

Preliminary report:  
impact of 2009  
Victorian bushfires  
on nature and  
wildlife



# Preliminary report: impact of 2009 Victorian bushfires on nature and wildlife

The terrible loss of life that occurred in the Black Saturday bushfires on February 7 and also Sunday, February 8 has deeply affected all Australians. In less than 10 years, Victoria has experienced three devastating fire events in 2003, 2007 and now 2009, something that has never before occurred in living memory or recorded history.

The frequency and intensity of these fire events demonstrates that a fundamental rethink of fire management in Victoria is now required so that people, property, animals and plants do not face similar tragedies in the future.

Australia's leading scientists have been warning authorities for many years that climate change will lead to more frequent and intense fires. Until this decade, a fire on a scale similar to each of Victoria's three major fires since 2000 would have been anticipated once every generation. In addition to Victoria, in the past decade NSW and the ACT have also experienced fires on a scale rarely seen or expected.

Fire is natural part of the Australian landscape and many of our native plants, animals and ecosystems have evolved to depend on fire as part of the environment. But because the Australian bush is not a homogenous landscape, various vegetation types have different needs in terms of fire frequency and intensity. This also means that there is no 'one size fits all' approach to fire management. We can never control fire but we can learn to manage it in ways that protect people, property and nature.

But due to their increasing frequency, scale and ferocity, fire can now be considered one of the most serious threats to nature in southern Australia. This severe increase in the frequency and intensity of fires threatens to cause a reduction in the resilience of ecological communities, pushing endangered wildlife towards extinction, place once abundance wildlife on the threatened lists for the first time, and put our precious and dwindling water storages at risk.

There is widespread agreement for the need for fire management to have an ongoing priority focus on protection of people and property. This is particularly important in the era we now face of climate change and prolonged drought.

As we all now move forward and determine how best to protect people and property, it is also vitally important that careful consideration of the impact of fire on animals and the natural environment areas they call home also occurs.

The full extent of the impacts of the Victorian bushfires may not be known for many years. What is clear is that these large, intense fires have potentially devastated some of the Victoria's most endangered animals and plants, raising major concerns for their survival in the future. For example, experts from Birds Australia estimate that up to two million birds have been affected.



Black Spur after fire

...fire can now be considered one of the most serious threats to nature in southern Australia.



Just as the Alfred Hospital's burns unit reported an unexpectedly low number of people arriving for treatment due to the ferocity of the Black Saturday fires, so to did wildlife carers and veterinarians report that few animals and birds made it out of the fires alive.

Many of Victoria's unique forests and other natural areas have been extensively burnt and will be unrecognisable for many years to come. One significant example of this is the spectacular giant mountain ash stands in the Yarra Valley National Park, which supports a vast array of important communities of plants and animals.

Of major concern for future fire management is the impact of climate change, which experts predict will increase the risk of large, more intense firestorms. A joint CSIRO and Bureau of Meteorology study in 2007 of the impact of climate change in bushfires found parts of Victoria faced up to 65 per cent more days of extreme fire risk by 2020, and 230 per cent more by mid-century. The implications of this increased risk to people, property, animals and their habitat is a major issue.

One thing is certain – the rules we all understood about fire management have now changed and a new approach is necessary. The Wilderness Society encourages scientists, local communities, and our members to contribute to the Royal Commission and other relevant processes. The Wilderness Society will also conduct a review of our current bushfire policy in response to these changing times and new information. What we need now is a response that takes into consideration both a local and landscape approach where science guides us to take precautionary measures to protect people, property and the environment.

The rules we all understood about fire management have now changed...



Burnt Mountain Ash

# Background – How the fires started and what was burnt.

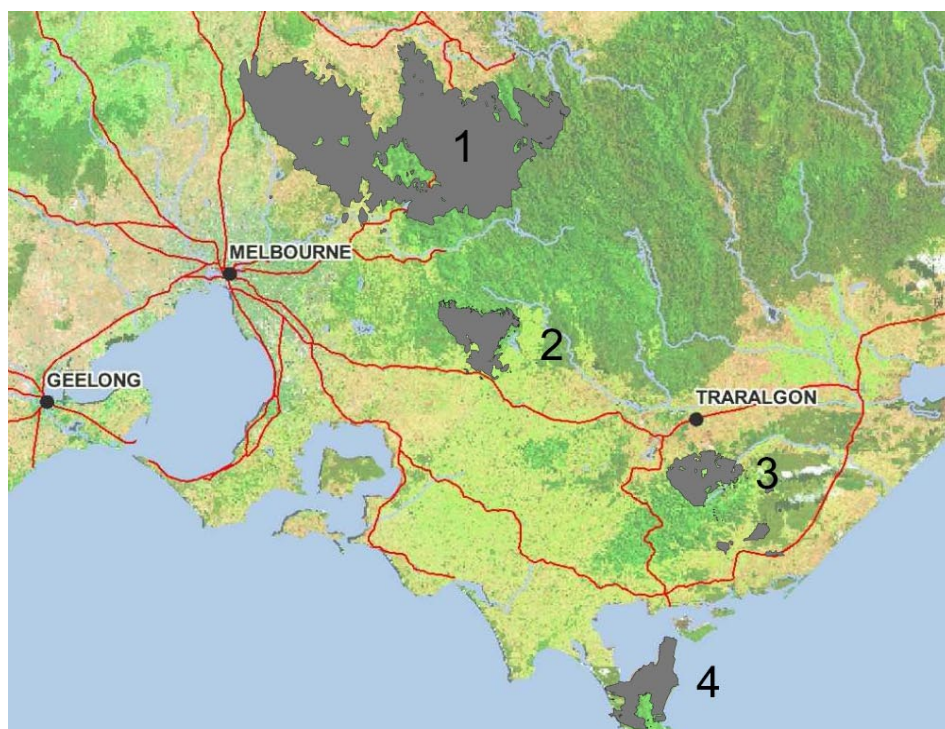
The following table describes how the fires started and the proportion of public versus private land burnt after 2 dates; firstly on February 8, following the unprecedented conditions of February 7 ‘Black Saturday’ and secondly on March 6, after the fires had burnt for another month.

In short the fires burnt a mix of private and public land. There is a misconception that the fires started in ‘unmanaged’ public land, state forest and National Park. The table shows that on the unprecedented conditions of February 7, the Kinglake, Churchill and Murrindindi fires, which saw by far the most devastating impacts on human life and property, ignited on private land then burnt extensive areas of private, cleared and grassland, before burning extensively into public land including forested areas. In other words these fires started in private land before burning into public land.

Over the following month until March 6 a greater percentage of public land was burnt, with greater impact for wildlife and their habitat.

Fire	Key Species at risk	Suspected source of fire (according to media reports)	Land tenure affected - 8 February (Source: DSE base maps)			Tenure affected - 6 March (Source: DSE base maps)		
			Private land	Public land (parks and conservation reserves)	Plantation	Private Land	Public land (parks and conservation reserves)	Plantation
Churchill	Koala	Arson	70%	30% (TBD)	TBD	68%	32% (TBD)	TBD
Bunyip	Sooty Owl	Arson, lightning	34%	66% (66%)	-	28%	72% (29%)	-
Kinglake	Barred Galaxias, Leadbeater’s Possum, Sooty Owl, Spotted Tree Frog	Powerline	61%	38% (19%)	1%	26%	72 % (23%)	2 %
Murrindindi		Arson	21%	73% (12%)	6%			
Wilsons Prom	Ground Parrot	Lightning	-	100% (100%)	-	-	100% (100%)	-

*TBD - to be determined requires additional data*



## Fires assessed:

1. Kilmore East - Murrindindi
2. Bunyip
3. Churchill
4. Wilsons Promontory

Base data: Department of Sustainability and Environment online and fire maps.

# Five species considered most at risk from the bushfires

The five species considered most threatened by the fires include: the Leadbeater's Possum, Sooty Owl, Barred Galaxias, Ground Parrot, and Spotted tree frog.

## Leadbeater's Possum (*Gymnobelideus leadbeateri*)



Photo courtesy Dr Daniel Harley

- ▶ Victoria's faunal emblem
- ▶ Listed as endangered in Victoria and Nationally
- ▶ Probably less than a thousand left in the wild

Believed to be extinct for almost sixty years, this small possum – Victoria's faunal emblem – was rediscovered near Marysville in 1961. Leadbeater's Possum is endemic to mountain ash forests of Victoria, a significant area of which has been burned with varying degrees of intensity. Fire is a threat to both the possum directly and its habitat. Intense fire can destroy the old trees with hollows that provide crucial habitat for the possum. The situation could be dire for some populations, especially in areas with small numbers of old trees. Leadbeater's tend to retreat into their homes rather than flee when they detect smoke, so fire that destroys big old trees with hollows is a major threat.

# Sooty Owl

(*Tyto tenebricosa*)



Photo courtesy David Hollands

- ▶ Listed as vulnerable in Victoria
- ▶ Less than one thousand breeding pairs in the State

The Sooty Owl is a large secretive bird that lives in pockets of rainforest and wet eucalypt gullies in Eastern Victoria. The bushfires have impacted on substantial areas of habitat, which is expected to result in declines of the already vulnerable species. Even if owls do survive the initial fire, they are still at risk because damage to habitat may mean there is nowhere for them to live. The Sooty Owl nests in large old trees with hollows and preys on other forest species, including those which are also dependant on tree hollows. With thousands of old trees and extensive ground habitats of prey species impacted by these fires, the owls that do immediately survive the fires will be impacted through a massive reduction in prey species.

## Barred Galaxias

(*Galaxias fuscus* )



Photo courtesy Gunther Schmida / Lochman Transparencies

► Listed as endangered nationally

This small native fish only remains at around a dozen small locations east of Melbourne. Most of these sites have now been burnt and there are significant concerns over the threat of extinction in the near future. Bushfires are a threat to the species through ash and sediment washing into streams following fire and impacting directly on the fish and their habitat.

## Ground Parrot

(*Pezoporus wallicus wallicus* )



Photo courtesy Dave Watts / Lochman Transparencies

► Listed as endangered in Victoria

The ground parrot only lives at a few Victorian heathland sites. The bushfires burnt an extensive area of habitat, and there is concern over subsequent decline of one population, with important implications for the conservation of the species.

# Spotted Tree Frog

(*Litoria spenceri*)



Photo courtesy Peter Robertson

▶ Listed as endangered nationally

This frog is one of the States most endangered species, living in only a few isolated fast flowing rocky streams in the east of the State. Important Spotted Tree Frog habitat was burnt in the bushfires and there is concern that ash and sediment flows into streams could have a devastating and longer term effect.

## ▶ Fact box - Loss of Hollow Bearing Trees

Many arboreal species, including bats, owls, possums and gliders are entirely dependant on hollows only found in big old trees – which can take more than a century to form - for shelter, roosting and nesting. The bushfires have burnt through some of the most intact old growth forests remaining in central Victoria.

In high intensity fires, existing hollow bearing trees are likely to be killed or damaged, accelerating the decay and eventual collapse of such trees. Any further loss of hollow bearing trees in the years to come is a major conservation concern.

Loss of hollow bearing trees is listed as a threatening process under Victoria's Flora and Fauna Guarantee Act.

The bushfires have burnt through some of the most intact old growth forests remaining in central Victoria.

# Other conservation values and wildlife at risk

## Koala

(*Phascolarctos cinereus*)



Koala injured by bushfire  
Photo: K Veal courtesy Wildlife Victoria

A substantial number of koalas have been affected by these fires, both directly and through habitat loss which can last for some time in intensely burnt areas as trees and understory recover. A significant proportion of Victoria's most important koala habitat in the Strzelecki Ranges was burnt, and while there is hope the population will recover with time there is reason for concern as there has been limited research in the area and the pre-fire population size was unknown and therefore the impacts of the fire are little understood.

# Water



Maroondah Water Catchment

Bushfires have affected a number of Melbourne’s water supply catchments including the O’Shannassy, Armstrong, Maroondah, Wallaby and Tarago catchments.

There is a risk that ash, soil and sediment will wash into streams, particularly if there is heavy rainfall following the fires – and contaminate water quality. This is both a risk to water supply for human consumption and the health of aquatic wildlife such as native fish.

There is also a risk that bushfire damage will reduce the quantity of water these catchments can supply. When a tree is killed and a new tree starts to grow vigorously to take its place – the new tree uses more water - reducing the amount flowing into streams and water supplies. Some forests are expected to recover quickly with little impact on stream flows such as the drier mixed species forests whose trees generally survive fire and quickly recover. The tall mountain ash forests are more sensitive to fire and intensely burnt areas may result in some trees dying and long term reductions in stream flow – although previous fires indicate that a significant proportion of trees can also be expected to survive.

...bushfire damage will reduce the quantity of water these catchments can supply.

# Rainforests

Victoria’s rainforests are amongst the most threatened in Australia, and bushfire is one of the most serious threats to its survival. Small pockets of ancient rainforest survived the last ice age – and are very sensitive to fire. Bushfires have affected some of the most significant rainforests in the state – including sites of recognised national significance such as those in the O’Shannassy water catchment. There is limited information at this stage on the intensity of fires at these sites however substantial damage to rainforests is likely.

# Six special places in nature impacted by the fires

## Kinglake National Park

Only 65km from the city centre, Kinglake National Park is the closest large national park to Melbourne. It was proclaimed over 80 years ago, amid growing concern from the threat of clearing for agriculture in the surrounding area. Since the 1920's it has been a popular walking and picnic destination, especially around Masons Falls, the highest and largest waterfall in the greater Melbourne area. The park also protects the important old growth forests in the Wallaby Creek water catchment, which is home to many endangered species including the Brush-tailed Phascogale, and the Powerful and Sooty Owls.

Masons Falls, Kinglake National Park. Photo courtesy Ern Mainka



## Cathedral Range

The Cathedral Range has long been popular with campers, hikers and rock climbers. Its spectacular 7km long ridge line provides exceptional hiking and climbing opportunities in rugged terrain. Around several popular campgrounds the dry forests are home to populations of koalas, wombats, platypus, lyrebirds, native orchids, significant flora such as the Bristle-fern and Slender Tick-trefoil and the threatened Powerful and Sooty Owls. The park contains important Aboriginal sites and is very popular with school groups and outdoor education classes.

The Cathedral Range State Park. Photo courtesy Ern Mainka



## Yarra Ranges National Park

The Yarra Ranges National Park contains some of the most significant remaining stands of old growth forests and rainforests in Victoria, and some of the tallest trees on Earth. The tall wet mixed-aged forests of these catchments have survived past fires, and are home to endangered species including Victoria's faunal emblem, the Leadbeater's possum. In the spectacular giant mountain ash stands, the area contains some of the most carbon dense forests on Earth.

The Black Spur – Yarra Ranges National Park. Photo courtesy Ern Mainka

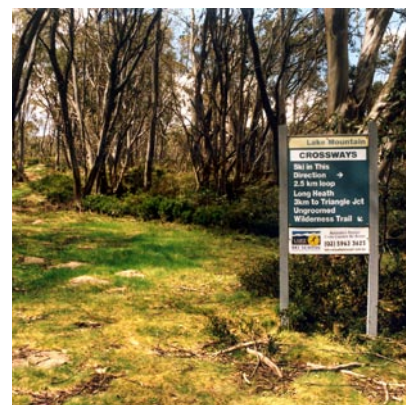


## Six special places in nature impacted by the fires (continued)

### Lake Mountain Ski area

This much loved cross country ski mountain is a mecca for tourists in both the Summer and Winter seasons. At 1420 m high, it is covered in snow in the Winter months and provides over 40km of walking tracks and ski trails for people of all ages. Tracks lead through stands of snowgums and alpine heath to panoramic views of Victoria's alpine high country.

Lake Mountain. Photo courtesy Chris Taylor



### Keppel Falls and Lady Talbot Drive, Marysville

Named after the wife of Sir Reginald Talbot, the Governor of Victoria from 1903 to 1908, Lady Talbot Drive is one of the most popular destinations of visitors to the Marysville area. It contains some of the most intact stands of ancient Myrtle Beech rainforest in the Central highlands surrounded by giant mountain ash forests.

Myrtle in Rainforest near Lady Talbot Drive. Photo courtesy Chris Taylor



### Wilson's Promontory

The Prom, as it is affectionately known, is one of the most loved National Parks in Victoria. Aboriginal people have used this area for at least the past 6,000 years, and it was once part of the land bridge to Tasmania. Its popularity means the park is visited all year round by beachgoers, hikers and keen bird watchers. Containing the largest coastal wilderness in the state, it is home to the Long-nosed Potoroo, the Eastern Pygmy-possum and is one of the largest refuges of the highly endangered Ground Parrot.

Wilson's Promontory National Park. Photo courtesy The Wilderness Society



# Recommendations

We welcome the announcement of a Royal Commission into the fires as an appropriate response to carefully investigate and review fire management for the protection of people, property and the environment at a local and a landscape level.

The Wilderness Society will be asking the community, scientists and our members to help us review our current bushfire policy in response to these changing times.

## **Recommendations. The Wilderness Society urges the Victorian Government to;**

1. Publish within one year a comprehensive report on the impact and risks of these fires on natural values, water, carbon, wildlife and endangered plants and animals.
2. Establish long term monitoring of the effects of these fires on wildlife and threatened species.

