



## SUSTAINABLE FARMS

HEALTHY FARMERS, HEALTHY FARMS,  
HEALTHY PROFITS

# Shelterbelts

## What are shelterbelts?

Shelterbelts are usually linear strips of woody vegetation that have been planted for the purpose of providing a wind buffer and shade for livestock. Shelterbelts are often planted along fencelines, but enhancing existing remnant vegetation in areas such as creeklines, old wooded paper/crown roads, and around paddock trees can give extra benefits, and relatively quickly. Well-designed shelterbelts provide a multitude of benefits to farm productivity and wildlife conservation.

## Why use native species?

Although exotic species can be used to form shelterbelts, native species provide additional benefits to biodiversity by providing superior habitat for wildlife. Native species are adapted to local conditions and are thus easier to establish and more likely to survive, even in times of drought. Furthermore, native species also make it more likely that ecosystem processes will be restored and/or maintained.

*“I see investing in shelterbelts as investing in the capital of the property. There is no doubt of the benefits they provide to the livestock and the birds. We have also noticed we no longer have issues with redlegged earth mite.”*

*Paul Graham  
‘Bongongo’, Adjungbilly NSW*

## Provision of shelter has been shown to

- Reduce lamb mortality by 10%
- Increase live-weight gains by 21%
- Increase wool production by 31%
- Increase cattle yields by 20-30%
- Significantly reduce redlegged earth mite
- Significantly increase bird diversity.



Incorporating paddock trees in shelterbelts protects these important features and gives the shelterbelt a 200 year headstart.



Decreased wind speeds also reduce the amount of heat and cold stress experienced by livestock

## Shelterbelts enhance farm productivity

In the past, shelterbelts have primarily been established to serve as windbreaks to reduce wind speeds, reduce moisture loss from the soil (which improves pasture and crop yields) and protect livestock from wind chill.

Shelterbelts can provide effective protection from winds for a horizontal distance of approximately 12 times their height.

Reductions in wind speed also lead to other benefits to farm productivity, such as topsoil retention and moderating chemical spray drift. Windbreaks reduce the distance that airborne droplets travel and also filter them out of the air before they can reach unintended areas, such as neighbouring farms, paddocks and homesteads.

Decreased wind speeds and the shade and frost protection provided by shelterbelts reduce the amount of heat and cold stress experienced by livestock. This allows livestock to dedicate less energy to self-maintenance, which can result in improved farm productivity. A study has found that the presence of shelterbelts resulted in wool production increasing by almost a third, and a 21% increase of live-weight over a 5-year period.

If shelterbelts are planted along farm boundaries, nose-to-nose contact with neighbouring livestock can be eliminated, thus providing biosecurity benefits.

Furthermore, increased pasture yields coupled with the reduced energy demands of livestock will increase sustainable stocking rates.

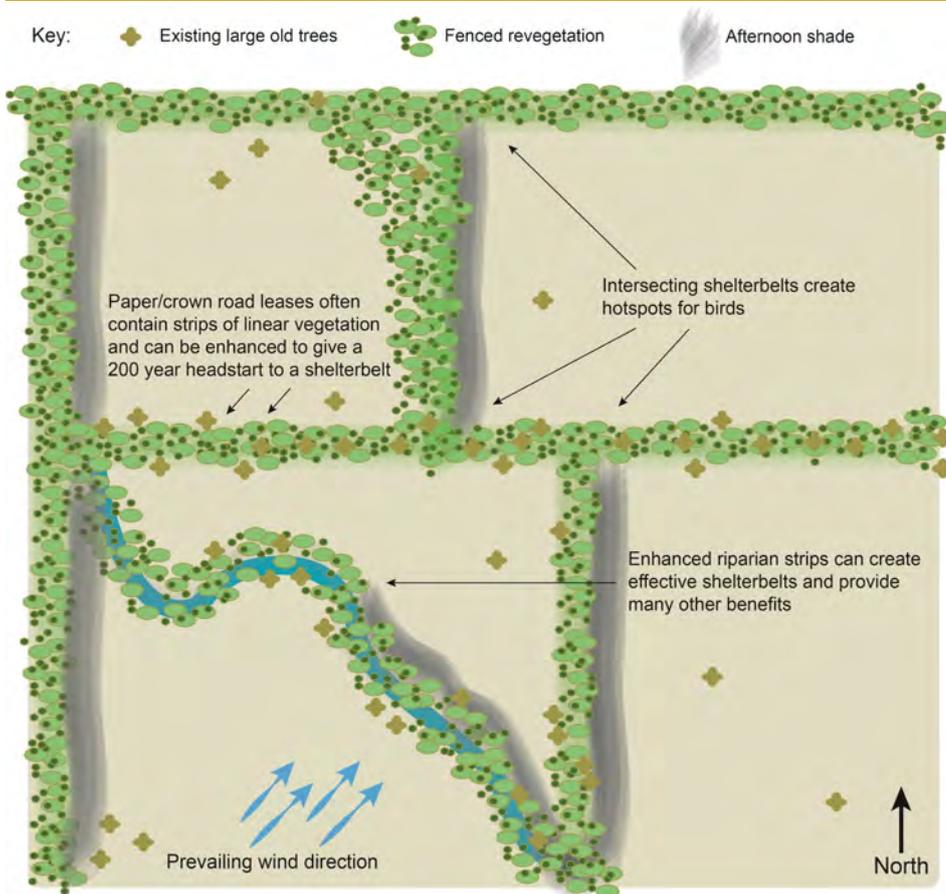
## Shelterbelts and biodiversity

Shelterbelts provide essential habitat for native wildlife, including species that are threatened with extinction, such as superb parrots, flame robins, speckled warblers and squirrel gliders. Areas of dense shrubby and grassy vegetation and areas that are left undisturbed by agricultural activities such as cultivation, livestock grazing, or chemical applications, provide ideal habitat for farm wildlife to nest, shelter, forage and burrow. Shelterbelts can also be designed to form corridors for wildlife to move around farms and the broader landscape.

An increase in biodiversity is good for healthy ecosystems and the ongoing provision of ecosystem services, such as natural pest control by native insectivorous species (including invertebrates, birds, bats and reptiles that eat crop pests) and crop pollination.



Many bird species, such as these grey-crowned babbler, inhabit shelterbelts



## Shelterbelt location

The best way to plan the location of your shelterbelt is by completing a whole-of-farm plan for your property, identifying existing natural assets and other management considerations.

The siting of the shelterbelt will be influenced by the location of infrastructure, prevailing seasonal wind directions, soil type, areas of erosion and salinity, remnant vegetation, use of non-arable areas, the need for shade, and other specific on-site features.

Wider shelterbelts (20-30m) provide more effective wind protection and superior habitat

for birds. Narrow plantings of less than 20m width still can provide important functions but are susceptible to the loss of individual trees creating wind tunnels. A shelterbelt that takes in existing paddock trees, dead trees, roadside remnant vegetation, logs and rocky areas will improve wildlife outcomes by conserving and enhancing habitat, and providing wildlife with a greater variety of resources.

## Shelterbelt planting

To maximise the success of your shelter belt, good forward planning is essential, including preparation of the selected site before planting or seeding. For example, deep ripping might be needed if the area is to be planted with tubestock, or weed control undertaken to suppress competition from weeds. Erecting and maintaining good quality fencing is essential to protect the shelterbelt from livestock.

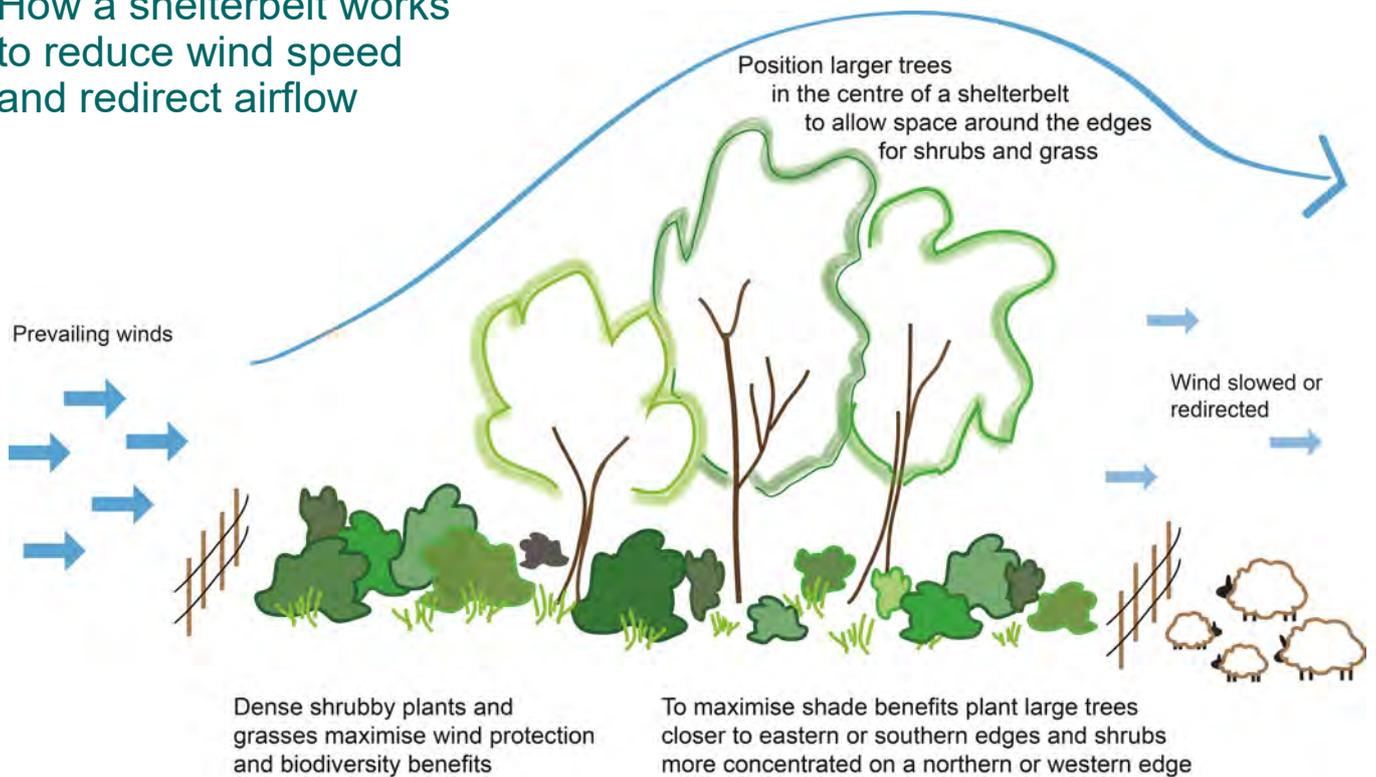
A combination of carefully selected native trees and shrubs will provide the most effective shelter from wind over a greater area and habitat for a greater diversity of native wildlife. Select species that are native to the local area, or other native species that will thrive in the area. This will help ensure the long-term survival and functionality of the shelterbelt. Plant taller-growing trees in the middle and shrubs along the edges of a shelterbelt to create a more functional wind break and enable shrubs to survive longer.

A diversity of species has benefits for wildlife. Include plant species that flower at different times of the year. The incorporation of large old trees into shelterbelts significantly increases their biodiversity value, as they provide additional wildlife resources, such as hollows and more reliable food supplies.



Shelterbelt with shrubs and grassy habitats on the edges

## How a shelterbelt works to reduce wind speed and redirect airflow



### Tips

- The wider the shelterbelt, the better
- Incorporate existing paddock trees or other remnant vegetation
- Enhance other linear vegetation, such as along creeklines, into effective shelterbelts
- Use a diversity of local native species or other native species that will thrive in your local area
- Don't over-use eucalypts, as these will crowd out midstorey and understorey species
- Plant shelterbelts that interconnect

### Supporters



### Contact us

For further information on shelterbelts or Sustainable Farms

T: (02) 6125 1494

E: [sustainablefarms@anu.edu.au](mailto:sustainablefarms@anu.edu.au)

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