Broad design considerations for your Natural Shelterbelt

- Use indigenous plants in your natural shelterbelt. Avoid using non-local Australian natives. Tip: Local plants for local wildlife.
- Your are creating a shelterbelt for both Farm Productivity and to improve its Bio-diversity. Therefore, the structure of your belt will be similar to that of a stand of good-quality remnant bush with a range of plant forms. These forms will vary from tall trees to smaller trees, and larger understorey plants to smaller understorey plants; there will be groundcovers such as grasses and sedges, climbers, and in time much smaller plants including mosses, lichens and fungi will establish on their own.
- The plants species selected for your shelterbelt will depend on its terrain; a belt running along a ridge-line will comprise different species to one running along a damp gully. Your local indigenous nursery will be able to advise you on species selection and on the best mix of plant forms.
- The wider your shelterbelt the better. There are many species of wildlife which seek the safety of the inner-most parts of native bush when nesting and feeding. The outer edges of your shelterbelt will expose them to birds of prey, and if the belt is too narrow, they will simply not exist there.
- Adding a few features to supplement your planting will greatly enhance the ñlive-abilityò of your shelterbelt:-
  - Nest boxes will make up for the lack of natural tree hollows and provide a home for some bird species, bats and arboreal mammals. Mount them on high posts initially, and as your trees grow, then mount them higher up those trees
  - Large fallen tree limbs and logs make great habitat for ground-dwellers
  - Rocks and boulders also offer shelter for smaller animals
- Incorporating all or part of a permanent or ephemeral water-body into your shelterbelt such as a dam, creek, drain or spring will allow wildlife to safely access water under the cover of vegetation.
- Linking up shelterbelts in other paddocks, and linking into remnant native bush will allow wildlife to move throughout the landscape in its quest for food and mates. This is vital for the long-term viability of your wildlife population. Creating such Wildlife Corridors is one of the most important things that private landholders can do to enhance the bio-diversity around their farm !
- Orientate your shelterbelt perpendicular to those winds which are most harmful to your stock. Winds will inevitably blow from different directions at different times and it will be impossible for one linear belt to provide all the shelter needed in one paddock. Consider establishing ñcorneredò belts, which are belts running down two fence lines from the one corner of the paddock. North-south shelterbelts will avoid casting permanent shade into your crops or pasture.

- Shelterbelts should slow wind down, not try to stop it or deflect it. Foliage should extend from the ground right to the top, and it should be sufficiently permeable to allow wind to pass through at a reduced speed. A natural shelterbelt with a good species mix of trees and understorey plants will perform much better than a very sparse or very dense/impermeable Cypress Pine or exotic windbreak.

A Word on Maintainenance

As a general rule, a little maintenance often is better than a big ñfix-up jobò just occasionally. Once you have created your natural shelterbelt, it will be too easy to walk away and forget about it. However, some periodic maintenance is required, so remember to install a farm gate when you erect the fence. Keep an eye out for:-

Pest animals - Vegetative cover and the prospect of easy pickings from your new wildlife residents can attract feral pests such as cats, rabbits, foxes and Indian Mynahs to the belt.
Weeds - Keep an eye out for weeds and keep them under control.
Fences - Keep your wires taut and trees and limbs off them, and your livestock will stay out.

Monitoring

Take an interest in your new wildlife presence. Observe the various species and keep a list of what creatures you spot. Ponder any seasonality of their presence; note any migrating birds which drop into your shelterbelt.

Most of all, take time to enjoy your wildlife and take pleasure from your contribution to their well-being!

What Next ?

For advice on what funding may be available to help you implement your project or to discuss in more detail any topic raised in this booklet please contact the Mornington Peninsula Landcare Network on 0408 213 079. If required a visit to your property can be arranged.

Further References:

Mornington Peninsula Landcare Network - https://www.mplandcare.org.au/revegetation

Mornington Peninsula Shire https://www.mornpen.vic.gov.au/Environment/Natural-Environment-Biodiversity/Plants-of-the-Peninsula

Acknowledgements:
Originally written by Mike Haughton for the Latrobe Catchment Landcare Network, May 2011.
Photos: Mike Haughton.

The Mornington Peninsula Landcare Network acknowledges the support of its various partners, including the Western Port Catchment Landcare Network in the production of this edition of the guide

Create Practical Shelterbelts using Native plantings

A guide for creating shelterbelts using locally-native plants.

One in a series of Practical Landcare guides

Introduction

Shelterbelts are important pieces of infrastructure on the farm; they offer productivity gains to livestock and cropping farmers. Traditional shelterbelts, commonly known as “windbreaks”, were usually established with tree species such as Cypress Pines. These windbreaks, whilst offering the farmer some means to protect stock and crops from winds, did nothing to benefit local wildlife.

This guide, one in a series of Practical Landcare guides, offers you the landholder, ideas on how to establish Natural shelterbelts to make not just productivity gains on your farm, but to create a place of valuable habitat for your local wildlife. This guide does not provide detailed design elements (there are plenty of other references available for this purpose) but it does highlight the virtues of using locally-native plants species to establish a natural shelterbelt.

Inspired with this knowledge, you will be able to make a valuable contribution to the bio-diversity of your local environment by creating both an important piece of farm infrastructure and a healthy eco-system at the same time.

Why Natural Shelterbelts are superior to Cypress Pine windbreaks

Well-made natural shelterbelts offer effective wind screening for stock and crops. This is important for you because it contributes to the productivity of your farm. There has been much science conducted to quantity the productivity gains arising from providing shade and shelter to stock and crops.

A natural shelterbelt comprising locally-native (indigenous) plant species can offer very effective shade and shelter whilst creating a place of valuable wildlife habitat. Using the right mix of plant species and plant forms (trees, shrubs, etc) in the right density and at the right spacings will create a healthy eco-system with a great diversity of plant and animal species. A food web is created, where all creatures eat and are eaten. Your eco-system will comprise all manner of plants, lichens, mosses, fungi, birds, mammals, bats, reptiles, amphibians, insects, macro-invertebrates, and countless other organisms living within its soil.

Creating a healthy eco-system within your natural shelterbelt offers local wildlife not just a place of habitat, but a valuable place of refuge and source of food; some species will now have a place to nest and to breed and to perform breeding rituals.

Cypress windbreaks are problematic for you the farmer, and they offer nothing to support our wildlife. Foliage can be too sparse. It can be too dense, preventing wind from permeating at reduced speed, thus promoting turbulence. Limbs can break off with age. Unfenced Cypress windbreaks are exposed to stock browsing foliage on lower limbs, leading to gaps at ground level through which the wind can roar. Stock camping under Cypress Pines may be exposed to toxic foliage; pregnant cows, in their last tri-mester, are likely to abort after eating Cypress foliage. Denuded soil at the base creates a haven for weeds such as Deadly Nightshade. The mono-culture nature of these windbreaks leaves them vulnerable to significant pest attack from such diseases as Cypress canker (Seiridium cardinale).

A Cypress windbreak, in a state of collapse, with sparse foliage and falling limbs is ugly and detracts from the physical beauty of your farm. Maintainenance of these windbreaks adds unnecessarily to your workload.

So, what are the benefits of a natural shelterbelt ?

There are numerous benefits, both for your Farm Productivity and for the Bio-diversity of your local environment:-

- Indigenous plants, grown from local-provenance seed have evolved over eons to be best-adapted to local condtions. They will have the best chance to survive frosts, fire and pest attack. Damaged, they will regenerate from seed (stored in the soil), from roots or lignotubers and from epicormic buds in the stem. A shelterbelt comprising indigenous plants is durable & resilient. This means that there are substantially lower costs for re-establishing a damaged shelterbelt than there are for re-establishing a damaged exotic windbreak. A mix of plant species as found in a natural shelterbelt is much more resilient to pest attack than the mono-cultural exotic windbreak.

- Creating a natural shelterbelt is often the only reason that a private landholder will undertake a tree-planting project. Establishing the shelterbelt introduces back into the landscape sorely-needed native vegetation - sorely needed, because in its absence, our local wildlife lacks essential habitat.

- Land-clearing for farming and housing has reduced the amount of native vegetation available for wildlife habitat. Fragments of remnant bush, often de-graded with poor species composition, dot the landscape. On their own, these “islands” offer little to our wildlife, but linked by natural shelterbelts, wildlife is able to move about the landscape in its quest for food, habitat, refuge and breeding. Such linkages are called wildlife corridors.

- Shelterbelts can be used for good effect in fire protection. They can be used to protect farm buildings from flames, embers and radiant heat. Because shelterbelts slow down the wind, they can be very effective in reducing the impact of bushfire on the farm. There is much literature available on the topic of using shelterbelts to offer fire protection - use your favourite Internet search engine to search on “shelterbelts for fire protection”.

Effective shade and shelter for livestock, and great Habitat for local wildlife

...Continued

- A well-managed property, with aesthetically-pleasing landscape features and with a healthy natural environment (with birds and butterflies in abundance) offers the landholder a great deal of satisfaction and contentment. A well-managed property requires the least amount of work in return for the most amount of farm productivity. The farm becomes a good place to be, rather than a place to toil. Prospective buyers will sense this and the re-sale value of your property will reflect this.

- The positive benefits of the healthy eco-system you create will extend beyond the shelterbelt out into the broader farmland. For example, birds living in the shelterbelt can fly out to predate crop-damaging insects beyond. In the same way, isolated living remnant trees, which too are highly-valued, are also protected by your shelterbelt inhabitants; “dieback”, the scourge of many old lone remnant trees, is blamed on the lack of bio-diversity and an unhealthy eco-system. Your shelterbelt can help to protect our old remnant gum trees !

The downside of using Exotic species

- Compare the explosive power of a burning Pinus radiata (Monterey Pine) plantation with the more-benign burning green, species-rich natural shelterbelt. Unlike exotic windbreaks, natural shelterbelts will not be lost when burned. Temporarily damaged - Yes, permanently lost - No.

- Some exotic species used in windbreaks are weedy - Pinus radiata is a good example of a tree which will readily take hold on roadsides and in native forests. Its seed is fine and is released in vast plumes to drift on the wind.

A barren place for stock and wildlife