation) and hot and dry summers. Predictions regarding climate change suggest that there may be an even greater risk of more extreme weather and more severe bushfires in the future.

For thousands of years, bushfires have been caused by lightning and humans and this has set the pattern of fire in the Victorian landscape, including in the Leadbeater's Possum habitat. Fire regimes are now primarily determined by bushfires caused by lightning, accidental or deliberate human ignition, and by planned burning by fire agencies to protect life, property and the environment.

Fire regimes — the frequency, intensity, season, extent and type of fire — vary over the landscape and over time. The fire regime, rather than single fire events, is important in determining the range of species at a location and the habitat that a particular location provides.

Most plant and animal species are adapted to fire regimes of a particular extent, frequency, intensity and season. Victoria's ecosystems are dependent on appropriate fire regimes for their continued existence and evolutionary development. Fire disturbance is important in stimulating regeneration of plant species and the long-term renewal of habitats. However, inappropriate fire regimes, including extensive, severe, or fires too frequently, can pose a threat to flora and fauna, including Leadbeater's Possum and its habitat.

Controlled fire, either as planned burning to protect life and property, or for forest regeneration after timber harvesting, needs to be applied carefully in order to avoid adversely affecting Leadbeater's Possum populations and habitat. This means avoiding negative impacts of planned burning on Leadbeater's Possum populations while also seeking to better understand the potential role of fire in creation of the habitat elements that Leadbeater's Possums require, and applying fire in the appropriate locations as one of the means to minimise the risks of widespread bushfire.

The associated Leadbeater's Possum fact sheet provides more detail on fire in Leadbeater's Possum habitat, including the impact of the 2009 bushfires, which burnt 34 per cent of potential habitat within the range of Leadbeater's Possum and 45 per cent of the Leadbeater's Possum reserve.

## Fire management

The Department of Environment and Primary Industries (DEPI) is committed to reducing the impact of major bushfires and other extreme events on people, infrastructure and the environment. DEPI works with a range of partner agencies to achieve this objective, including Parks Victoria, VicForests, Fire Services Commissioner, Melbourne Water and the Country Fire Authority.

These agencies strive to manage Victoria's environmental assets and systems through effective environmental policy, investment and regulation, and working with the community to effectively manage Victoria's public and private land assets.

DEPI's fire management responsibilities are outlined in the *Forests Act 1958*, which requires DEPI to carry out "proper and sufficient work for the prevention and suppression of fire in every state forest, national park and all protected public land". DEPI also has a range of statutory responsibilities as a land manager, including under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Following the 2009 bushfires, the Victorian Bushfires Royal Commission made 67 recommendations, including four relating to fuel management. The Victorian Government committed to implement all 67 recommendations. Consistent with these recommendations, the government is implementing an expanded planned burning program on public land.

The *Code of Practice for Bushfire Management on Public Land* (Code) lists two objectives for bushfire management on public land:

- To minimise the impact of major bushfires on human life, communities, essential and community infrastructure, industries, the economy and the environment. Human life will be afforded priority over all other considerations.
- To maintain or improve the resilience of natural ecosystems and their ability to deliver services such as biodiversity, water, carbon storage and forest products.

### **Fire management activities**

DEPI undertakes a range of fire management activities on public land to meet its statutory obligations and policy commitments. Activities include planned burning, slashing, mowing and clearing to create and maintain fuel breaks.

The annual Fire Operation Planning (FOP) process, led by DEPI with input from Parks Victoria, identifies areas for planned burning for a three year period. As part of this process, biodiversity and cultural heritage values are assessed. If a significant value is detected within a proposed planned burn area or a nearby area that is likely to be negatively affected by planned burning or associated activities (e.g. road re-alignment or upgrading), guidance is provided by DEPI where possible on how the burn should be undertaken to reduce the impact, based on the species' ecology. The Forest Operation Plans for the next three years will be approved in October 2013.

Approaches taken to address possible impacts on biodiversity values include:

- Avoid the impact – can the burn boundary be shifted, or the burn be relocated; can the timing of the burn be adjusted?
- Minimise the impact – can the particular value or habitat within the burn be protected through a specific lighting pattern, or manual preparation?
- Mitigate the impact – are there alternative habitat options, e.g. can impacted flora species be revegetated?

Where Leadbeater's Possum or its habitat is identified in or near areas planned for fire management activities, the general approach has been to seek exclusion of fire in ash forests. Apart from the potential impact on Leadbeater's Possum, there are also practical reasons for this – the fuel is usually too moist to burn in a typical season and when dry enough there is a greater risk of escape and impact on other values, including rural communities and timber.

### **Strategic bushfire management planning**

Seven risk landscape teams have been established within DEPI to prepare strategic bushfire management plans. These multi-disciplinary teams bring together expertise in fire behaviour analysis, risk modelling, biodiversity and community engagement. The purpose of strategic planning is to work with communities to identify, evaluate and select strategies that are most likely to achieve the two objectives in the Code. Strategic planning will assess fire ecology in ways that:

- assess the capacity to maintain flora and fauna habitats over space and time
- consider risks to achieving resilience outcomes and provides options for reducing these risks
- provides advice on how fire can be used for ecologically beneficial outcomes.

Bushfire risk landscape planning will be integrated with broader management planning for parks and forests which addresses all values and uses.

DEPI's fire monitoring program, an important component of a strategic approach to bushfire management, aims to improve understanding of the landscape-scale impacts of fire. Outcomes from this program inform future fire management planning.

The first three strategic bushfire management plans (East Central, West Central and Barwon Otways) are due in June 2014, with the remainder (Mallee and Murray Goulburn, Alpine and North East, South Western, Alpine and Greater Gippsland) to be delivered in 2015. The majority of the distribution of Leadbeater's Possum is within the East Central bushfire management plan area.

### **Recovery following bushfire**

DEPI and Parks Victoria also play a key role in natural values recovery following severe bushfires, including after the 2009 bushfires. Multi-disciplinary teams are responsible for conducting rapid environmental risk assessment of damaged or impacted areas following an environmental disaster.

Following the 2009 fires the impact of the fire at Lake Mountain on the resident Leadbeater's Possum population was assessed. Prior to the fire it was estimated that the population was 200-300 individuals, based on the numbers using nest boxes, which in addition to providing nesting habitat can be used as a monitoring tool. These nest boxes were inspected immediately after the fire to determine whether any possums had survived. All the boxes had been burnt to varying degrees and dead possums were found in the surrounding bushland and boxes. It was thought that only six individuals survived. New nest boxes were installed to provide shelter and a supplementary feeding program was initiated as food was also thought to be limited. Supplementary feeding continued until late 2011 when four of the six surviving Leadbeater's Possums disappeared, possibly due to cat predation. The surviving possums were subsequently rescued from Lake Mountain and relocated to Healesville Sanctuary. These individuals remain at Healesville Sanctuary and will be used for educational purposes.