NSW GOVERNMENT Local Land Services

Factsheet

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Scattered paddock trees

Scattered paddock trees are an important part of the landscape and play a number of roles on a healthy and productive farm.

Benefits for your farm

Scattered paddock trees provide a range of benefits for productivity including:

- **Pest control.** Bats atnd birds that roost in trees can significantly reduce the number of insect pests.
- **Stock and crops thrive better with shelter.** Trees give protection from the wind and extreme temperatures.
- **Salinity management.** Trees can improve waterlogging and dryland salinity problems.
- **Improved soil structure.** Wind and water erosion is reduced with remnant vegetation.
- **Better quality soil.** Soil fertility improves as leaf litter and animal droppings break down, returning nutrients to deep soil beyond the reach of the pasture root zone.
- **Natural regeneration.** Mature trees provide the seeds to grow young trees and create the right conditions to grow native grasses and shrubs.
- **Bee products.** Valuable for apiary, honey, bees wax and pollination, although feral bees can exclude native fauna from tree hollows.

Benefits for our wildlife

Scattered paddock trees also provide an important function for our wildlife including:

- habitat hollows for many birds, mammals, such as micro bats, reptiles, frogs, insects and spiders
- a stepping stone for animal movement between patches of native vegetation
- important fauna food sources like nectar, foliage and insects.

About one third of agricultural land in the Australian temperate zone contains scattered paddock trees.

Most of these trees are very old and there are often insufficient young trees growing to take their place, including some over cleared species such as White Box and Yellow Box.

Even dead and unhealthy scattered paddock trees are important as they provide homes and shelter for wildlife. The big concern is that in 40 years all of these paddock trees could be gone.

1. Trees provide many benefits including shade for stock and habitat for wildlife.

About tree hollows

Scattered paddock trees are important because they often contain hollows or are of hollow forming age.

Since it takes at least 60 to 80 years for hollows to develop, we need to conserve mature trees to ensure the survival of animals and plants that depend on them, until replacements have grown. Some trees, such as red gums, need over 100 years to develop hollows.

Planted trees do not replace the established trees until they have formed the full range of tree hollows, cracks and loose bark needed for wildlife. If we keep our scattered paddock trees in good condition, we can pass on a valuable natural resource to the next generation of land holders.

In many instances, scattered paddock trees are the only remaining trees of highly cleared vegetation communities, for example grassy box woodlands.

Eucalypts are the most important trees in the catchment when it comes to providing homes and food for a range of animals.

But not all eucalypts are equal. The size, age and type of tree can make a big difference to the shelter available for animals. For example:

- most eucalypt trees with a diameter of more than 60cm have medium and large tree hollows
- the best hollows are found in the various species of box tree and river red gums.
- eucalypts are the home of choice for many unique species including a variety of insects, spiders and other invertebrates
- in box and ironbark forests 61% of mammal species and 20% of bird species depend on hollows
- some threatened bird species rely on particular eucalypt species for nesting and food.

Non-eucalypts are also important because they contain small tree hollows and bark that create shelter for smaller animals.

2. The trees in this landscape are important for wildlife and the sustainability of the land but there are few trees to replace those that die.

3. Bats using tree hollow for shelter – insectivirous bats such as these provide natural pest control (Photo courtesy Julie Lincoln, Warren Advocate).


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Cracks and crevices for wildlife

There are a number of trees that do not form many hollows such as the Cypress Pine, Myall, Leopardwood, Bulloke and Red Stringybark. However they provide cracks and crevices that are habitat for small mammals and reptiles.

Cracks and crevices provide food and shelter from predators and protection from extreme temperatures for many animals.

For example, Casuarinas such as Belah and Bullokes are important because they provide food and shelter for Glossy Black Cockatoos, which are listed as threatened species. Cracks and crevices also provide habitat and food for the following:

- 400 Australian vertebrate species, of which 100 species are threatened or near threatened
- 66% of bats
- 31% of tree dwelling mammals
- 15% of land birds
- 13% of all frogs
- 10% of all reptiles.

Food and nesting sites for wildlife

Flowering. Honeyeaters, sugar gliders and many other animals depend on nectar and pollen. Some birds follow the flowering trees as they blossom. Not all eucalypt trees flower at the same time, so the birds need to have a variety of tree types across the landscape to get nectar throughout the year.

For example, blue-leaved ironbarks flower in winter and narrow-leafed ironbarks in spring – together they provide a reliable food supply.

Leaves. Leaf eating animals like koalas, possums and gliders need a range of trees to choose from because not every tree has good food. For example, some gum leaves cannot be eaten because they are too toxic and not as nutritious as the leaves found on other trees.

Insects, spiders and other invertebrates. Large 'habitat' trees are a haven for invertebrates such as insects and spiders. Many birds and reptiles collect food from under the bark, on leaves, around flowers and amongst the debris that falls under the trees.

Nest sites. Even small trees can be the home for nests of large birds such as wedge-tailed eagles.

4. Geckos live under the bark of paddock trees.
5. Spiders likewise seek shelter in tree habitat.
6. Young Ravens almost ready to fly from their nest at the top of a Belah tree.
7. Wedgetailed Eagle nest in a Leopardwood tree.

8. Stock camping under paddock trees for shade and shelter can impact tree health.

What is happening to our habitat and paddock trees?

Even in big patches of native vegetation the number of large trees (or habitat trees) has been reduced to **one tenth** of the original density.

These large habitat trees are disappearing because of:

- **Old age.** Many large trees are probably at the end of their lifespan and there are no replacement trees. This is happening more quickly as a result of routine agricultural practices.
- **Insect damage.** Stressed trees are in more danger of being attacked by Christmas beetles, leaf miners, sawfly larvae, lerps and scale insects.
- **Mistletoe infestation.** Stressed trees are at more risk of heavy infestation by mistletoe.
- **Wildfire.** Hollows make established trees more susceptible to being burnt out as flames can funnel up the internal hollows and still be burning sometimes weeks later.
- **Stubble and log litter burning.** This frequently leads to the death of paddock trees.
- **Clearing.** Paddock trees are still being removed for fence replacement and access for wider machinery.
- **Cultivation.** Surface roots are damaged if cultivation takes place too close to the tree. This can make it difficult for the tree to get enough water and nutrients and increases the chance of fungus and insect attack.
- **Pasture improvement, fertilizers and herbicides.** Dominance of exotic pasture grasses (like phalaris) affects the tree's chances of survival. Some exotic grasses can take the tree's moisture and inhibit the seedling regrowth.
- Fertilizers change soil nutrient levels. Knockdown herbicides and non-lethal levels of herbicide from drift can slowly kill mature trees.
- **Stock.** The loss of ground cover from stock causes soil compaction and degradation, erosion and a change in soil fertility from the buildup of manure. Stock can also ringbark rough-barked trees such as stringybark, peppermint and box trees as well as kill seedlings.

These factors result in dieback, which is the long drawn out decline in a tree's health.

It starts with the ongoing dying back of the tips of twigs, branches or tops of trees. With constant and repeated stress, the tree eventually dies.

9. A eucalypt tree showing symptoms of dieback.

Protection and regeneration

Some ways to protect scattered paddock trees and limit dieback are:

- fencing to protect selected trees from stock and routine agricultural practices in the paddock
- plant shade trees away from isolated paddock trees for stock
- wrap wire netting around trees that are being ringbarked by stock
- do not apply fertilizer in the root zone of the tree
- reduce herbicide spray drift as much as possible
- don't burn logs, stumps, or fallen branches - if they are in an inconvenient place, move logs to a more appropriate remnant vegetation area or creek as wildlife habitat.

Ways to help natural regeneration to take place:

- use temporary fencing and enclose an area twice the size of the tree canopy to encourage regeneration
- manage grazing to help young plants survive
- control herbivores such as rabbits, hares, goats and kangaroos.

Mistletoe

Mistletoes are natural parasites of trees and shrubs. There are many varieties of native mistletoe and each one generally has a type of host tree or shrub that they prefer.

Many host plants can carry a few mistletoes and survive but if the host plant has a severe infestation then the mistletoe can kill the tree or stunt its growth. When the ecosystem is out of balance, mistletoes are more likely to infest trees and speed up their death.

Mistletoes are important for many native animals. The protection they provide make them popular places for bird nests and many butterflies and moths depend on them.

Most mistletoe flowers are brightly coloured and produce a good supply of nectar which is harvested by many nectar feeding birds.

The seeds are mostly spread by the tiny mistletoe bird which deposits the sticky seeds on the branch of a host tree.

The seeds are eaten by parrots such as rosellas, while possums and gliders eat the nutritious, succulent mistletoe leaves.

These animals play an important role in controlling mistletoes. In areas where the animals no longer naturally control the mistletoe, the excess is best managed by pruning and pollarding.

Long term control requires landscape restoration and revegetation.

10. Yellow-rumped Thornbill nest in mistletoe.

11. Severe mistletoe infestation.

References

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