Why are paddock trees important?

Paddock trees and small patches of native trees play an important role in maintaining the productive capacity of the South West Slopes and they are critically important to the conservation of the natural flora and fauna found in the South West Slopes.

Reducing stock and crop stress
Paddock trees provide shelter from wind, heat and cold for pastures, crops and stock. Sheltered off-shears wethers require only about one third the amount of supplementary feed to maintain bodyweight compared to those that are unsheltered. Cattle fed in natural shade reduce their daily feed intake by 25% compared to cattle fed in open shade. Paddock trees provide shelter from wind, which can help to reduce wind erosion and improve the growth of grasses.

Reducing salinity risk
Widely-spaced trees develop a large root volume and have the potential to intercept and pump considerable volumes of subsurface water, leading to a lower water table and a reduction in the risk of salt being carried to the surface.

Reducing erosion & improving water quality
Tree roots help reduce erosion potential, especially in gulley and along creek banks. Fallen logs, leaves, branches and litter help to slow the impact of rainfall and runoff and its erosion potential. A long creek banks trees, roots and debris provide a buffer strip that can filter unwanted nutrients and silt from runoff into the creeks and improve water quality.

Reducing crop stress
Tree roots help reduce crop stress, especially in gum trees. Gum trees provide shade to crops, which can help to reduce the amount of supplementary feed required. Paddock trees provide shelter from wind, which can help to reduce wind stress and improve the growth of crops.

Providing wildlife habitat
Birds, bats and other animals use paddock trees for nesting, feeding, protection from predators and as a ‘stepping stone’ to larger stands of vegetation. Tree hollows, including those in dead trees, are used for nesting while fallen timber provides habitat for small ground-dwelling animals such as reptiles. There are also a number of species found on the South West Slopes that are threatened with extinction due to the loss of their natural woodland habitat. These include the Superb Parrot, the Regent Honeyeater, the Bush Stone-curlew (or Bush Thick-knee) and the Squirrel Glider.

Increasing nutrient cycling
Tree roots reach lower into the soil substrate and reach nutrients in the soil which have leached beyond the pasture root zone. Fallen tree debris reintroduces these nutrients back into the top layers of the soil.

Encouraging understorey plants
Paddock trees provide favourable conditions for some native grass species and flowering shrub species that attract insect-eating birds. Native grasses are being increasingly used as fodder reserves.

Providing a source for natural regeneration
Regeneration of native plants can occur through the germination of self-sown seeds or by vegetative means (e.g., from stumps). Paddock trees are the best seed source for regeneration of local tree species. Generally, naturally seeded trees grow more quickly than planted trees and help to replenish local genetic tree stock. Collection of seed from single isolated trees should be minimised as this seed is likely to have reduced genetic quality.
Why are paddock trees disappearing?

Most paddock trees and other small patches of native trees on the South West Slopes are mature trees with little or no natural understorey and regeneration of these trees is extremely limited. If attention is not given to maintaining or re-establishing these trees then it is likely they will disappear from the South West Slopes landscape within 40 years. There are five main reasons why the paddock trees and small patches of trees are disappearing:

- **Senescence - old age**
  The wood and trees of the South West Slopes can live for up to 500 years. Many of the trees currently found in paddocks on the South West Slopes are at the end of their life span and if regeneration is not encouraged these trees, their genetics and their habitat value will be lost from the landscape.

- **Fragmentation - breaking up of areas**
  Most of the paddock trees and small patches of native trees remain on the South West Slopes were once part of woodlands. They were surrounded by other tall vegetation and had an understorey of native grasses, shrubs and vegetation of different ages including regenerating tree seedlings. Current land management practices mean paddock trees and small patches of native trees are now more exposed to natural elements and introduced agricultural activities.

- **Dekbak - early death**
  The health of many paddock trees is declining as the insects that naturally feed on woodland trees become more concentrated on the few trees that remain. As well, the insects are not kept under control by natural predators such as birds because they are also less abundant in areas with isolated trees. Mistletoe, a natural parasite, also becomes a problem when it is more concentrated on the few remaining woodland trees. Stock contribute to death by camping under the remaining vegetation and changing the nutrient load in the soil through their urine and faeces. They also trample and compact the soil limiting the growth of seedlings and natural understorey plants. Stock may also drop the bark from existing trees which exposes them to greater disease risk. Other causes of death include fertiliser application which changes soil nutrient levels around trees and herbicide applications which affect trees and regenerating seedlings.

- **Stubble burning**
  Stubble burning also threatens paddock trees. While burning may be necessary in some cases, farmers should protect their trees by establishing an adequate firebreak.

- **Clearing**
  Paddock trees and standing timber and standing dead timber are still being cleared for plantation establishment, firewood collection and paddock management purposes. Under the provisions of the Native Vegetation Conservation Act 1997, consent for clearing may be required from the Department of Land and Water Conservation. Please contact the local DLWC office prior to commencing any clearing activity. In some areas, the clearing activity may be covered by a Regional Vegetation Management Plan, which contains information and guidance on managing native vegetation in the specific region covered by the Plan.

How can paddock trees be saved?

Fencing around existing trees on a permanent or long-term basis (e.g. ten years) will allow natural regeneration to re-establish quickly and effectively. The fence must be much wider than the tree canopy as robust seedlings will not regenerate directly underneath the trees. Preferably include several trees in the fenced area. Apply the same fencing techniques to trees on watercourses.

Main priorities to protect existing areas of trees:
- allow livestock access only at critical times
- allow tree debris to remain on ground
- avoid fertiliser application and cultivation near native trees
- control the spread of weeds
- avoid herbicide drift onto paddock trees
- ensure adequate fire breaks around paddock trees during stubble burning
- retain standing dead timber, rocks, logs and stumps as habitat for birds, bats, lizards and other native fauna.

Main priorities to create suitable conditions for tree regeneration:
- avoid herbicide drift onto regenerating areas
- allow tree debris to remain on ground
- control weeds before the tree seeds fall to the ground
- re-establish missing native shrubs and grasses using local seed
- avoid fertiliser application and cultivation in regenerating areas
- exclude non-native animals (especially rabbits and hares)
- use fire in the regenerating patches for ecological purposes only. The use of fire may be considered clearing, and under the provisions of the Native Vegetation Conservation Act 1997, consent for clearing may be required from the Department of Land and Water Conservation. Please contact the local DLWC office prior to commencing any clearing activity.