

Farm Forestry in the Adelaide Hills/Fleurieu Peninsula



INTRODUCTION TO FARM FORESTRY

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If you own land in the Adelaide Hills or Fleurieu Peninsula you could benefit from diversifying into farm forestry. This introductory Farm Forestry Note outlines some of the advantages and factors you need to consider. It should help you decide whether farm forestry is suitable for your own property. If you are encouraged by this general introduction, Farm Forestry Notes on more specific topics are available.

What is farm forestry?

Unlike industrial forestry, farm forestry does not require you to set aside large areas of land for long periods. It does not mean switching completely from farming to forestry. Plantings can be integrated with other farm activities to fit into your individual property plan and your own aspirations.

Farm forestry is not only for commercial farmers — it is particularly suited to hobby farmers with off-farm income because it does not require the daily or even weekly input of many other forms of agriculture. Farm forestry can return under-utilised former agricultural land to a productive state, helping the environment as well as generating income.

More than just planting trees!

Previous revegetation activities through Landcare have generally used local native species with the aim of protecting the environment and rehabilitating degraded land. However, we realise that landowners cannot be expected to go on planting trees with little prospect of direct economic return.

Farm forestry offers progressive farm managers an opportunity to achieve significant financial returns while helping the environment.

Farm forestry differs from other forms of revegetation because of its emphasis on:

- using a broader range of species
- the profitability of plantings
- the need for active management of plantings

If your farm forest is to be profitable and address environmental considerations, it *must* be well designed and managed .

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Opportunities in this area

The soils and climate of much of the Adelaide Hills and Fleurieu Peninsula are well suited to commercial timber growing. There are opportunities to build on the existing forest industry and to create a new native timber industry within the region.

Farm forestry is a sustainable land use which will:

- protect soils and water quality
- complement the rural character of the landscape, providing a pleasant living environment
- improve agricultural productivity
- improve farm viability by diversifying income
- complement native vegetation
- provide wildlife habitat.

What are Farm Forestry Programs?

The Commonwealth Government has recognised the potential that farm forestry offers for combining economic development with environmental protection. It has established the Federal Farm Forestry Program as part of a national drive to treble Australia’s plantation resource.

The main aims of the Regional and Federal Farm Forestry Programs are to:

- improve landowners’ knowledge and skills
- provide information on commercial tree growing
- establish demonstration plantings
- encourage formation of regional tree grower groups.

The prospects

As the global population increases there is a growing worldwide demand for wood. However, at the same time there are increasing environmental pressures to conserve Australian native forests and traditional softwood forests in North America while hardwood forests in South East Asia are becoming depleted. Future wood supply is becoming uncertain! (See Figure 1).

There is therefore a great opportunity for farm forests and private plantations. Farm forests planted *now* will help alleviate the projected shortfalls in timber supply when harvested next century.

What are the financial possibilities?

Farm forestry can offer you much better returns than grazing sheep or beef cattle (currently giving a regional average gross margin of \$120 per hectare). Table One gives an indication of likely returns.

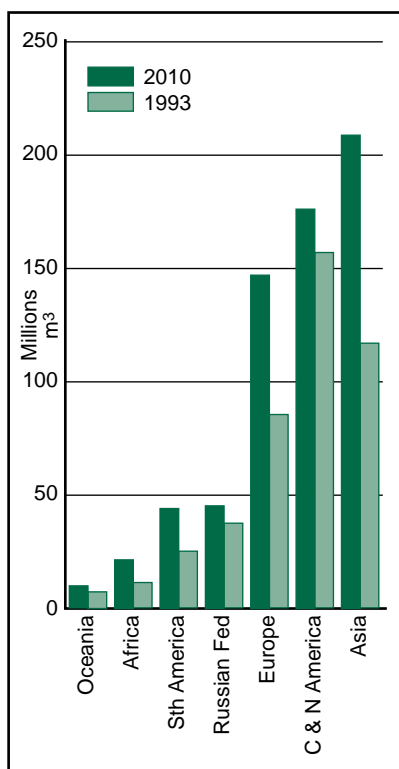


Figure 1: Total world sawn timber consumption by region and estimates at 2010. (Source: Neufeld 1996, *At the Crossroad – Forest Industries Annual 1997*)

Table 1: An indication of a range of likely farm forest returns.

Development	Establishment cost \$/ha	Length (years)	Returns (\$)	Returns per year (\$) (Not discounted)
Eucalypt woodlot	740	45+	12500-24500	350-700
Radiata pine forest	600	35+	21000-38000	600-1100
Wide-spaced eucalypt agroforest	520	35	7500-13500	300-600
Wide-spaced pine agroforest	370	25	22500-30000	900-1200
Eucalypt firewood woodlot	880	10-12	1500-6000	150-600

Establishment costs include contract site preparation and weed control and 'do-it-yourself' planting.

Costs and returns are projected on today's prices (they have not been discounted to net present values) and no attempt has been made to predict future price trends of logs.

returns from grazing in wide-spaced agroforests have not been included.

Actual returns will be dependent on site quality (growing conditions) and sound establishment.

What are the other advantages?

In addition to the likely returns, farm forestry offers you other advantages:

- establishment, management and maintenance costs are tax deductible
- you will need less capital input than for many other alternative enterprises
- you will not be tied to the property, unlike the weekly or even daily demands of other agricultural activities such as livestock or horticulture
- the capital value of your property will improve
- large lump sums of revenue can provide the basis of a superannuation investment for your long-term security
- you will develop a desirable living environment
- you will help create employment and new service industries while improving the environment
- you will help satisfy the competing demands of the region for tourism, water harvesting, rural living and primary production.

Why not sit and watch your trees grow rather than constantly worry about a handful of livestock and weeds?

Okay, I'm interested! What next?

If you are interested in the concept of farm forestry, there are four things you now need to consider:

- which species to plant
- your potential market and product options
- the design of your planting
- your potential returns



Questions you should ask in determining a species' suitability for timber production include:

- does it have a straight trunk?
- is it acceptable to the industry (eg will it mill and dry well, have an attractive appearance and be stable in use)?
- will it grow quickly enough to give an acceptable return?
- is the wood in demand or will it increase in value at least in line with inflation?
- is there a demand for it by an established industry?
- is it suited to a wide range of sites across the region?

Selecting the right species

There is a growing trend among landholders to plant only those trees that occur naturally in their area. However, if you want to make money you also need to consider the market realities.

Unfortunately, while many local species are appealing for their local habitat value and character they are not suitable for commercial timber production.

Too often local native species have characteristics contrary to selection criteria:

- crooked trunks
- slow growth
- poor timber quality.

You can compromise!

The choice is yours. If you are mainly concerned with conservation and providing habitat for wildlife, with financial returns only a minor consideration, then plant species local to your area.

However, if you want to combine conservation with income a good solution is to plant an overstorey of marketable timber species with an understorey of local species appropriate to your area.

A further compromise is to use a blend of native and non-native trees around your property. This gives an attractive, diverse yet balanced landscape, providing habitat, amenity and also giving you an income.

Profit and conservation need not be mutually exclusive!

Pros and cons of pines

The current generation of farm foresters places great importance on aesthetics and habitat as well as income. They are committed to developing a strong native timber industry specialising in producing a high quality feature-timber resource.

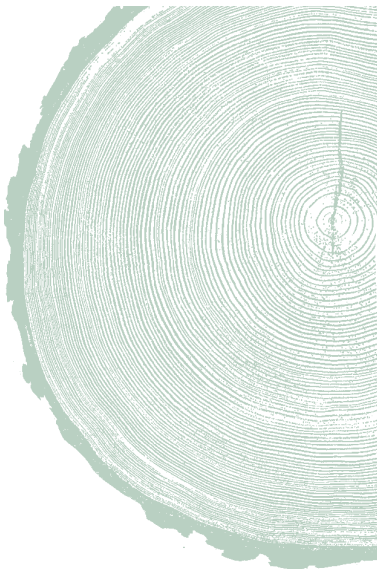
However, we must also consider the economic realities. The existing forest industry in the region is based on radiata pine and if you plan to grow hardwood you should recognise the considerable uncertainties involved:

- lack of processing and marketing structures
- slower growth rates
- presently lower log prices.

The reality is that, like it or not, pines currently provide the best potential for financial return.

Prospects for hardwood

At present local hardwood markets are no more than “boutique” craft timbers or firewood. People investing in the new native timber industry hope that prices will rise dramatically by the time the trees are ready for harvest. An encouraging fact is that in New Zealand eucalypt logs now sell for \$200 a cubic metre (m³) compared with only \$40-50/m³ in Australia.





Because the timber industry is currently geared to radiata pine, the challenge for native hardwood enthusiasts is to guarantee sufficient supplies to encourage investment in milling, processing and marketing infrastructure.

With a diminishing native forest resource, strong interest in growing native timber species and technical advances in processing young fast-grown hardwood the prospects for developing a local industry are very encouraging.

However, you should recognise that if you consider planting native species you will need to weigh up the greater market risks and lower probable returns against your personal pleasure and philosophical ideals for aesthetics and habitat development.

Profitability need not be the sole motivation for undertaking a farm forestry program, but neither should it be ignored!

Markets and product options

There are several markets to consider in the Adelaide Hills and Fleurieu Peninsula region:

- *firewood* — you can sell “on the stump” (merchants buy your standing timber, harvest and transport it) but more attractive returns are possible if you fell and crosscut your wood and deliver it to a woodyard
- *posts and poles* — present markets are buoyant but be aware that the demand is strongly cyclical
- *craftwood* — offers only limited opportunities for small volumes
- sawlogs — good quality pine sawlog currently provides the largest and most reliable market.

Even if there is a strong demand elsewhere it does not mean that you can necessarily benefit. For example, landowners in the Green Triangle and south-western WA are putting in large-scale, short-rotation plantings of Tasmanian blue gum for export wood chip markets. However in the Adelaide Hills and Fleurieu Peninsula there are no local markets either for wood chips or the small-diameter, low-quality logs used for making paper pulp. (The feasibility of a local woodchip industry is being investigated but short-term prospects are uncertain).

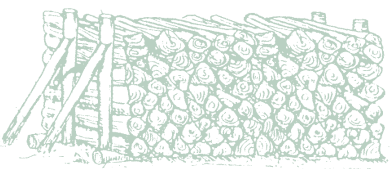
In the current climate, the best option for financial return will be either high-quality sawlog or firewood.

Obviously before you venture into farm forestry you need to assess the market risk of your intended product.

What the industry wants

It is important to supply timber which meets industry demands. The following characteristics are important in growing sawlogs:

- large diameter (40-65 cm)
- lengths from 4–6 metres
- straightness
- roundness — unless you can grow square trees!
- little taper (more like a cylinder than a cone)
- only small green tight knots or, preferably, knot-free clearwood
- a small defect core (pithy or juvenile wood and knots)



Help in selecting species

We mentioned earlier the challenge of developing sufficient resources to justify investment in the processing infrastructure.

To help develop a resource to support this investment, our research suggests a core group of “best bet” species which should comprise 70-80% of your plantings. This group of species has been selected according to the following criteria:

- a straight trunk
- suitable timber qualities
- acceptable growth rate
- valuable wood (or potential to increase in value)
- suitability for a wide range of sites across the region
- demand by an established industry



Mounding, preparation for planting.

It is critical to your project’s success that you assess the site to be planted and choose the right species for that site to reduce growing risks. For native species, and eucalypts in particular, you must pay greater attention to matching the species’ requirements to the planting site.

Key forestry species for the region

Radiata Pine	<i>Pinus radiata</i>
Spotted Gum	<i>Corymbia maculata</i>
Sydney Blue Gum	<i>Eucalyptus saligna</i>
Tasmanian Blue Gum	<i>Eucalyptus globulus</i>
Sugar Gum	<i>Eucalyptus cladocalyx</i>

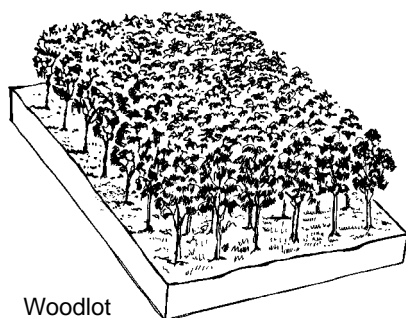
Minor species (some with potential but greater growing risks or restricted uses)

Flooded Gum	<i>Eucalyptus grandis</i>
Black wattle	<i>Acacia mearnsii</i>
Blackwood	<i>Acacia melanoxylon</i>
Silky Oak	<i>Grevillea robusta</i>
River Oak	<i>Casuarina cunninghamiana</i>
Cypress Pine	<i>Cupressus macrocarpa</i>
Mexican Cypress	<i>Cupressus lusitanica</i>

Planning your layout

All farm forestry plantings can be categorised as one, or a variation, of the following configurations:

- woodlots or “conventional” plantations
- timberbelts
- wide-spaced agroforests.



Woodlot

Woodlots

A woodlot (or plantation) is most commonly recognised as a commercial pine forest or firewood woodlot.

Woodlots will produce the most wood for the least effort. However, closely-spaced trees grow more slowly because of competition so woodlots take longer to produce logs of marketable size.

Woodlots provide some income during the growing period (“forest rotation”) from periodic selective thinning of the stand during the rotation. Thinning is essential to reduce competition for water, nutrients and light, allowing the remaining trees to grow more rapidly.

Most of the financial return from a woodlot comes toward the end of a rotation when larger logs are harvested.

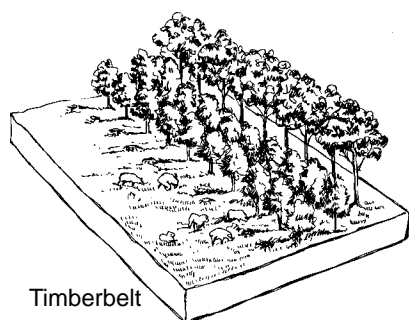
Recommendation: woodlots are best established in strategic locations, where they are compatible with other operations and activities on your property.

Timberbelts

Traditionally landowners have planted narrow belts along fencelines for shelter and stock protection. However, by selecting suitable species and undertaking proper tree management, especially pruning, your shelterbelts can produce high-quality sawlogs.

Timberbelts remove little land from farm production which means they are particularly well suited to highly productive enterprises such as dairying and horticulture.

Recommendation: you can establish timberbelts along artificial lines such as fencelines, or along natural landscape lines which enhance property amenity and aesthetics such as land class boundaries, soil type boundaries or watercourses and drainage lines.



Timberbelt

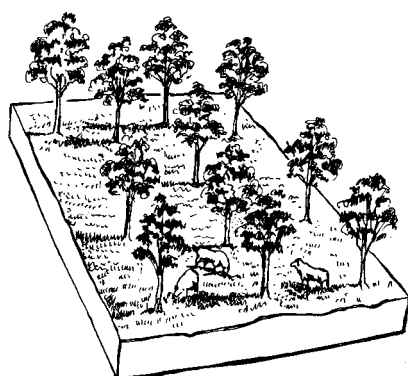
Wide-spaced agroforests

Wide-spaced agroforests (widely-spaced trees planted among pasture) combine timber growing and agriculture on the same piece of land.

Agroforests produce logs of harvestable size more quickly than a woodlot. Wide spacing promotes more rapid diameter growth than in a woodlot. Agroforests must be pruned to prevent heavy branch development which, if left, will produce unsaleable timber.

Another advantage is that once the trees are established grazing can be introduced, generating an annual cash flow from the paddock rather than having it locked up in trees.

Recommendation: agroforests are typically whole-of-paddock plantings and are best located on productive land where good growth rates will allow you to cut hay during the stock exclusion phase and then allow the introduction of grazing as soon as possible. They are also ideal for steep land where thinning operations are difficult and costly.



Wide-spaced agroforest

I'm still keen! What now?

If you believe some form of farm forestry development is for you, it is essential that you now give the following factors careful consideration. You should also read the follow-up Farm Forestry Notes, join the local farm forestry network and get along to field days and other network activities.

Steps to a successful farm forestry venture

Your ideal vision

Work out:

- why you want to plant
- what you want your plantings to achieve.

Consider:

- your property management plan
- your existing and proposed enterprises
- your property's layout
- your requirements to balance conservation, production, land protection and commercial viability
- your available resources

The layout

Choose the design or layout most suited to your vision and your planting location.

(FFN 4/98 *Woodlots and Wide-Spaced Agroforestry*, FFN 5/98 *Timberbelts*)

Site suitability

Determine the suitability of your site for growing trees, its fertility, moisture regime, etc, and then select species that are suitable for the site.

(FFN 8/98 *Farm forestry species for the Adelaide Hills and Fleurieu Peninsula*)

Management strategy

Work out the products you can grow and the likely markets. Then design a management plan covering:

- pruning
- thinning
- fertilising
- grazing
- harvesting requirements

Forecast your likely yields and returns.

(FFN 4/98 *Woodlots and Wide-Spaced Agroforests*, FFN 5/98 *Timberbelts*, FFN 6/98 *Pruning guidelines for farm forestry*, FFN 7/98 *Firewood growing*)

Sound establishment

Essential steps:

- good and timely site preparation
- excellent weed control.
- sound fencing to protect your investment from stock
- eradication of vermin.
- planting at the correct time.
- follow-up weed control
- monitoring for pest damage.

(FFN 3/98 *Farm Forestry: Establishment guidelines for Adelaide Hills and Fleurieu Peninsula*)

For further information:

FFN 2/98 *Farm Forestry — Frequent questions and common myths*

FFN 3/98 *Farm Forestry: Establishment guidelines for the Adelaide Hills and Fleurieu Peninsula*

FFN 4/98 *Woodlots and Wide-Spaced Agroforests*

FFN 5/98 *Timberbelts*

FFN 6/98 *Pruning guidelines for farm forestry*

FFN 7/98 *Firewood growing in the Adelaide Hills and Fleurieu Peninsula*

FFN 8/98 *Farm forestry species for the Adelaide Hills and Fleurieu Peninsula*

FFN 9/98 *Protecting your forest plantation from fire*

Enquire as to more recent publications

Farm Forestry: Harvesting and Marketing – Guidelines for pine plantations in the Adelaide Hills and Fleurieu Peninsula by David Hanna, Forestry SA 1998.

Farmtree\$ for the Mount Lofty Ranges: A Regional Agroforestry Handbook by Peter Bulman, Primary Industries and Resources SA 1995.

Environmental management guidelines for plantation forestry in SA, 1997

Mt Lofty Ranges Farm Forestry Industry Plan 1997

All available from PIRSA offices, State Tree Centre, State Flora outlets, Mount Lofty Ranges Catchment Resource Centre (Mount Barker) and community Landcare resource centres.

Regional Agroforestry Industry Development Strategy

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