



IN THIS HELP SHEET

This help sheet provides information that will help you plan your forest to get the most out of your project.



Planning

Growing trees is a multi-decade project. It is therefore important to plan your project to yield the benefits you are seeking and reduce risk.

The first step is to understand why you are considering planting trees. Reasons can be as simple as wanting long-term productivity in an alternative market all the way to reforestation for amenity and intergenerational considerations. All other decisions stem from your reasoning, including what to plant, where to plant it, and how much time and money you want to commit to the project.

Land Selection Factors

Silviculture Conditions

FIT uses a variable called Mean Annual Growth Increment (MAI). MAI represents how productive your plantation is and is reported in $m^3/ha/yr$. It is only determined through measurement of your plantation. It is the culmination of the factors below. MAI can change dramatically from one side of your property to the other. However, MAI can be predicted based on historic performance of specific species in specific conditions.



Temperature and Moisture Availability

Trees require moisture throughout spring, summer, and autumn to grow. The ability of soil to hold moisture is important, especially where summer rainfall is infrequent or low. Sites with perched water tables or fairly stable local water tables may favour tree growth in low rainfall areas.

Trees regulate water use by slowing growth. Sites with more access to water will grow faster if they are not waterlogged.

- Radiata Pine is generally suited to areas with an average annual rainfall $>650mm^1$
- Blue gum is generally suited to areas with an average annual rainfall of $>800mm^2$



¹ Greenwood Strategy Solutions, "Information Sheet 18: Radiata Pine," in *Private Forestry Guidance Materials* (Forest & Wood Products Australia, 2023), 1, <https://fwpa.com.au/report/radiata-pine/>.
² Greenwood Strategy Solutions, "Information Sheet 19: Tasmanian Blue Gum," in *Private Forestry Guidance Materials* (Forest & Wood Products Australia, 2023), 1, <https://fwpa.com.au/report/tasmanian-blue-gum/>.

Soil

Soils containing organic matter and clay hold water better than sands. Water requirements may be supplemented by irrigation, groundwater, or use of sites with wetter aspects.

- Radiata pine requires well-draining soils with profiles deeper than 40cm³
- Blue gum prefers moist loams and clay with profiles deeper than 2m⁴



Drainage

Tree roots need oxygen for growth. Avoid seasonally waterlogged sites as waterlogged sites are difficult to establish in and soils may be shallow making summer conditions harsh. Waterlogged soils are also challenging for established trees as soil integrity becomes compromised making windthrow more likely.

Water table fluctuations should also be considered as significant rising and falling during the year will cause trees to either be unable to access water or be drowned.



Rooting Conditions

Tree roots need to be able to explore soil deeply and widely. Roots occupy about the same space as the trunk and branches of a tree.

Avoid hard pans or heavily compacted soils unless you can deep rip or cultivate them. Avoid soils with lots of rock or very heavy clays.

Underground services should also be considered. Tree roots can damage underground services, but underground services can also complicate operations such as harvesting and site preparation.



Nutrient Availability

Nitrogen, phosphorus, and carbon need to be available in the top 10cm of the soil profile for good tree growth. Starter fertilisers are often applied at planting to supplement any deficiencies.

Sites with a history of normal agricultural fertiliser use should be planted at higher stocking rates to control form and promote concentration of site resources into stem growth (up) instead of branch growth (out). Care must be taken to ensure that thinning is on time to prevent inducing drought stress at higher stocking rates.



Weeds

Sites with heavy weed cover or high variety of weeds can be difficult and costly to both initially manage and maintain. Land free of persistent woody weeds (e.g., boxthorn) is easy to establish trees and is cost-effectively controlled.



Aspect

The aspect of a site can influence temperature, moisture availability and wind effects. Exposed aspects have greater impact on tree growth. Very steep slopes (15-30%) can be more costly to establish, access and harvest.



Access

A good access route capable of carrying 40t is ideal between the farm gate and proposed site. Off-road harvesting equipment may enable extraction of logs up to 1km to truck accessible landings, but this can be expensive. Aim to get truck within 400m of your trees.

Land located close to existing industry processing plants, export ports, or other large plantations is best to reduce transport costs.



³ Greenwood Strategy Solutions, "Information Sheet 18: Radiata Pine," 1.

⁴ "Tasmanian blue gum," Species Guides, Agriculture Victoria, last updated 12 February 2026, <https://agriculture.vic.gov.au/crops-and-horticulture/plantations-and-farm-forestry/farm-forestry-toolkit/species-guides/tasmanian-blue-gum>.

Natural Hazards

Flooding, fire, and erosion are the most common natural hazards. Avoid sites prone to flooding, even brief events (as windthrow susceptibility increases when trees are tall). Firebreaks should surround all sites to stop or slow the progress of a neighbouring fire-front and to facilitate firefighting. Planting trees on areas susceptible to erosion can alleviate the problem but avoid cultivating straight up and down on steep hills.



Fencing

Fencing is useful to manage livestock and vertebrate pests during establishment. Livestock and vertebrate pests can pose a significant risk from trampling and browsing.

Areas with existing fencing may reduce establishment costs. Sections of the fence may need to be able to be removed during harvesting activities, so it is important to consider this if building new fences.



Integration

Different layouts have been developed by landholders trying to find the optimum way to integrate forestry and other farming or landholding enterprises together. Different plantation archetypes offer different co-benefits.

Plantations that are narrow produce more 'edge' trees which tend to produce lower value timber because of larger side-branches and greater exposure to wind. Pruning can help to reduce this problem, but generally the lower the perimeter-to-area ratio, the better.



Archetypical Planting Configurations

Freestanding

A freestanding plantation occupies a whole area. It is disintegrated from other land uses. This makes roading, land treatments, weed and pest control, and silviculture/harvesting operations simpler.

Woodlot

A woodlot is an area dedicated for forestry that is, like a free-standing plantation, disintegrated from other land uses, but it occupies a parcel of a larger area. The separation of land uses is not fenced (e.g., located in a paddock corner, unused area, between irrigation pivots, etc.).

Shelterbelt

Shelterbelts are linear plantings spaced throughout a paddock to provide protection for livestock,

pasture, or crops. They provide protection from wind, heat, and weather exposure which also slows evaporation.

Erosion-control

Erosion-control plantings are positioned near areas of poor stability such as near water features, on slopes, or in vulnerable soils. Once established, they provide structural support to the soil through the root system.

Boundary/buffer planting

Boundary or buffer plantings are placed as privacy/acoustic/amenity screens on boundaries such as near roads, neighbouring properties, or other infrastructure.



Size

Time and labour required to establish and maintain a plantation is proportionate to its size. A single person could manage around 2 hectares a year.

Plantations of at least 20 hectares begin to benefit from economies of scale as harvesting operations become more efficient.⁵ Plantations of this size can be established with others in alternative commercial structure explored in Help Sheet 1.2.



⁵ Department of Primary Industries and Regions, "Overview of farm based forestry in South Australia," in Department of Primary Industries and Regions, *Trees on Farms Forestry Fact Sheet 20* (Government of South Australia, rev. 2023), https://pir.sa.gov.au/_data/assets/pdf_file/0004/433075/Overview_of_farm_based_forestry_in_SA.pdf.

DISCLAIMER: Reports prepared for Regional Forestry Hubs, and any recommendations contained in the reports, are provided as received by the Hubs and are not endorsed positions of the hub. They do not constitute Australian Government policy. The advice provided is general advice only. It has been prepared without taking into account your objectives, financial situation or needs. Gippsland Forestry Hub, and the Government of Australia, and their respective officers, employees and agents (Authors) do not make any representation or warranty as to the accuracy, reliability, completeness or currency of the information, representations or statements in this guidance note (including but not limited to information which has been provided by third parties); and accept no responsibility for the accuracy or completeness of any material contained in the guidance note. Additionally, the Authors disclaim all and any guarantees, undertakings and warranties, expressed or implied, and are not liable to any person in respect of anything, and of the consequences of anything, done or omitted to be done by any such person in reliance, whether wholly or partly, on any information contained in this publication. The user must accept sole responsibility associated with the use of the material, irrespective of the purpose for which such use or results are applied and indemnifies the Authors in this regard. Material included in this information tool is made available on the understanding that it is not providing professional advice. If you intend to rely on any information provided, you should obtain your own appropriate professional advice.

ACKNOWLEDGEMENT OF FUNDING: This report was commissioned by the Gippsland Forestry Hub and the Green Triangle Forest Industries Hub with funding from the Australian Government, Department of Agriculture, Fisheries and Forestry.