

Forest Education Foundation

# National Forest Learning Centre

The stories behind our trees

## What Do Foresters Do?



### Working as a Forester

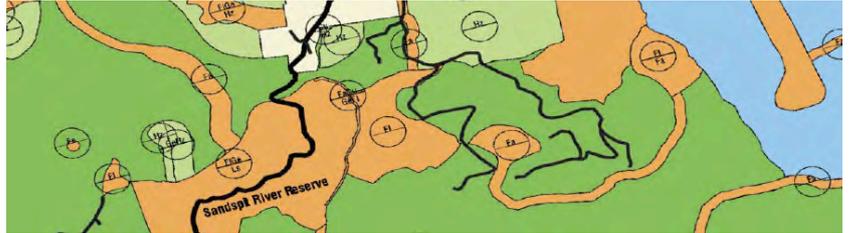
Working as a forester, whether in Australia or internationally provides a career pathway with many opportunities to specialise within and experience a range of work areas and some amazing environments. Our forests have many different values: they support biodiversity, provide clean water, store carbon, and are a popular setting for tourism and recreation. Along with these values, some of our native forests are also managed to provide us with timber resources, finding the balance of these values is a challenging aspect of the work of a forester. A unique characteristic of forestry is its focus on the long-term sustainable management of forest ecosystems.

For the practicing forester this means dealing with day-to-day variables, such as weather, but also considering the long-term view and the need for ongoing planning – often many years and generations into the future. Planning is therefore a large part of forest management: short term planning for each season of a year and long term planning to ensure that all other activities contribute to the long term health of the forest and therefore its ability to provide the services and products required by communities today and into the future.



## Planning and Protection

Some foresters are concerned with planning of field operations to minimise soil erosion, to conserve water catchment values, to provide suitable habitats for native fauna, to ensure that rare and endangered plants or animals are protected and to maintain scenic landscape values. Protection of forests from fire is major function of foresters in Australia. Foresters plan and implement strategies for fire prevention, detection and suppression. They use fire as a tool to maintain forest health, to regenerate new forests and to protect forest resources and regional communities. Not only do foresters provide equipment for fire fighting and radio communication, they also provide essential training for fire fighting.



## Silviculture

Other foresters are involved in silviculture, which means the establishment or regeneration of forests and their subsequent thinning, pruning or weed control. Silviculture also includes production of seed for new forests through the establishment and management of tree nurseries. A vast amount of information on tree growth and growth rates under different conditions is needed for making silvicultural decisions. Forest research is therefore a significant area in which a forester may be working.



## Business

The business of forest management requires foresters to undertake inventories of growing stock in forests, to forecast future growth of a variety of forest products, to estimate community demand for forest products, and to identify optimum strategies for forest management. This requires the use of advanced modelling techniques and computer based decision-making tools. Foresters make use of computer based land information systems and geographic information systems for analysing the outcomes of various options for management, once again taking the long-term view of understanding and managing the forest at both the localised and landscape level.

# Harvesting

Some foresters are engaged in organising and controlling the harvest of timber from forests for the production of sawn timber for house construction, furniture manufacture, engineered timber products, poles, posts, fuel wood and for paper products. Foresters may be involved in the processing, utilisation and marketing of forest products. For timber harvesting, areas to be felled or thinned are identified and carefully planned to meet the requirements for environmental protection, soil and water conservation, fire protection, regeneration of the forest, market requirements and the economics of harvesting equipment.

Harvesting involves a considerable amount of forest engineering skill to locate and construct roads, bridges and other facilities.



# Landscape approach

In Australia, a whole of landscape approach to land management is an important focus, which means that foresters interact with a wide variety of other land managers including; farmers, parks and wildlife specialists, water supply specialists, engineers and soil conservation officers to achieve better coordinated and more sustainable systems of land management. Forest management problems often require a multi-disciplinary approach, so a forester may work with other professionals such as, zoologists, hydrologists, economists, entomologists, or accountants.

Australia has 147.4 million hectares of native forest and 2.0 million hectares of forestry plantations. These forests and plantations require protection from and the management of the effect of wildfires and other damaging agents such as insects and diseases. They also require planning and management to provide a wide range of goods and services for the community, such as pure water, recreation, timber products, nature conservation, honey, wildflowers and so on. Planning and management increasingly involve community participation at various stages of these processes, so foresters need to be able to communicate effectively with a wide range of people and groups in the community.



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Looking and planning ahead – a very long way ahead – is the key to the sustainable management of our forest resources.



This season's tree seedlings growing in production forests won't be ready to harvest for many years. But our society still requires the supply of forest products that we use every day.

It's one of the challenges of a forester's job – planning well into the future to ensure that sustainable yields of timber will always be available.

They do it by mapping, measuring and monitoring.

## Sustainable Forestry Means Confidence for Consumers

Australian Forestry Standard Limited is a not-for-profit company that manages the Australian Forest Certification Scheme.

Among its industry standards, it administers chain-of-custody certification for wood products. As the standard states, 'chain-of-custody tracks a wood or forest product from its origin in a certified forest through to its end use as a wood or forest product by the consumer. It covers all intermediate steps including harvesting, transportation, primary and secondary processing, manufacturing, re-manufacturing, distribution and sales.'

## Tick of Approval

Timber processors and manufacturers who meet the requirements of the chain-of-custody standard are permitted to label their products so that consumers know that they are sourced from forests that are responsibly and sustainably managed.

Native forests being regenerated today won't come into production for about 60 years. Eucalypt plantations mature more quickly – tree farms established around the year 2000 will begin to mature after only 15 years or so.

# Sustainable Forest Management

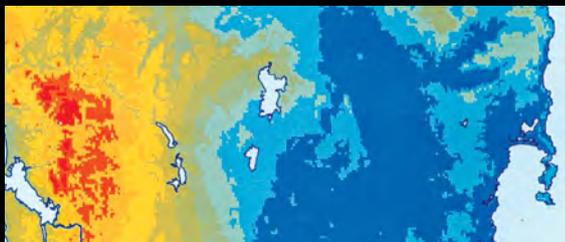
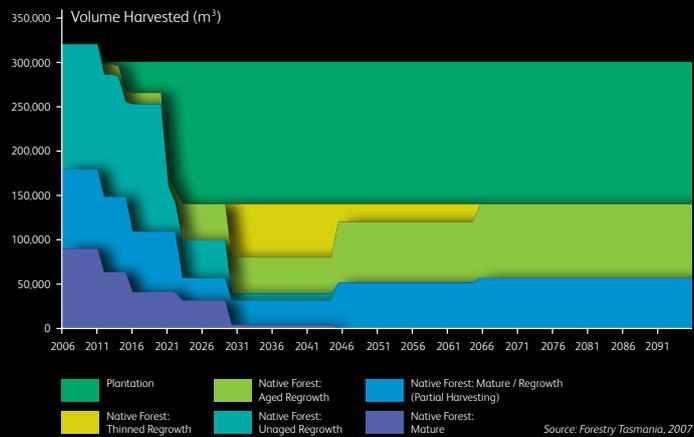


## Mapping

Map-makers use aerial photography and satellite imagery to create accurate maps of vegetation types, identifying the exact location and extent of forests.

## Measuring

In the field, foresters gather information on the size, distribution and growth rates of tree species. Back in the office, mathematical calculations combine information from forest maps, field observations and planned schedules of harvesting and regeneration to estimate the yield available from forests for decades to come.



## Modelling

Predictions about the supply of timber from production forests are constantly monitored. These predictions are made up to 100 years into the future. This graph shows that the predicted yield of sawlogs and veneer logs stays at a sustainable level of around 300,000 m<sup>3</sup>, over a period of 90 years between 2006 and 2095. It also predicts the changing source of that timber, from a reliance on mature and regrowth native

forest, to a stage when all timber comes from regenerated native forests/partially harvested native forests and plantations.

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From a tree nursery to a paper mill – from a scientific laboratory to a timber engineering plant – from the operator’s cab of heavy machinery in a logging coupe to an office in the marketing department of an international wholesaler – the forest industry offers a wide range of career opportunities.



Tasmania’s forest industry provides employment to more than 10,000 people – of every 100 people in the State’s workforce, five of them are working in the forest industry. The work they do contributes around \$1.3 billion to the State’s economy each year. The forest industry is Tasmania’s largest value-adding industry

sector – and the second largest (after mining and mineral processing) in turnover.

Perhaps it’s more accurate to use the term ‘forest industries’, because the wider sector offers so many different employment options and career paths.

It might begin with the propagation of seedlings in a tree nursery, or with

the collection of seed in a native forest – and end with the operation of high-tech machinery in a manufacturing plant producing engineered timber products.

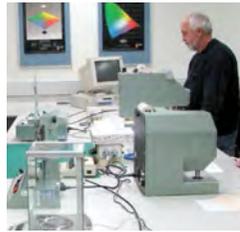
In this huge and important industry, the career opportunities are just as extensive.

Australia’s smallest state is a major player in the forest industries sector.

Tasmania provides:

- 70% of Decorative Veneers
- 65% of National Hardwood Production
- 55% of Australian Newsprint Production
- 50% of Australian-Made Printing & Writing Paper
- 45% of Woodchip Exports

Source: <http://www.development.tas.gov.au/invest/opportunities/forestry>



## Scientist

These are the researchers such as botanists, entomologists, hydrologists and geomorphologists who aim to understand forest processes. Their knowledge is vital for foresters to apply appropriate forest management.

## Forester

Foresters manage the forest through the practical application of science. They aim to provide essential wood products, wildlife habitats, water and recreational facilities, whilst essentially preserving the forests as a community resource.

## Cultivator

Cultivators are involved in the collection of seeds from native trees, and the re-seeding of newly cleared areas from the air. They also cultivate seedlings in extensive nurseries for movement to plantations across the state.

## Equipment Operator

Forestry requires the use of a range of specialist equipment from chainsaws to complex harvesting machinery. Operators use their skills in the field, not just felling trees, but clearing tracks and moving logs to the requirements of the Forest Practices Plan.

## Timber Products Manufacturer

A huge range of timber products are required from the sawmills that receive the logs. The manufacturer determines the output from these mills, monitoring the quality, size and quantity of the timber in relation to client's needs.

## Pulp & Paper Production Operator

Here operators are involved in producing a range of paper products, regulating and monitoring the chemical and mechanical inputs into the system, to create paper of a required industry standard from different pulps.

## Tree Measurer

A tree measurer's role is to carry out operational assessments of forest areas, gathering and recording data that contributes to identifying the volume of wood that a forest area could potentially provide in a sustainable manner.

## Surveyor

Forest surveyors are involved in locating new roads, for logging and transport and defining boundaries within forest areas, as well as the required engineering surveys for harvesting practices.

## Geodata Officer

Geodata officers are responsible for the final production of maps used within the forest industry. These complex and multi-layered maps are developed to aid with forest management decisions and processes.

## Harvesting Supervisor

Harvesting supervisors work within Forest Practices Plans, managing the often complicated harvesting operations including moving the logs away from the area and overseeing the fire management activities.

## Tourism & Marketing

Forests are used by the community for a wide range of activities. These are promoted to encourage people to use the forest environment, from dog walking to hang-gliding.