

What to expect after the bushfires

Native plant and animal recovery

The bushfires that burnt across Victoria in February 2009 have, and will continue for some time, to have an impact on natural resources such as soil, waterways, native plants and animals and pastures.

This note provides a basic explanation of the impact of the fires will have had on native plants and animals, what natural recovery to expect, what issues to be watchful for and what you can do yourself on your property to help the recovery.

This note has been compiled from existing sources of information to help affected landholders better understand what to expect on their property.

Impact of the fires on native plants and animals

Our native vegetation has evolved to survive fire events and you can expect remnant native vegetation to recover over time.

The recent bushfires have removed native vegetation cover and exposed the soils, but the extent to which it has done this is variable across the broader extent of the fires.

Some native plant species have been killed, whereas other species have simply been defoliated or had the above ground parts of the plant destroyed but are still alive.

What species were present before the fires, and the localised severity of the fires, will influence how much vegetation has been killed and how much is still alive.

You can assess the local severity of the fire in native vegetation through the following observations:

Observation	Fire severity
Tree canopy intact and all green, with only the understorey burnt	Low
Tree canopy partially scorched with upper canopy still green	Moderate
Tree canopy completely scorched – all leaves brown, but most remain attached	High
Tree canopy completely defoliated – no leaves remaining	Very high

Many native animals will have been killed by the fires, others may have survived the fire but died soon afterwards due to lack of shelter (from predators) or food, but many have survived by moving to safer refuges underground or in adjacent unburnt areas. Valleys are particularly important refuges.

What natural recovery of native plants and animals to expect

The recovery of native vegetation is expected to be slower in places where the severity of the fire was higher. The fires will have created many open spaces in the vegetation, allowed more sunlight in, and added nutrients to the surface soils.

Different species will recover in different ways:

- Some will regenerate from seed stored in the soil or dropped onto the ashbed as a result of the fire
- Some will regenerate from the parts of the plant that remained alive, such as tree trunks, rootstock, and underground bulbs
- Some will return through the reintroduction of seed carried in by the wind or by animals

Regeneration from tree trunks, rootstock and underground bulbs can often commence quite soon after the fires. Grass trees resprout and tree-fern fronds unfurl in only a few weeks.



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Some of the soil-stored seed started germinating within one month and further germination is expected as more rainfall occurs.

Wind-borne seed of plants such as those in the daisy family are continually arriving in the burned areas and have begun germinating, and more will arrive in Spring and Summer when seeds are ripening in adjacent areas.

Fungus on the soil surface was conspicuous within a fortnight or so of the fires. It plays an important role in recovery of the soil.

Depending on the severity of the burn, the native vegetation is expected to take from one to five years to recover. Some species will reappear as a dense 'flush' of regrowth and may provide important protection for the subsequent growth of other species, whereas some species will take much longer to reappear.

New plant growth will attract plant-eating animals, and when plants begin to flower, nectar-feeding birds and insects will reappear.

As the native vegetation recovers and the leaf litter layer returns, more and more native animal species will begin to return based on their individual food and shelter needs.

There is always of succession of dominance of different types of fungus, plants and fauna over the first few years following fire. Many of the species that are most abundant or lush after one year decline rapidly in subsequent years. This is true of native and introduced species.

What issues to be watchful for and what you can do

Straight after the fires the soil is vulnerable to erosion. If major soil loss was to occur, then the conditions for seed germination may be impaired. Please refer to the [note on soils](#) for more detail.

Reshooting native vegetation may be vulnerable to heavy grazing by wandering stock, pest animals such as rabbits and deer, or native animals such as kangaroos and wombats.

Given the size of the area burnt in these fires, this may be predominantly an issue near the edges of the burnt area.

If you have any wandering stock, use fencing to keep them out of regenerating areas of native vegetation and contain their range to less sensitive areas.

Take the time to observe the extent of grazing from pest and/or native animals, and if the impact seems to be severe you could consider using fencing to exclude them from 'islands' of regeneration until the vegetation is sufficiently mature, or forms of accredited pest animal control.

As with the native plants, some environmental weeds will be knocked down for a while, whereas others may reappear quite quickly as a dense flush of growth.

Initially, all regrowth, whether it is native vegetation or weeds, will be valuable for stabilising soils vulnerable to erosion. So observe what plants are returning, find out whether or not they are weeds, and if so find out more about control options and how long you may have before they begin to become a problem – e.g. some may take years to set seed. Many weeds in the daisy family, such as sow thistles and fleabanes, will seem prolific but soon disappear without action by you.

Artificial feeding of native animals is not recommended, but if doing so use foods like rolled oats and carrots rather than bird seed and hay so as to minimise the chance of introducing weeds into the recovering native vegetation.

Any installation of nest boxes should be delayed until adequate natural food supplies are available.



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Possibly one of the best things you can do after the fires with regard to native plants and animals, is to observe and record their return over time (please see notes on monitoring for more information). Fires of this scale and severity are not common and not a lot is known about how native plants and animals respond. Your observations can contribute to building that understanding.

Compiled by the Port Phillip and Westernport Catchment Management Authority.

Primary sources of information

"The effects of fire on Victorian bushland environments" Department of Sustainability and Environment 2004

"CAMPFIRE Year 1 Report" A.C.T. Waterwatch 2004

"Patterns of recovery after a bush fire", Australian Farm Journal BUSH, January 2004
Graeme Lorimer, personal communication

This bushfire note is for information only. Individuals and organisations are advised to seek additional and information advice before acting on information provided in this flyer.