

Burnt trees and their leaf litter – Nature’s protective barrier

Whittlesea Bushfire Recovery fact sheet

The issue

Following the February 2009 bushfires, much of the existing leaf litter on the forest floor was destroyed, leaving the soil exposed to wind and rain, making it vulnerable to erosion. In the weeks following the fires, many trees shed their scorched and burnt leaves, which formed a new, protective layer over the soil. When returning to their properties, some landowners cleared this leaf litter believing that it was material which was useless and hindering the bush’s recovery.

Council received many enquiries from bushfire affected landowners asking how they can minimise erosion and assist their bushland to recover. There are many things landowners can do to help their land heal and regenerate following the fires. However, one of the easiest and cheapest solutions is to allow natural regeneration to occur.

Erosion control

Down on the ground, burnt trees and fallen logs provide a completely different ecological service by controlling erosion, which can often be very expensive to fix.

Burnt trees can help stabilise soil by holding soil particles in place with their extensive root systems which are often still alive. Logs and fallen branches can form a protective shield for the ground by catching any loose soil and sediment. This natural shield can help stop valuable topsoil being blown or washed off-site which may otherwise silt up waterways and farm dams.

Nutrient cycling

Leaf litter plays an important role in returning nutrients to the soil, especially after fire.

As Australian soils are generally low in many nutrients, it is very important that any nutrients taken out of the soil and used by the native vegetation is recycled back into the system through the leaf litter.

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Once a fire passes through, the leaf litter is lost and the soil is sterilised by the heat. This alters the soil chemistry and stops the nutrient cycle. As new leaf litter is formed and starts to decompose, this allows all the soil microbes and fungi to start the nutrient cycle again. Once the nutrient cycle is functioning, nutrients are made available for plants so they can continue to grow and regenerate.

Habitat

Besides forming a protective barrier for the soil, burnt logs and fallen branches also provide valuable habitat for small critters, such as Blue-tongued Lizards and Antechinus, which are tiny insectivorous, mouse-like marsupials.

On warm, sunny days, lizards and skinks can often be seen scurrying along the ground from one fallen branch or log to another, hunting creepy crawlies, such as cockroaches and millipedes.

At night, Antechinus come out from their hiding places and go on the prowl for something tasty. Without the protection of fallen branches and logs, Antechinus and other small marsupials would become easy prey for Southern Boobook and Tawny Frogmouths and could potentially become locally extinct.

Retention of burnt trees

The retention of fallen logs and burnt trees, whether they have hollow or not, play an important role in ensuring bushfire affected forest, woodlands and farming land recover swiftly, enabling the natural balance of the Australian environment to be maintained. Before removing fallen wood in the forests or that old burnt-out hollow tree down the back paddock, consider what effects this may have. You may be just about to remove habitat of an animal which has been providing a free ecological service, such as pest control, or you could be making your property more prone to land degradation processes.

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For more information on this and other land management issues, please contact Council's Sustainable Land Management Unit on 9217 2437 / 9217 2493 or sustainability@whittlesea.vic.gov.au