

# How Do We Use Wood?



## Plantation forestry

The primary purpose of plantation forestry is to grow trees to produce a range of wood products. Australian plantations are comprised of both softwoods (pines) and hardwoods (eucalypts). As well as providing wood products, plantations (or tree farms) also contribute to a range of environmental values and services including water quality improvement, dryland salinity mitigation, biofuels, carbon sequestration and habitat for native plants and animals.

**Plantation:** A forest stand established by the planting of seedlings or cuttings of trees selected for their wood producing properties and managed intensively for the purpose of future timber harvesting.



**Since the early 1900's plantations** have been developed and have become a significant feature in Tasmania's landscape, delivering a range of products and benefits including:

- Sawn timber production, wood fibre and other wood based products
- Shelterbelts for animals and crops
- The provision of multiple environmental benefits through addressing land degradation, salinity and soil erosion
- Generation of biomass and storage of carbon

In 2011 the total area of plantations in Tasmania was approximately 311,000 hectares made up of 233,000 hectares of hardwood (eucalypts) and 78,000 hectares of softwood (pines).

	<i>area ('000 hectares)</i>	<i>% Tasmania</i>	<i>% Australia</i>
<b>Land area</b>	<b>6 840</b>	<b>100</b>	<b>1</b>
<b>Native forest</b>	<b>3 116</b>	<b>46</b>	<b>2</b>
<b>Plantation</b>	<b>311</b>	<b>4</b>	<b>15</b>
<b>Forest cover</b>	<b>3 427</b>	<b>50</b>	<b>2</b>

Source: Australia's forest at a glance 2012, Department of Agriculture, Fisheries and Forestry

Radiata pine is a Californian species of pine, introduced into Tasmania for use as a plantation species in the early 1900's. Following trials of more that 100 species from Australia and around the world, Radiata pine has become the species of choice for softwood plantations in Australia. The species is frost and dry-soil resistant, though it suffers from snow and drought. Radiata pine is easy to saw and work, is lightweight and takes stains and finishes well. It is relatively stable in drying, will not warp or crack like eucalypts, and can be dried very quickly. Softwood plantations provide sawn timber, veneer, posts, poles and long fibre pulp for newsprint, tissue papers and cardboards - its long fibres adding strength and flexibility to these products.





Tasmania's floral emblem, the blue gum (*Eucalyptus globulus*), and the shining gum (*Eucalyptus nitens*) are grown in plantations across Tasmania to produce high quality sawlogs for solid timber products and high quality pulp logs for producing a range of paper products. Managing plantations to produce high quality sawlogs involves a range of operations at specific stages in the life of the plantation including, pruning the branches from growing trees and thinning the stand of trees within the plantation. Plantations are initially established with high-density planting of some 1100 trees per hectare. After about three years, the best 300-400 trees per hectare are selected for pruning and have their lower branches removed. These trees will be pruned twice more over the following two years, to a height of six metres. The pruning operation, along with the thinning process, promotes the growth of knot-free logs in the lower part of the tree trunk, in turn producing higher value logs for sawing and veneering. Trees removed in the thinning process are generally used for pulpwood or as small sawlogs. At age 20-25 years, the pruned trees are harvested. Some logs are sold to sawmills; others to veneer mills and the remainder are sold as pulpwood. Following the harvest, a new crop is planted and the plantation cycle is repeated.

Plantations will play an increasingly vital role in the future production of wood products from Tasmanian forests. Applying the principles of sustainable forest management to both softwood and hardwood plantations will ensure the long-term benefits to the community, the environment and the wood products industry. Timber sourced from plantations will supply local industry and support interstate and overseas markets producing sawn timber, veneer, posts and poles, a range of reconstituted and engineered timber products and pulpwood for paper.



**Contact:**

79 Mellville Street  
Hobart, Tasmania  
Australia 7000

**Phone:** 03 6235 8240

**Email:** [info@forest-education.com](mailto:info@forest-education.com)

**web:** [www.forest-education.com](http://www.forest-education.com)

## Ideas for student questions

What types of products can be produced from plantation grown trees? (softwoods and hardwoods)

What are engineered timber products and how are plantations contributing to the timber products available in the future?

What environmental factors might affect the growth rate of the trees?

How might the trees be managed during their growth cycle to provide for different timber products?

Do you think plantation grown wood can supply the full range of timber products sourced from managed native forests?

How can growing trees in plantations contribute to the challenges of carbon storage, providing timber products and generating an income for land owners?

Apart from providing fibre for a range of timber products in what other ways can plantations contribute to the landscape and how may this change in the future?

## Ideas for classroom activities

Investigate the species used in plantation forestry (e.g. in Tasmania *Pinus radiata*, *Eucalyptus nitens* and *Eucalyptus globulus*) and the products developed from each species. Are these species suited to different environmental conditions and managed in different ways?

Develop a map for a farm being managed to provide a range of agricultural crops, animal products as well as timber plantations. Explain how the plantations can be managed over time to provide an ongoing wood supply as well as shelter for animals, food crops and other environmental benefits such as erosion protection.

## Links to Australian Curriculum - Science

*Forest Education opportunities through science - [years 7/8](#)*

## Links to further information

*How do we use wood? - [further information](#)*

*Links to further [supporting websites](#)*

**Contact:**

79 Mellville Street  
Hobart, Tasmania  
Australia 7000

**Phone:** 03 6235 8240  
**Email:** [info@forest-education.com](mailto:info@forest-education.com)  
**web:** [www.forest-education.com](http://www.forest-education.com)