



IN THIS HELP SHEET

This help sheet presents the basics of forestry science.

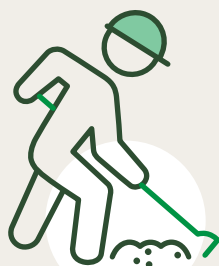
An Overview

Plantation forestry is a well-studied practice. Standard operations (regimes) for plantation forestry have been established to minimise risk and maximise benefits. The optimal regime is dependent on the species, site conditions, and objectives of the plantation.



1

Preparation



This phase includes site preparation activities like clearing and grubbing, development of internal roads, land forming if required, and weeding. This phase is consistent between species and is specific to your site conditions and preferences.

2

Planting



This phase includes planting stems at a particular density (# stems per hectare). In the early phases of a forestry project, a high planting density (known as 'stocking rate' in the industry) is used to improve growth dynamics and reduce project risk. This phase is consistent between species, but specific stocking rates might be advised for your specific conditions and project priorities. Fertilisation and pest control also occur in this phase.

3

Mid-Rotation Management

During this phase your stems are growing into mature trees. This comes with the need for weed and pest control, plus firebreak management and pruning.

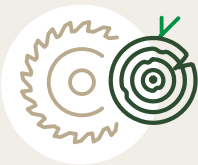
For pine forests you will typically thin the plantation 2-3 times. This means contracting a small harvest operation to remove a proportion of your forest which provides more room for the remaining trees to grow and grow stronger. Trees grow less up to fight for light and more out to build strength. The material harvested can be sold as small sawlogs or as pulpwood. Later thinning's may be sold of structural sawlogs if of a high enough quality.

For blue gum forests, it is atypical to thin. Blue gum is mainly sold as pulpwood, so trees are left to compete up for light, not grow out for sawlog qualities. Some innovative processing is becoming well-established, however, such as radial sawing and engineered lamination. This adds value to pulp logs where they can be sold as structural timber.



4

Harvest



This phase includes harvesting your plantation. You may also need to consider minor roading works to ensure that the harvesting operation can access your site.

The harvest age depends on the tree species and your plantation objectives. Your approach to harvest (clearfell or selective harvesting) also depends on your plantation objectives.

For pine forests, you will typically clearfell harvest at around 27-40 years old. Depending on the size of your plantation this is usually done by an automatic machine which de-limbs as well.

For blue gum, you will typically harvest at 12-20 years old. You may choose to selectively harvest or clearfell harvest by machine or with a chainsaw depending on your site conditions (slope, size, etc.) and project objectives.

5

Post Harvest

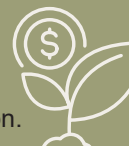


After harvest, you may choose to remove the stumps and redress the landscape with chopping and rolling. There will be some debris left on site which you may choose to leave in windrows, or heap and chip/burn. You may choose to replant a new rotation of trees where windrows will help with establishment.

Australian Carbon Credit Units (ACCUs)

Your forestry project may be eligible to earn ACCUs. One credit is earned for every tonne of CO₂ equivalents (the climate change effects of other greenhouse gases are reported with conversion to the effect of CO₂) that your project removes from the atmosphere. Credits can then be sold in the open market.

See Gippsland Forestry Hub's *Carbon Farming Guide* provides more information.¹ It is also applicable for the Green Triangle region.



Products

The products that your project produces vary in financial, social, and carbon value. The financial value of your product will be higher relative to the quality and current market demand. Quality timber takes longer to grow, is particularly straight, has fewer knots and will yield higher prices. The social value of your product is highest when it contributes to your local community, is purchased and used locally, and raises the profile of your region. The carbon value of your product is highest when the carbon in your product is processed locally into the longest-lasting use case, typically structural timber. Lower grade timber can now be processed into higher-grade product through engineered timber laminates which is stronger and more durable, meaning the sequestered carbon will remain sequestered for longer. Higher quality timber and engineered timber products can even displace higher-emissions materials such as steel.

There is some correlation between the various domains for particular products. Moving from highest value to lowest across the domains:

- Premium joinery, veneer, appearance-grade timber, and structural sawlogs fetch a high market price, contributes to the local community through local processing and use in local construction, and provides long-lived carbon storage.
- Other sawlogs – pallets, packaging, poles, etc. fetch a good market price, contributes to the local community (when processed and used locally), and provides long-lived carbon storage.
- Residue panel products – MDF, particleboard, etc. fetch a reasonable market price for residues but is not typically purchased from the forester. They contribute to the local community when processed locally, and carbon storage is medium to long.
- Pulp for paper and cardboard is lower-priced and doesn't often contribute to the local community unless there is a pulp mill (such as Gippsland). Carbon storage is dependent on recycling rates but is very low compared to the above products.
- Woodchip for landscape products is lower-priced again but can contribute to the local community if processed and used locally. Carbon storage is high as the chip rots down into the soil.
- Firewood and chip for biomass energy is lower-priced (but after processing, firewood can sell well) but can contribute to the community if processed locally. Carbon storage is low as almost all of the atmospheric carbon captured during the tree's growth is returned to atmosphere as CO₂.

¹ Gippsland Forestry Hub, *Carbon Farming Guide 2022* (Gippsland Forestry Hub 2022), <https://gippslandforestryhub.com.au/wp-content/uploads/2023/05/GFH-Hub-Gippsland-Carbon-Farming-Guide-web2.pdf>.

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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.