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Published by Forestry Corporation of NSW.
FCNSW0297

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www.forestrycorporation.com.au
INTRODUCTION

Forestry Corporation of NSW (Forestry Corporation) is the largest manager of commercial native and plantation forests in New South Wales (NSW). Managing more than two million hectares of forests and contributing 14 per cent of all timber produced in Australia each year, the corporation is a major force in the state’s forest and wood products industries which employ 22,000 people and add an estimated $2.4 billion to the economy annually.

In NSW there are 80 million hectares of land, 27 million of which is forested. Of this, Forestry Corporation manages around two million hectares and in any given year, approximately 30,000 hectares is harvested for timber.

Forestry Corporation is Australia’s largest grower of plantation pine, producing enough timber to construct a quarter of the houses built in Australia each year.

Forestry Corporation is required to have a Forest Management Plan (FMP). This plan must meet several legal and other requirements. These have been detailed in Table 1.

THE FOREST MANAGEMENT PLAN

The FMP is a component of Forestry Corporation’s comprehensive Forest Management System (FMS) as shown in Figure 1. The FMS contains the policies, procedures, process maps, operational manuals and other documents Forestry Corporation uses in our day-to-day forest management.

Figure 1: The Forest Management System
This FMP is a summary of Forestry Corporation’s approach to forest management. The plan summarises our systematic approach to sustainable forest management, outlines our legal and regulatory framework and demonstrates our commitment to maintaining certification to the Australian Standard for Sustainable Forest Management (AS 4708) and ISO 14001 Environmental Management Systems.

The objectives and targets that underpin this FMP are contained within the SPD strategy, a three year plan that is reviewed annually.

Together, the FMS and this plan meet the forest management and reporting requirements of the Australian Standard for Sustainable Forest Management (AS 4708) as well as our obligations to have FMPs under the Forest Agreements (FAs) and the Forestry Act 2012.

Table 1: Forest Management Plan requirements

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Requirement</th>
<th>How it is met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry Act 2012</td>
<td>A FMP including relevant ecologically sustainable forest management (ESFM)</td>
<td>This plan will be published on the Forestry Corporation’s website. A range of other documents that form part of our FMS are also either published on our website or provided to the public on request.</td>
</tr>
<tr>
<td>Australian Standard for sustainable forest</td>
<td>FMP must be in place and summary document made publicly available.</td>
<td>This plan will be published on the Forestry Corporation website as the summary document. The FMS outlines the details for FMP and practice.</td>
</tr>
<tr>
<td>management</td>
<td>Regional Ecologically Sustainable Forest Management (ESFM) Plans are to be</td>
<td>This FMP meets the requirement to have an ESFM Plan outlined in the FAs. Forestry Corporation will consult with stakeholders before finalising this plan and will publish the final document on our website.</td>
</tr>
<tr>
<td></td>
<td>developed to implement the NSW forest agreements. Public consultation must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>be undertaken in the development of these plans and they are to be made publicly available.</td>
<td></td>
</tr>
</tbody>
</table>

This FMP is organised into four key focus areas – our business, our environment, our community and our staff (see Figure 2). Each area outlines a set of goals and targets which align with the Australian Forestry Standard (AFS) criteria and articulate our commitment to maintaining both sustainable forests and a sustainable business.

Forestry Corporation has outlined a Sustainability Framework which guides the corporation’s vision, mission and values around sustainability. The Sustainability Framework is displayed in detail in Figure 2 – The Sustainability Framework Wheel. The four core values Forestry Corporation outlined in the Sustainability Framework: our business, our environment, our community and our staff are the four main chapters of the FMP. Each of these chapters will then be further broken up into discussion around the key criteria that must be managed to ensure Forestry Corporation’s sustainability values are upheld (the outer circle of the Sustainability Framework Wheel).
FOREST SUSTAINABILITY

‘Sustainability’ is about meeting the needs of the present without compromising the ability of future generations to meet their own needs. The sustainability of our business is founded on ESFM principles.

The ability of the forests we manage to provide a range of services and products underpins the long-term success of our business which is illustrated in Figure 3.

Successfully balancing society’s needs for products and services, such as wood and recreational opportunities, with the needs of forest ecosystems ensures we continue to sustainably produce one of the most renewable natural resources in the world.

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1 Our Common Future (also known as the Brundtland Report) from the United Nations World Commission on Environment and Development (WCED), published in 1987
Forestry Corporation shows its commitment to the management of sustainable forest management by contributing to:

- National State of the Forests Report
- Regional Forest Agreements (RFAs)
- FAs
- Integrated Forest Operations Approvals (IFOA) for harvesting in native forests
- ESFM Plans/FMP
- Australian Standard for Sustainable Forest Management (voluntary)
LAND TO WHICH THIS PLAN APPLIES

This FMP applies to the Defined Forest Area (DFA) of Softwood Plantations Division (SPD), which is detailed in maps available on Forestry Corporation’s website. See Appendix One for an overview map of SPD estate within NSW and more detailed maps for each of the management areas.

Figure 4: Softwood Plantations in NSW covered by this plan
OUR BUSINESS

The first core value to be discussed in the FMP from the sustainability framework is Our Business. Forestry Corporation is committed to running a successful, efficient, valuable, profitable, ethical and sustainable business that can make contributions to this generation and those to come. Forestry Corporation has a coordinated approach to governance, asset and estate management and profitability which shall be discussed in detail in the chapter.

The origins of Forestry Corporation date back to the early days of the Colony of NSW with various types of timber cutting licences issued. The first forest reserves were proclaimed in 1871 with the aim of preserving the timber resources of the Colony and preventing the destruction of the best species of brush and hardwood. The enactment of the first Forestry Act occurred in 1909, establishing a Forestry Department. In 1916, the Forestry Commission of NSW was established, and in 1992 the Forestry Commission was re-constituted as a public trading enterprise. In this time Forestry Corporation has contributed to major regional infrastructure such as railways, housing and road construction.

In 2012, Forestry Corporation was established as a State Owned Corporation (SOC) under the Forestry Act 2012. The Corporation has been charged with a number of equally important objectives under the Act:

- to be a successful business and, to this end, to operate at least as efficiently as any comparable business and to maximise the net worth of the State’s investment in the corporation
- to have regard to the interest of the community in which it operates
- where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development
- to contribute towards regional development and decentralisation
- to be an efficient and environmentally sustainable supplier of timber from Crown-timber land and land owned by it or otherwise under its control or management.

Today, Forestry Corporation is the largest manager of commercial native and plantation forests in NSW, and is accountable for financial performance to the Treasurer and the Minister for Finance, who act as shareholders for and on behalf of the NSW Government. Forestry Corporation is also appointed as a land manager on behalf of the NSW Government, a responsibility that is overseen by the Minister for Primary Industries.

FOREST MANAGEMENT SYSTEM

Forestry Corporation is committed to managing timber resources in an ecologically sustainable way. Forestry Corporation has a Forest Management Policy, which outlines our commitments to conserving and advancing a range of forest values such as biodiversity, forest productivity and carbon sequestration in keeping with the principles of sustainable forest management. The policy is delivered through the FMS and is available on our website.

The FMS is a framework of policies, processes and procedures that guide day-to-day operations by outlining how we will plan operations, implement procedures, audit and report operations and review performance to achieve sustainable forest management (refer to Figure 1).

The development, implementation and continuous improvement of the FMS is overseen by an executive committee and supported by an implementation committee to ensure it remains relevant to business operations. The FMS ensures we have:

- controls in place that ensure we minimise the impact of our activities on the environment
- a process to identify and resolve issues and continuously improve our operations
- regular audits of what we do and how we do it to ensure our activities and systems comply with regulations and are best practice
- a process to review the performance of our management systems and processes.

It also ensures that State forests are managed according to adaptive management principles. Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operations and ensuring that our systems and processes allow us to identify and respond to changing circumstances.

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1 These reserves were proclaimed under regulations issued on 14 December 1866 (NSW Government Gazette 14 December, 1866 p. 3076)
OPERATIONS
The FMS is tailored to the distinct requirements of each of Forestry Corporation’s two operational divisions.

Key activities that are undertaken by the operational divisions include:
- timber harvesting
- plantation establishment and tending
- weed and pest control
- prescribed use of fire
- road maintenance and construction.

These activities are undertaken with specific controls that aim to minimise the risks.

MONITORING AND AUDIT
The FMS encapsulates a system of monitoring, auditing and reviewing processes, which allows for continuous improvement and adaptive management. Recommendations from monitoring, audits and reviews are incorporated into corrective actions to improve the FMS over time. Further information is provided in the governance section of this plan.

Forestry Corporation carries out monitoring and auditing through:
- contractor rating systems that highlight areas of poor performance
- targeted environmental compliance monitoring in areas of known high risk, such as exclusion area boundaries and stream crossings
- external compliance audits
- internal audits and reviews
- maintaining an up-to-date risk register, as well as complaints and incident registers.

Our Monitoring Audit and Reporting Manual sets out our monitoring processes. Ongoing monitoring is particularly targeted at key areas including the volume of timber products harvested and the area harvested, which are closely compared against predicted yields every quarter so anomalies can be investigated. Active forest operations are visited regularly to identify and record any non-compliance with the operational conditions, which forms an important part of the continuous improvement cycle. Whenever a non-compliance is identified:
- the incident is investigated and the cause of the non-compliance is established
- corrective actions are instigated where appropriate
- improvements are made to prevent reoccurrence.

Internal audits are independent and objective reviews that:
- provide assurance that our financial and operational controls are operating in an efficient and ethical manner and effectively managing risks
- identify opportunities to improve performance.

Audit plans detail the regularity of reviews, as well as the intensity of monitoring any non-conformances and complaints. This is complemented by a rolling three year internal audit schedule for AFS criteria, involving reviews of different elements of the standard by a qualified environmental auditor.

Forestry Corporation is also subject to external regulator audits by a range of parties including the NSW Auditor General (financial), regulatory agencies such as Environment Protection Authority and the Department of Primary Industries’ (DPI) Plantation Assessment Unit and the AFS.

LEGAL AND OTHER REQUIREMENTS
Forestry Corporation maintains a register of legal requirements that is relevant to the conduct of its activities which is reviewed and updated annually.

Forestry Corporation has a systematic approach to identifying and complying with legal and other requirements. In addition to the Forestry Act 2012, the Plantation and Reafforestation Act 1999 and Regulation and the IFOAs are the main legislative and regulatory frameworks for forestry operations. These frameworks require high levels of transparency, documentation and accountability.

Changes to legislation and other relevant requirements are identified, analysed and then communicated to staff and contractors.
RISK MANAGEMENT
Forestry Corporation uses a risk management framework based on Australian Standards. This framework ensures we have robust processes for identifying and documenting significant risks, putting the appropriate mitigation measures in place and reviewing these annually.

The Audit and Risk Committee of the Board is responsible for ensuring Forestry Corporation appropriately discharges our responsibilities by overseeing and reviewing:

- financial reporting
- risk management
- debt structure and debt instruments
- accounting policies
- major capital expenditure proposals
- business ethics policies and practices
- internal controls
- compliance with taxation and other applicable laws and regulations
- integrity and performance of the internal audit function.

Forestry Corporation has risk management guidelines, which outline the processes used to identify, assess and prioritise risks, as well as risk mitigation and monitoring processes. A central risk management software system is in place to report, record and manage incidents and hazards.

Forestry Corporation manages a range of risks to mitigate any potential social, environmental, technological, safety, financial, reputation and security consequences. Forestry Corporation regularly reviews its operations to ensure that activities that may have significant risks are identified and appropriate mitigation strategies are implemented.

PLANNING
Forestry Corporation completes long-term, medium-term and short-term planning to ensure that we maintain timber supply for future generations while meeting current contractual commitments. We also complete detailed site-specific and activity-specific planning to ensure each operation is carried out in an environmentally sustainable manner and take into account the needs of forest users and the local community. Further details on our planning processes are outlined below.

LONG-TERM PLANNING
Forestry Corporation uses scientific models to project timber supply over the long term. These models look at estimated yields over 70 to 100 year periods and are based on long-term research studies using inventory data to verify projected results.

MEDIUM-TERM PLANNING
Medium-term planning focuses on determining which forests and compartments will be harvested to meet our timber commitments over the next two to five years. This planning details the preparation required, such as road upgrades, and facilitates engagement with stakeholders. Our medium-term planning describes the forest estate and values to be managed, providing the rationale for harvesting rates and silvicultural regimes, and refers to relevant operating conditions and controls for specified activities.

SHORT-TERM PLANNING
Each of the two operating divisions prepares an annual schedule of operations to guide day-to-day business activities.

SITE- AND ACTIVITY-SPECIFIC PLANNING
Detailed, site-based operational plans are prepared for each forestry activity and act as a blueprint for staff and contractors.

EMERGENCY RESPONSE
Forestry Corporation has obligations as a land manager and as a manager of staff and contractors to ensure that emergency response procedures are in place. Accordingly, procedures are in place for:

- fire preparedness
- pollution incident response
- biosecurity.
MANAGEMENT REVIEW

Management review is the process of regularly reviewing whether the FMS is performing as planned. Every level of management in the operational divisions conducts periodic reviews of incidents, hazards and complaints to ensuring corrective action plans are implemented as planned and deliver the intended result.

This process ensures the integrity, suitability, adequacy and effectiveness of the FMS is understood by all levels of management.

VALUATION

As a registered Australian company, Forestry Corporation has an obligation to report, on an annual basis, the value of its assets according to the relevant accounting standards. Forestry Corporation undertakes a discounted cash flow valuation of its current crop, which is informed by our strategic planning process and reviewed by the NSW Auditor General’s office.

INDEPENDENT FOREST MANAGEMENT CERTIFICATION

Softwood Plantations Division is independently certified to the Australian Standard for Sustainable Forest Management (AS4708:2013) and AS/NZS ISO 14001:2004 (Environmental Management System). This dual certification provides objective assurance to our customers and stakeholders that we are sustainable and effective forest managers.

Certification to the Australian Standard for Sustainable Forest Management also allows end users to identify certified timber at the time of purchase, providing customers with a guarantee that the timber they are buying has been grown and harvested legally from a sustainable forest.

GOVERNANCE

Governance refers to the process of making and implementing decisions within Forestry Corporation, including how the decision making process is reviewed. Good governance has a positive effect on consultation policies, work practices, procedures, service protocols, conduct, role clarification and working relationships with the community in which Forestry Corporation operates.

This section provides a discussion of how the FMP fits within the broader global standards for Forestry operations, where in NSW the corporation is active, what operations Forestry Corporation conducts, the systems Forestry Corporation has in place to ensure operations are carried out with minimal risk, within the law and within the voluntary work certifications the corporation holds. Equally important is the discussion in this chapter which relates to the planning systems Forestry Corporation uses to ensure the long term viability of the corporation and the provision of services to the state of NSW.

INTERNATIONAL AND NATIONAL CONTEXT

Australian attended and was a signatory to the United Nations Conference on Environment and Development, Rio de Janeiro in 1992. It was at this conference that governments recognised the need to redirect international and national plans and policies to ensure that all economic decisions fully took into account any environmental impact. The Earth Summit resulted in Forest Principles which resulted in the Montreal Process, also known as the Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests. It is a voluntary agreement on sustainable forest management. Australia was a member country of the Montreal Process.

The criteria and indicators agreed to at the Montreal Process provide a common framework to describe, monitor, assess and report on national forest trends and progress towards sustainable forest management. They aim to provide a common understanding what is meant by sustainable forest management. There are seven criteria that characterise the essential components of sustainable forest management.

The Australian, state and territory governments are all signatories to the 1992 National Forest Policy Statement (NFPS). The management of Australia’s forests is guided by the NFPS, providing a framework within which governments work cooperatively to achieve sustainable management of Australia’s forests. The NFPS identifies protection of the full range of forest ecosystems and other environmental values as being fundamental to ecological sustainability. This entails the maintenance of ecological processes, biodiversity and the protection of water quality.

The NFPS provided the basis for the Regional Forest Agreement (RFA) process. RFAs are 20 year plans for the conservation and sustainable management of Australia’s native forests negotiated between the Australian and some state governments.

1 The Forest Principles is the informal name given to the Non-Legally binding Authoritative Statement of Principles for Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests (1992). It is a non-legally binding document that makes several recommendations for conservation and sustainable development forestry.
The NFPS also recognises that plantations provide a wide range of environmental benefits to the community and that their management should be based on sustainable management techniques. Plantations for Australia: The 2020 Vision (1997, 2001) took its lead from the NFPS and states its overarching principle as the enhancement of regional growth and international competitiveness through a sustainable increase in the plantation resource. It is a strategic partnership between the Australian, state and territory governments and the plantation timber growing and processing industries.

**NSW CONTEXT**

Around 34 percent of the total area of NSW is forested. Within the total forested area, there are 2 million hectares of State forests, including approximately 200,000 ha of softwood plantations (Figure 5).

Figure 5: Proportion of State forests in NSW

---

NSW Forest Agreements are in place for 20 years and are the result of consultation and consensus established between the NSW Government and major forest stakeholders. They detail the agreed basis for long-term decisions on forest use and management.

Activities in native forests are regulated by the terms of an Integrated Forestry Operations Approval (IFOA). An IFOA establishes strong, clear and consistent environmental regulation of native forest operations.

Plantations are regulated by the Plantation and Reafforestation Act 1999 and the Plantation and Reafforestation (Code) Regulation 2001. The Act aims to promote plantation establishment and contains standards for the establishment, management and harvesting of the trees. This applies to private and government-owned plantations.

**FORESTRY CORPORATION**

Forestry Corporation operates under the direction of a skilled commercial board, which is constituted under the Forestry Act 2012 and accountable to the voting shareholders in line with the State Owned Corporations Act 1989.

The corporation’s senior management team consists of the CEO and four divisional managers heading up two operating divisions, Hardwood Forests Division (HFD) and SPD, as well as Corporate Resources Division and Finance & Technology.

Each year, Forestry Corporation enters into an agreement with the shareholders known as the Statement of Corporate Intent, which details the objectives and strategic direction of the business, along with financial performance targets and other related matters, such as risk management.

Forestry Corporation operates under a corporate business strategy that is reviewed annually and provides staff with a clear set of organisational aims, ‘focus’, goals and objectives.

**REPORTING ON OUR COMMITMENTS**

Forestry Corporation produces an Annual Report which is tabled in the NSW Parliament. In addition Forestry Corporation reports its performance against a suite of sustainability indicators consistent with reporting commitments under the Montreal Process, the FAs and IFOAs. This information is published on the Forestry Corporation website.

Forestry Corporation publishes a range of reports in line with its obligations as a State Owned Corporation and under the RFAs, NSW FAs and NSW IFOAs. These reports provide transparency and accountability and measure our performance against commitments made under the various agreements and licence conditions. We also make Australian Standard for Sustainable Forest Management and ISO 14001 audit reports publicly available, providing independent verification that we continue to meet the requirements of these standards.
ASSET AND ESTATE PRODUCTIVITY

Forestry Corporation manages over 2 million hectares of State forests in NSW.

The HFD has stewardship of over 2 million hectares of State forest and supplies timber from coastal native forests and hardwood plantations as well as cypress and red gum forests in the state’s west.

The SPD manages over 200,000 hectares of plantation pine in the central, south and north-west of the state, providing a renewable source of timber for industry and supporting regional communities.

FOREST ESTATE AND TIMBER PRODUCTION

Forestry Corporation is committed to providing a sustainable timber supply from the State forests of NSW, while the National Forest Policy Statement commits the signatories to actively managing the public plantation resource in order to maximise net returns. In line with these commitments, SPD aims to produce high quality sawlogs as efficiently as possible without environmental harm and within the framework of ESFM.

To meet this commitment, Forestry Corporation:

- maintains a comprehensive, adequate and representative (CAR) reserve network of dedicated reserves, informal reserves, and areas that are excluded from harvesting to protect environmental values (see Our environment)
- applies a system of adaptive management in planning, implementing and monitoring forest operations to protect rare or threatened flora and fauna and their habitats, along with soils and water (see below and Our environment)
- maintains the plantation estate by ensuring timely re-establishment
- periodically reviews timber availability and supply commitments based on performance monitoring and improvement of yield models.

The Forestry Corporation plantation estate covers a range of geographic areas. Figure 6 provides a summary of the total area managed by region and species/category. Maps showing area by species for each Management Area are in Appendix 1.

Figure 6: Area in hectares by region and species/category as of 30 June 2015

1 National Forest Policy Statement, page 26
SPECIES GROWN
The Plantation Silvicultural Manual outlines the silvicultural policy for the planted forests estate. The manual outlines species selection and site evaluation and describes species characteristics, specifications for cultivation, seedling quality, planting, nutrient management, weed control, pruning and management of stand density.

GENETICS
Forestry Corporation produces most of the radiata pine planting stock we use at the Forestry Corporation nursery at Blowering (Tumut). A small proportion of the seedlings used are grown at our Grafton Nursery, while the remainder is purchased from nurseries interstate.

Most seed is purchased from New Zealand and is a product of the genetic improvement program managed by the Radiata Pine Breeding Company (RPBC), of which Forestry Corporation is a shareholder. Recently, seed orchards have been established in Australia to mitigate the risk of reliance on overseas seed.

Seeds are selected for the characteristics of desirable growth rates, growth form and habit, pest and disease resistance and wood properties, with the aim of maximising wood quality and forest health.

SPD does not use genetically modified trees.

RADIATA PINE (Pinus radiata)
Since 1947, radiata pine (Pinus radiata) has been the most widely planted species in Forestry Corporation plantations, as it is suited to a considerable range of growing conditions, is easily raised and planted, and provides larger yields of usable timber in a shorter time than many native species.

Radiata pine is mostly grown in large plantations on the Southern Slopes and Central Tablelands near Tumut and Bathurst. Smaller plantations are grown on the Northern tablelands near Walcha. Generally, stands are established with 1,000 to 1,300 stems per hectare. On steeper slopes, where no thinning operations are likely, stands are established with a lower stocking of around 700 to 900 stems per hectare.

The timber is particularly useful. It can be readily sawn, peeled, or converted to pulp to make newsprint or MDF, has good nail-holding power, works well, can be easily stained, and, when treated with preservatives, is suitable for long-life applications in the ground.

Traditionally, radiata pine plantations undergo two thinnings before a clearfall. The decision to thin a particular area is, however, dependent on a number of variables such as slope, drought exposure, initial stocking, tree health and customer product requirements.

SOUTHERN PINE (P. elliottii var. elliottii, P. taeda and P. Caribaea var. hondurensis)
Southern pine is planted in the Grafton Management Area. Until recently, the southern pine species planted in NSW were a combination of P. elliottii and P. taeda with some P. caribaea. However the hybrid between P. elliottii var. elliottii (PEE) and Pinus caribaea var. hondurensis (PCH) has also been planted on a large scale. The hybrid combines the high growth rate of PCH with PEE’s tolerance of poorly drained sites, wind-firmness, small branches and stem straightness.

Plantations of the hybrid have been successfully established in the coastal lowlands and into the northern escarpment, up to an elevation of around 760 metres, in both summer dominant and uniform rainfall areas. It is planted as container stock and shows a useful tolerance to mild fire once established.

However, pure species PEE and P. taeda are again being established while further investigation into the timber quality of young hybrids is completed.

HOOP PINE (Araucaria cunninghamii)
The Grafton Management Area also contains a small planting of hoop pine (Araucaria cunninghamii), which is native to the coastal rain forests from northern NSW to northern Queensland.

This is the result of a planting program undertaken between 1938 and 1954, which was discontinued due to high costs. The old plantation stands have received up to five thinnings and are now being progressively clear-felled.

The timber is well regarded, however it often competes directly with the timber from exotic conifers such as southern and radiata pine, which can be grown much more economically. Hoop pine plantations are currently being converted to Southern pine species where appropriate.
THE PLANNING FRAMEWORK

SPD completes long-term strategic planning process, which use models to predict the amount of timber available over a 70 year planning horizon, tactical planning, which looks at a five-year timeframe, and site-based operational planning.

Table 2: Timeframes for SPD’s planning framework

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Timeframe (years)</th>
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<tbody>
<tr>
<td>Strategic</td>
<td>1–70</td>
</tr>
<tr>
<td>Tactical</td>
<td>1–5</td>
</tr>
<tr>
<td>Operational</td>
<td>Up to 2 years</td>
</tr>
</tbody>
</table>

FORESTRY ACTIVITY PROCESS MAPPING

Forestry Corporation has developed a series of process maps designed to identify all the key activities undertaken in the planning of forestry activities. They are used as a means of ensuring that important aspects of the planning process, such as environmental compliance, consultation with stakeholders and appropriate communication within Forestry Corporation, are completed.

Figure 7: SPD’s planning process

STRATEGIC PLANNING

Forestry Corporation needs reliable estimates of the wood available in the longer term in order to confidently deliver on long term wood supply agreements, optimise the utilisation of the resource and identify other business opportunities. Robust predictions of when, where and how much timber can be harvested underpin efficient harvest planning.

In simple terms, sustainable timber supply or the sustainable yield, is the level of supply that can be maintained in perpetuity by providing a balance between the volume of timber harvested and the volume of timber produced through growth each year.

The aim of the strategic planning process is to determine a sustainable wood flow across the forest estate. Strategic planning has a 70 year planning horizon, which equate to approximately two plantation rotations. The following elements contribute to the modelling of forest timber yields:

- area and stand history records, which define the area, age and condition of the plantation areas
- inventory plots, which are sample plots across the estate where measurements of tree diameter, height and timber characteristics such as form and stem are recorded to provide a snapshot of the current volume standing in the forest and derive product estimates
- permanent growth plots, which are repeatedly measured on a regular basis to estimate tree growth rates
- computer-based modelling, which is generally done using specialist software developed for forest modelling.
- calibration of predicted versus actual harvested yield through yield reconciliation.
TACTICAL PLANNING
The tactical plan includes a schedule of harvesting units that have been identified as practically, economically and legally available and ready for harvesting within a five-year timeframe. The plan identifies areas where licensed contractors may harvest timber, under instruction by Forestry Corporation, to meet wood supply commitments to customers and determines roading and site establishment programs.

Tactical plans are prepared at a regional level, and are derived from the strategic plan. The tactical plan relies on accurate mapping of stocked and thinned area, and current yield information.

The volume of timber products harvested and area harvested are monitored against predicted yields and reported quarterly. This, along with other data, provides feedback to predictive model components that assists in further refining and developing future timber yield estimates.

OPERATIONAL PLANNING
Operational planning looks forward two years and comprises the following aspects:

- operational scheduling, which details the timeframe and order in which activities are completed, and the resources allocated to each operation
- site-based plans, which provide instructions to operators. These are written in accordance with the P&R Code and SPD’s best practice requirements
- production (to roadside) and woodflow (haulage / distribution) planning sets out short term log making and log delivery expectations on a weekly or monthly basis.

ANNUAL SCHEDULES
Annual schedules or programs are the means by which Forestry Corporation plans activity in alignment with customer and budget cycles. Forestry Corporation develops annual schedules for:

- harvesting, in the form of a plan of operations that is verified for volumes and species and takes into consideration the requirements of customers, markets and weather-related constraints
- road construction and maintenance, which determined in accordance with road and fire trail management plans. Roads required for harvesting are closely aligned with the harvesting plan of operations, while other road works will be scheduled according to potential for environmental harm, safety and the requirements of forest users
- fire fuel management, which is determined according to Fire Protection Area Fuel Management Plans. These plans are entered into the RFS BRIMS and available to the District Bush Fire Management Committee. The schedule is influenced by the need for asset protection within and near State forests, ecosystem management and the desire to reduce excessive fuel loads before or after harvesting.
- plantation establishment, which takes into consideration the available land bank, areas of previously established plantation that have failed and budget constraints
- pest and weed control, which address concerns of stakeholders and outline priorities
- forest regeneration works, which are prioritised based on the nature of the site and the ability to improve regeneration outcomes. Factors considered in selecting sites for regeneration works include the productivity of the site, time since disturbance, potential for implementing effective prescribed burns and the size of the issue

A range of measures are applied to mitigate risks in operational planning, including:

- application of the P&R Code
- adherence to the Forest Practice Code, which applies to plantation timber harvesting and road maintenance and construction
- use of operational Plan templates that contain instructions designed to address key risks and guide the activity, while protecting natural and cultural environment values
- completion of operational auditing to monitor compliance with plan conditions and completion of remedial works and recurrence prevention measures where non-compliance is found
- reporting and incorporation of results into subsequent planning and implementation processes. This process is known as adaptive management and these principles are used in all forestry operations and underpin every part of the continuous improvement cycle.
- capturing any new risks identified are captured in Forestry Corporation’s risk management software\(^1\) and developing and implementing control measures.

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\(^1\) Riskware is the Forestry Corporation system used to capture and manage all environmental and safety related risks, incidents and hazards.
SITE-BASED PLANS
Risk management underpins Forestry Corporation's FMS. Forestry Corporation maintains a register of risks to ensure that controls are developed for those activities that pose significant risks. Those operations determined as having the greatest potential environmental risk are:

- timber harvesting involving tree felling, log extraction and log haulage
- road construction and maintenance, particularly drainage feature crossings and side cuts on steep side slopes
- fire management, including hazard reduction burning, particularly in ecologically sensitive habitats and streamside buffers
- use of chemicals
- plantation establishment.

Site-based plans are prepared for operational activities as required by the P&R Code, as well as those activities that pose a significant risk. They contain site-specific instructions to protect natural and cultural values during the activity. A site-based plan contains a map as well as relevant safety information, including the location of emergency meeting points. Plans may be amended during operations where necessary to ensure values are protected.

The degree of site-based planning, supervision and monitoring undertaken depends on the nature and intensity of operations and the potential environmental impacts and safety risks.

During operations, new information may make it necessary to amend a site based plan. Any decision to amend a plan is documented.

IMPLEMENTING THE SITE BASED PLAN
Forestry Corporation staff oversee all operations. The level of supervision depends on the nature of the activity, the associated risk and the experience of the contractor.

Prior to the commencement of activities, relevant staff and operators are briefed on the contents of the site-based plan to ensure that they share a common understanding of the plan's requirements.

Contractors, operators and Forestry Corporation supervisory staff are required to be trained and accredited to a recognised level of competence in the various tasks they undertake.

Training includes:

- environmental care in the fields of flora and fauna management and Aboriginal and non-Aboriginal cultural heritage management
- silviculture
- soil and water management
- occupational health and safety procedures
- first aid skills
- log making and grading, including log optimisation

DOCUMENTATION ASSOCIATED WITH PLAN IMPLEMENTATION
Documentation and records management is an important component of Forestry Corporation's FMS. Documentation and record keeping requirements are prescribed by the FMS and through Forestry Corporation's records policy and procedures.

Forestry Corporation will maintain appropriate documentation and records in order to:

- manage risk
- demonstrate how legal and policy requirements are being met
- ensure we operate an efficient and effective business
- facilitate review and continuous improvement.
Figure 8: Operational plan process

- Prepare Operational Plan
  - Conduct desktop analysis of identical planning unit to highlight:
    - Forest Management Zones
    - Riparian zones
    - Ridge and headwater habitat
    - Rainforest, old growth
    - Steep areas
    - Erodible soil types
    - Flora and fauna requirements
    - Neighbour issues
    - Road access
    - Cultural heritage
  - Produce operational plan Base Map.
  - Consult with neighbours, adjust plans accordingly
  - Conduct field verification
  - Consult with other internal functions
  - Revise Base Map
  - Optimize costs vs. benefit
  - Incorporate cultural heritage requirements
  - Conduct internal review and seek plan approval (due diligence check)
  - Advise stakeholder where appropriate
  - Conduct pre operational briefing
  - Commence operation
  - Monitor and report progress and compliance
  - Consult with other internal functions
  - For harvesting, assess silviculture options
  - Incorporate soil and erosivity constraints
  - Incorporate flora and fauna requirements
With the advent of new technologies, particularly mobile devices such as tablets and smart phones, the ability to capture and record information is changing. Forestry Corporation aims to embrace and develop this technology to improve management and business outcomes. To this end, Forestry Corporation has developed a mobile app (application) for staff that is used to capture environmental, planning and incident related information in the field via mobile devices. The app improves data capture through its ease of use, accuracy and the ability to automatically provide a spatial reference which is linked to the geographic information system (GIS). Forestry Corporation will continue to investigate opportunities to improve planning through the use of technology.

DATA COLLECTION
Forestry Corporation assesses existing data when planning forestry activities to identify whether further information needs to be collected to assess site-specific impacts of the proposed activity and develop any amelioration measures.

Forestry Corporation maintains large and complex databases including an extensive GIS and a stand record system. These are used to collect, process, store, analyse and report forest information required for planning. Forestry Corporation GIS libraries contain a suite of information on cadastre, mapping context, topography, the environment, forest disturbances and forest management.

Other databases linked to the GIS, and which can be represented spatially, include timber inventory, flora and fauna surveys and species location, Aboriginal cultural heritage sites and non-Aboriginal cultural heritage items.

Where existing information is inadequate, additional surveys may be required. Additional information may relate to inventory estimates, flora and fauna, cultural heritage, aquatic habitat, soil and water. All additional data collected is regularly incorporated into Forestry Corporation’s databases to ensure strategic and operational planning are based on the most up-to-date information.

SILVICULTURE – THE PLANTATION LIFE CYCLE
While most early plantations were developed on timbered Crown land, from 1966 to 1977, large areas of cleared and semi-cleared agricultural land were acquired and planted to enable NSW to meet commitments under the Commonwealth Softwood Agreement. Since then planting has only occurred on substantially cleared agricultural land or former plantation sites.

- Silvicultural practices applied in SPD aim to:
  - provide a sustainable supply of forest products while protecting other values
  - maximise financial return from timber productivity
  - protect forest health
  - maintain flexibility to cope with market opportunities

To implement these objectives, Softwoods Plantation Division will:

- apply silvicultural practices that provide a sustainable flow of timber from plantations in the most cost effective manner
- maintain the productive capacity of the land base by minimising the amount of plantable land that is unplanted, known as landbank
- protect forest stands from damage by pests, diseases, fire or other destructive events
- protect soil and water
- manage the forest so as to be able to adapt to changing markets and circumstances
- ensure the workforce has technical skill and experience in silviculture required to meet all the above objectives.

NURSERIES
Forestry Corporation’s Blowering nursery is one of the largest Pinus radiata seedling producers in Australia. It produces up to seven million seedlings per year, which are used to re-establish plantations across the state. Forestry Corporation also operates a smaller nursery located at Grafton, which, as part of its annual crop, produces up to 1.5 million softwood seedlings a year to re-establish our plantations.
SITE PREPARATION

Preparing the area before planting is done to enhance the prospect of achieving a vigorous and well stocked plantation. Preparing a site to plant involves clearing any existing debris, cultivation and weed control. Additional road works may also be required to provide access.

On former plantation sites, harvesting residue is retained as much as possible in order to maintain the productive nature of the site. Residue is left across the harvested area and the land is cultivated through the debris. In areas where there is a higher than normal level of debris, chopper rolling may be undertaken, or the debris may be pushed into heaps known as windrows, which are burnt. Burning is minimised because it has the potential to remove nutrients from the site. The management of residues on second rotation sites can be problematic in areas where markets are limited.

Site cultivation improves root depth, provides a path for moisture to penetrate the soil, concentrates nutrient rich topsoil around seedlings, elevates seedlings out of saturated soils and improves the effectiveness of weed control measures. Cultivation can be constrained by characteristics of the site, which are identified in the planning process.

Each site is assessed for site specific risks, which are then managed through the implementation of a site specific plan.

SPD:
- implements the requirements of the Plantations and Reafforestation (Code) Regulation 2001 (P&R Code)
- aims to minimise the landbank and maintain the productive capacity of the land
- is mindful of nutrient cycles and water quality and quantity and soil quality.

USE OF CHEMICALS

Forestry Corporation is committed to using chemicals only where appropriate, and with care for the maintenance and protection of water quality, biodiversity, soil values and neighbouring land uses. In managing our forests, Forestry Corporation aims to minimise the use of chemicals while meeting our legal obligations to manage pests and weeds.

The use of chemicals in plantation establishment and for general management on State forests is governed by legislation and detailed in the Forestry Corporation Manual for the Use of Chemicals and the Plantation Silvicultural Manual. Chemical use is required for a broad range of activities from weed control, to pest and disease control, fire suppression, as fuel and in the form of fertilisers. In SPD, herbicide is primarily used to minimise weed competition for moisture and nutrients. Weed control is particularly important in the first two years of the rotation, when the seedlings are more susceptible to this competition. Most herbicide use occurs in this time.

The use of chemicals is identified in the Forestry Corporation risk register and the following broad strategies are employed to minimise the risk associated with chemical use:
- consideration of alternatives (including eliminating and substituting products)
- understanding the products used
- application in accordance with manufacturer’s recommendations or the off-label permit conditions
- maintaining equipment
- consideration of where to apply them.

Forestry Corporation implements the requirements of our Pesticide Use Notification Plan which describes how we provide the public with notice about our pesticide use in outdoor public places. Operational plans specify the requirements associated with chemical application, including identification of any sensitive areas. Additionally, all those who handle and use pesticides must hold current accreditation in pesticide application and specific training requirements are identified for supervisors involved in aerial application of pesticides.

Water sampling may be undertaken after using herbicides to ensure they are not found in waterways. The decision to undertake sampling will be based on a range of factors including legislative requirements, the application method and environmental factors.

The Australian Plantation Forest Industry Herbicide Research Consortium has a primary focus on sourcing and trialling alternative herbicide products. As an active member of this group, SPD participates in field trials of options.
FOREST NUTRITION
Nutrition is important to maintain tree health and vigorous growth and to efficiently produce straight stems that are suitable for timber production. High levels of phosphorus are required for plantation growth – some sites are lower and need more treatment.

Improved pasture sites often also have a boron deficiency which, if left unchecked, will result in deformed stems. Forestry Corporation completes foliage nutrient analysis and undertakes remedial fertilising where a deficiency is detected, particularly in the case of a boron deficiency. Late age (post thinning) fertilising may also be undertaken when appropriate and Forestry Corporation also undertakes targeted foliar sampling to identify nutritional issues. Nutrition in plantations is addressed in the Planted Forests Silviculture Manual.

HARVESTING
Forestry Corporation carries out two types of plantation harvesting activities, namely thinning and clearfall. Thinning is the process by which defective or poor quality trees are identified and removed to encourage growth in the remaining trees. Clearfall is the final harvest and is undertaken at the commercial endpoint of the stand.

The timing of both thinning and clearfall harvest events depends on a number of practical considerations such as species and growth rates, stand or site history and stocking and the markets available at the time of harvest.

Each plantation can undergo up to two thinning operations, a clearfall and subsequent re-establishment. The silvicultural strategy, including planting rates, thinning and final harvest regimes is monitored and can be reviewed depending on economic and market considerations.

All harvesting operations will have a site-based plan that identifies the site-specific silviculture objectives as well as key safety, environmental, and financial risk factors and mitigation measures.

BIO FUELS
Use of end-of-rotation felling waste offers the energy industry an opportunity to generate electricity from a renewable resource as an alternative to using fossil fuels. This activity minimises post-harvesting debris and reduces the cost of re-establishment, eliminates the requirement to burn the debris on site as well as reducing environmental impacts.

Visy Pulp and Paper Ltd is currently harvesting residue in Tumut for use as fibre or boiler fuel that can be used for energy production.

ROAD CONSTRUCTION AND MAINTENANCE
An extensive road network on State forests has been constructed progressively since the early twentieth century and maintained and upgraded as required. SPD maintains the road network to:

■ ensure harvested timber can reach the mill in a cost effective and reliable manner to meet customer commitments
■ maintain adequate access for fire protection and management
■ provide appropriate public access.

In managing its road network, SPD:

■ meets the requirements in the P&R Code
■ has due regard to the needs of harvesting traffic, public safety, state of repair and potential for environmental harm in determining which roads will be available for public use
■ provides other services to the public such as access for recreation and tourism as a community service obligation (CSO).

The following broad strategies are used to minimise the risks associated with road building and maintenance:

■ identifying future network requirements and any major new construction of roads that may be necessary through the tactical and strategic planning processes and incorporating these into annual schedules of work
■ providing and maintaining a road network to assist with fire suppression and management
■ ensuring the workforce is trained, competent and accredited where required
■ developing, implementing and monitoring conformance with operational plans for road works.
PRODUCTIVE CAPACITY

Stand density is characterised by the number of trees per unit area (stems/ha), and by stand basal area (m$^2$/ha). The management of stand density is critical to the biological and economic success of plantations.

Stand density affects the total amount and quality of the wood produced, the potential for wind and snow damage, and plantation health. It is managed by varying the number of trees planted and their geometric spacing at planting, and by the timing and intensity of subsequent spacing (thinning) treatments.

The average growth of a stand is measured using mean annual increment (MAI). This is a way of measuring the increase in total stem volume over time. It is usually expressed in terms in cubic metres (m$^3$) per hectare per year.

Figure 9: Snowy Region – age and silvicultural condition of commercial pine stands

Figure 10: Northern Region - age and silvicultural condition of commercial pine stands
Table 3: The mean annual increment by Management Area

<table>
<thead>
<tr>
<th>MA</th>
<th>Species</th>
<th>Mean Annual Increment (m³/ha/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Min</td>
</tr>
<tr>
<td>Bathurst</td>
<td>Pinus radiata</td>
<td>1.7</td>
</tr>
<tr>
<td>Bombala</td>
<td>Pinus radiata</td>
<td>8.9</td>
</tr>
<tr>
<td>Grafton</td>
<td></td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>Pinus radiata</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>Southern Pine</td>
<td>5.4</td>
</tr>
<tr>
<td>Tumut</td>
<td>Pinus radiata</td>
<td>5.1</td>
</tr>
<tr>
<td>Walcha</td>
<td>Pinus radiata</td>
<td>7.0</td>
</tr>
<tr>
<td>All</td>
<td></td>
<td>1.7</td>
</tr>
</tbody>
</table>

STAND RECORD SYSTEM

Forestry Corporation maintains a stand record system, which is a spatially-linked record of all plantation areas, site treatments, harvesting and yield monitoring. It provides a snapshot of the current state of the forest and is the starting point for all modelling of future yield predictions.

ESTATE MODELLING

Forestry Corporation calculates the amount of timber available now and into the future using a predictive tool that allows us to evaluate multiple objectives and to explore management options to meet a number of different constraints. Long-term yield predictions based on this modelling are critical for efficient management of plantation forests, policy formulation, strategic planning, and operations management.

Forestry Corporation uses estate modelling tools to determine the areas that can be scheduled for harvesting while maintaining a sustainably supply level. Among other things, modelling considers supply commitments, market and product demand, the estimated capacity of the forest, the ability of the forest to support harvesting operations during periods of wet weather and logistical issues.

Estate modelling allows Forestry Corporation to:

- optimise the value of the resource within supply commitment constraints over a timeframe of approximately 70 years
- optimise volume of the resource to meet commercial objectives
- identify opportunities for further sales and timber industry growth.

The predictive nature of estate modelling is balanced by real world checks, including on-going review of whether silvicultural strategies met their objectives and comparison of predicted and actual harvest yields.

SPD implements plot measurement programs that span strategic through to operational (pre-harvest) inventory and also completes assessments for operational control and biometric analysis. For this to work, growth models and other forest information systems must be compatible and linked efficiently and this is done through geographic information systems (GIS), inventory databases, growth models and yield scheduling and optimising software.

Forestry Corporation:

- runs strategic models as required, usually annually
- reviews stratification of planted forest areas to assist future sampling and modelling
- refines harvestable area predictions
- measures inventory plots in accordance with the inventory framework
- maintains the permanent growth plot data system
- maintains yield tables and growth models with additional field data
- improves growth and mortality models
- monitors and incorporate progressive yield data between five yearly review periods.

Forestry Corporation also has an ongoing program to improve estate modelling.
YIELD RECONCILIATION

Yield reconciliation is a process where we compare predicted product and volume outturn with what was actually harvested. SPD runs a yield reconciliation every quarter.

Reconciliation of the sustainable yield is conducted annually and is published on Forestry Corporation’s on website as part of our annual sustainability reporting.
FOREST RESEARCH AND DEVELOPMENT

Improved information derived from research and development provides an impetus for adaptive management and continuous improvement, which is fundamental to ecologically sustainable forest management.

NSW DPI Forest Science group provides technical advice and research and development services to Forestry Corporation under a Service Level Agreement (SLA). This group has scientific and technical expertise in forest ecology and sustainability, forest health, biosecurity and resource assessment, carbon in forests, wood products and bioenergy, and biometrical services. Forestry Corporation invested $1.8 million in research and development under this SLA during the 2014 financial year.

Forestry Corporation also supports research and development into harvesting and haulage operations as well as enhancing plantations, particularly in relation to improved technology and processes, tree breeding, species selection, land capability assessment, and integration of commercial wood production with agricultural activities.¹

In addition to the work carried out under the SLA with DPI, Forestry Corporation’s current research priorities include:

- a major long-term project to improve understanding of the effects of hazard reduction burning on plant and animal communities and of fuel build-up following burning
- an ongoing program of water quality monitoring to assess measures taken to prevent sediment entering streams during harvesting
- use of remote sensing technology that measures distance by illuminating a target with a laser and analysing the reflected light (LiDAR) to improve a range of activities including planning efficiency, inventory assessment and management of forest health.

¹ National Forest Policy Statement, p 28
PROFITABILITY

As a State Owned Corporation Forestry Corporation is charged with managing State forests commercially and ensuring a financial return to its shareholders, the NSW Government.

Financial performance is reported in our Annual Report, which is independently audited and is provided to our shareholders for tabling in the NSW Parliament and published on our website.

COMMERCIAL USE OF STATE FORESTS

State forests support a range of commercial enterprises including those involved in harvesting and processing timber and other forest products and materials as well as enterprises using State forests for grazing, apiary, tourism, special events and hosting infrastructure such as telecommunications towers. In line with its objectives to run a successful business and maximise the value of the State’s investment, Forestry Corporation seeks fair market value for the goods and services it provides in support of these commercial enterprises.

Commercial operators also source non-timber products including foliage, flowers, seed and leaf oil as well as hard rock and gravel, while fees are also collected for areas of State forest that are leased for honey and beef cattle production, commercial tourism ventures or events and infrastructure placement.

TIMBER SUPPLY COMMITMENTS

Timber sales account for the majority of revenue from commercial activities on State forests. The major timber products sourced from State forests include sawlogs and pulpwood. Timber sales account for 93 per cent of SPD’s commercial activities.

Forestry Corporation’s commercial plantation resource makes a significant contribution to the domestic wood-processing industry. It is an asset that fosters economic growth and the development of regional communities in NSW, supplying a significant proportion of the wood used in NSW and contributing to export markets. It has supported the development of large, integrated fibre-using industries at Tumut and Oberon, as well as smaller industries in many other regional areas.

Radiata pine typically produces structural grade sawlogs that can be sawn into products used for house frame construction. The remaining part of the tree is either pulp, where the final product is made from reconstituted wood fibres or flakes, or non-structural products including landscape sleepers, fence palings, and posts. The point of sale of Forestry Corporation’s major timber products is delivered to the customers’ mill.

Timber supply agreements outline the volumes and quality of timber Forestry Corporation is required to supply and the customer is required to purchase each year. These agreements are detailed annually in valuation reports. They are managed as commercial contracts by Forestry Corporation and are subject to change from time to time.

Forestry Corporation has wood supply commitments with a range of customers. Current commitments are published on Forestry Corporation’s website.

Export markets are variable but may provide additional opportunities when overseas market conditions are favourable.

Table 4: Timber supply agreement volumes as at 2015 valuation

<table>
<thead>
<tr>
<th>Region</th>
<th>Management Area</th>
<th>Timber supply agreement volumes (m³)</th>
<th>Sawlog</th>
<th>Pulp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snowy</td>
<td>Bombala</td>
<td>300,000</td>
<td>250,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tumut (including Moss Vale)</td>
<td>1,048,877</td>
<td>611,000</td>
<td></td>
</tr>
<tr>
<td>Northern Softwoods</td>
<td>Bathurst</td>
<td>644,000</td>
<td>380,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grafton</td>
<td>101,625</td>
<td>14,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walcha</td>
<td>66,000</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
TIMBER SUPPLY STRATEGY

SPD is committed to maintaining a continuous timber supply through:

- maintaining or improving the productive capacity of the plantation estate
- fully utilising the available authorised plantation area for growing of plantations where this is economic
- re-establishing plantations in a timely manner
- taking advantages in tree breeding where economically viable
- ensuring optimum log value recovery.

EMPLOYMENT AND REGIONAL DEVELOPMENT

The forest and wood products industries employ more than 73,000 Australians including 22,000 people in NSW. NSW produces a third of Australia’s softwood logs and has the largest number of hardwood sawmills in Australia.

Forestry Corporation is a major player in this large and diverse industry and has staff based in a number of regional areas throughout NSW, with major offices in Bathurst, Tumut, Coffs Harbour, Wauchope, Dubbo, Batemans Bay and Sydney and many smaller offices and depots. In 2015 of the more than 580 full time equivalent staff employed by the corporation, approximately 88 per cent are based in regional locations.
OUR ENVIRONMENT

State forests in NSW comprise native forest, hardwood plantations and softwood plantations. The native forests of NSW possess an array of ecosystems and other environmental values that the Forestry Corporation is committed to maintaining and enhancing wherever possible. The principle of ESFM is fundamental and entails the maintenance of ecological processes, biodiversity and protection of water quality.

Forestry Corporation recognises that healthy and vital forest ecosystems are the basis for promoting and maintaining biodiversity and productivity and for providing a wide range of possible community uses, products and benefits.

FOREST ECOSYSTEM HEALTH

As part of the implementation of the NFPS, the NSW government undertook Comprehensive Regional Assessments (CRA) of the environmental, heritage, economic and social values of the native forests on public lands. Plantations were not considered as part of this process.

The CAR reserve system, and complementary management of adjoining forest areas aims to conserve old-growth and wilderness and provide for forest biodiversity. The national reserve system is comprised of dedicated and informal reserves and areas where the special values are protected by prescription.

Biodiversity is measured in terms of genetics, species and ecosystems. Forests are dynamic systems, with biodiversity constantly changing as the forest responds to natural forces such as storms and fire.

Forestry Corporation manages the softwood plantation estate primarily for wood production. There are often important opportunities for biodiversity conservation within plantations. Research has shown that, in tableland areas, plantations have greater diversity than the cleared lands they have replaced. While most early plantations were developed on timbered Crown land, from 1966 to 1977, large areas of cleared and semi-cleared agricultural land were acquired and planted to enable NSW to meet commitments under the Commonwealth Softwood Agreement. Since then planting has only occurred on substantially cleared agricultural land or former plantation sites.

Forestry Corporation notes the value of retained native vegetation within plantations and manages these areas in accordance with the forest management zoning system as outlined in more detail below.

In striving to achieve positive outcomes for forest health and biodiversity, Forestry Corporation is cognisant of the practical limits of what can be achieved. In particular, the scale of problems such as invasive weeds and feral animal management is significant in some areas. In these instances, further research and a coordinated approach with other land management agencies is required.

Forestry Corporation protects biodiversity values at a landscape level and by addressing specific issues that directly impact on biodiversity.

LANDSCAPE PROTECTION

Protection of certain landscape features, communities and habitat components is an important part of maintaining a balance between timber production and conservation outcomes. Through the National Forest Policy Statement (NFPS) and the resulting comprehensive regional assessment (CRA) and comprehensive, adequate and representative (CAR) reserve system, substantial areas of NSW State forest have been set aside specifically for conservation. The CAR reserve system comprises dedicated reserves, informal reserves and values protected by prescription.

Forestry Corporation implements, at a landscape level, a land classification system known as Forest Management Zoning (FMZ), which uses a spatial format to classify the forest according to management intent. It is based on nationally agreed reserve criteria and is linked to the International Union for Conservation of Nature categories for reserve protection.

The FMZ system differentiates between areas of State forest that are specifically set aside for conservation and areas that are available for other activities, including timber harvesting. Implementing the FMZ system ensures forest management contributes both to regional biodiversity and provision of a constant and sustainable supply of timber to the forest industry. The NSW Biodiversity Strategy identifies the CRA/RFA program resulting in CAR reserves as one of the key initiatives undertaken in NSW to protect core areas of biodiversity. It also identifies ecologically sustainable forest management, which includes species recovery planning and pest management programs, as a means of protecting biodiversity on all forested tenures.

1 Plantation forests and biodiversity conservation, DB Lindenmayer, RJ Hobbs and D Salt, 2003, Australian Forestry, April 2013, p 61
2 Borsboom et al. (2002) and Klomp and Grabham (2002)
3 The Commonwealth, State and Territory Governments agreed to the development of National Forest Reserve Criteria, in accordance with the National Forest Policy Statement. The Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-Committee (known as JANIS) produced a report outlining criteria setting out the components of the Comprehensive, Adequate and Representative (CAR) reserve system.
Table 5: Forest management zones – management status and principles by area

<table>
<thead>
<tr>
<th>Management status</th>
<th>Area (ha)</th>
<th>Management principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal reserves (flora reserves) (^1)</td>
<td>9,515</td>
<td>Dedicated reserves managed to maximise protection of very high natural and cultural conservation values.</td>
</tr>
<tr>
<td>FMZ 1 – Special Protection.</td>
<td></td>
<td>Intentional disturbance is generally not permitted, but education, scientific research and benign recreation may be facilitated in these areas. The use of fire may also be prescribed to maintain and protect ecosystems in the landscape. Management activities are guided by a Working Plan approved by the Minister administering the Forestry Act 2012.</td>
</tr>
<tr>
<td>Informal reserves (special management zones) (^2)</td>
<td>3,533</td>
<td>These areas are managed to maximise protection of high natural and cultural conservation values.</td>
</tr>
<tr>
<td>FMZ 2 – Special Management</td>
<td></td>
<td>Most areas managed as informal reserves are FMZ 2 – Special Management, or FMZ 3A – Harvesting Exclusion.</td>
</tr>
<tr>
<td>FMZ 3A – Harvesting Exclusion</td>
<td></td>
<td>Special management zone boundaries can only be varied by an act of parliament.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Planned disturbance is generally not permitted, except when associated with provision and use of infrastructure or protection of natural and cultural values. Scientific research may be facilitated and fire may be used to maintain and protect ecosystems in the landscape. Mining may be permitted under the provisions of the Mining Act 1992 but only after meeting the NSW Government's environmental assessment and development consent requirements. Managed under a working plan for informal reserves.</td>
</tr>
</tbody>
</table>

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1. Formal reserves in the form of national parks, nature reserves, and, on State forest, flora reserves. These areas are equivalent to International Union of Conservation and Nature (IUCN) Protected Area categories I, II or IV and on State forest are classified as Forest Management Zone (FMZ) 1 – Special Protection.

2. Informal reserve includes Crown Reserves, State Recreation Areas and State Conservation Areas. On State forests they are FMZ 2 – Special Management areas that are greater than 40 hectares and have a minimum width of 200 metres or are adjacent to dedicated reserves. They also include special management zones where they have been created under Section 18 the Forestry Act 2012. All are equivalent to IUCN Protected Area categories II, III, IV or VI.
Management status | Area (ha) | Management principles
--- | --- | ---
Protected by prescription | 40,322 | Areas in this category comprise:
FMZ 2 – Special Management |  | elements of habitat that are not within the informal reserve system but
FMZ 3A - Harvesting Exclusion |  | are protected by prescriptions detailed in the IFOA, including rare non-
Forest Management Zone (FMZ) |  | commercial forest types, high conservation value old growth forest and
3B - Special Prescription |  | rainforest

Protected by prescription, which comprise those elements of habitat that are protected by regional prescription as detailed in the IFOA. They also include FMZ 3A - Harvesting Exclusion, FMZ 3B - Special Prescription where harvesting will be modified and FMZ 2 - Special Management that have not been included in the informal reserve system because of size, configuration or location. Areas are equivalent to IUCN category IV. Private land managed with investment partners has been excluded from this table.

General Management | 56,248 | Timber harvesting is permitted subject to requirements of the IFOA (where applicable) which includes habitat and feed tree retention along with species-specific conditions and exclusion zones.
FMZ 4 |  | 

Hardwood plantations | 585 | Managed as eucalypt plantation. These areas are managed principally for timber production.
FMZ 5 |  | 

Softwood plantations | 262,174 | Managed as softwood plantation. Generally authorised under the Plantation and Reafforestation Act 1999
FMZ 6 |  | 

Non forestry uses | 2,947 | Comprises areas designated for non-forestry use, usually associated with some form of infrastructure such as powerlines, gas pipelines and telecommunications facilities.
FMZ 7 |  | These areas are managed in accordance with principals of sustainable forest management. The land does not count as productive forest land.

Further assessment | 10,477 | An interim zoning of areas where field investigation is required to determine final FMZ classification.
FMZ 8 |  | 

Forestry Corporation is committed to maintaining biodiversity values within softwood plantations through:
- managing the plantation estate and surrounding native forest in line with the FMZ management principles
- using the FMZ system to inform operational plans. Where areas zoned FMZ 1, 2 or 3A are identified, prescriptions are developed that to protect the special values of the area and are added to the site-based plan for implementation in the field. Operations are monitored to ensure compliance.
- implementing the requirements of the Plantation and Reafforestation Act 1999 and associated regulation. The regulation has controls in place for managing remnant vegetation and endangered species, protecting riparian areas, ensuring that plantations are only established on previously cleared land as well as ongoing controls over ongoing plantation activities.
- maintaining a GIS data layer that spatially records the locations of threatened and vulnerable species in and around the softwood plantations estate and accessing the data when planning an operation to determine where additional protection needs to be applied. The GIS layer is maintained using data provided by the Office of Environment and Heritage and updated with information from NSW Scientific Committee and by the results of pre-harvest surveys carried out by Forestry Corporation’s Hardwood Forest Division (HFD) on a regular basis.
- completing tactical plans in spatial format to show the mosaic of age classes as well as the retained native vegetation. Doing this enables us to examine data on a landscape scale
- managing dedicated and informal reserves using approved plans.
- implementing a suite of operational controls, including due diligence, that is developed for each site and included in a site-based plan that is specific, adaptive and subject to monitoring and audit processes.
contributing to research and development programs that deliver improvements in conservation outcomes through better informed management.

implementing new information.

recognising the potential impacts of forest operations on biodiversity priorities in Forestry Corporation’s risk register.

FIRE MANAGEMENT

Forestry Corporation is committed to protecting human life, property, biodiversity and cultural values from high-intensity fire and, as one of the four fire authorities in NSW, Forestry Corporation also has legal fire management obligations under the Rural Fires Act 1997.

Forestry Corporation is one of four fire authorities under the Rural Fires Act 1997 and is subject to the coordinated fire management provisions of that act. Forestry Corporation is also a member of the NSW Bush Fire Coordinating Committee. Forestry Corporation works collaboratively with other fire agencies to:

- develop bushfire risk management and operations plans and implement programs for bushfire prevention, mitigation, preparedness, response and recovery
- respond to bushfires protect life and property and to minimise adverse impacts on social, economic and environmental values

Plantations represent a significant investment in resources. Radiata pine is not tolerant to fire and, while Southern pine (found in the Grafton Management Area) is less susceptible to fire, it has only demonstrated a tolerance for mild fire. Damage from wild fire is one of the most significant threats to the viability of Forestry Corporation’s plantation estate.

Forestry Corporation:

- uses fire under appropriate conditions as a risk reduction strategy and to promote ecosystem health, diversity and resilience in native forests
- maintains appropriate levels of fire management capability to effectively discharge its responsibilities as a sustainable forest manager and a statutory fire authority,
- meets the requirements for the construction and maintenance of fire trails in the P&R Code

In achieving this Forestry Corporation:

- makes the safety of the public and our staff and contractors the highest priority
- uses ecologically sustainable fire regimes
- protects cultural and heritage values
- is sensitive to the needs of local communities.

In executing its fire management responsibilities, Forestry Corporation:

- develops fuel management plans and fire suppression plans, which are consistent with the coordinated NSW Bush Fire Risk Management Plan
- develops regional fuel management plans that include a comparative assessment of the potential environmental impact of wildfire with and without fuel management burning
- produces annual fuel reduction plans and submit them as a map to each Bushfire Management Committee showing areas intended for fuel reduction burning in the ensuing year
- provides details of each proposed burn into the Rural Fire Service (RFS)’s fire management systems and ensure areas burnt are updated monthly
- develops a corporate fire management strategy to guide fire management planning, implementation and cooperation with other agencies wherever Forestry Corporation manages land
- prepares site-specific operational plans for each fuel reduction burning operation that specify measures to be taken to minimise adverse impacts on the environment, reduce the risk of fire escape, and monitor the impacts on the environment
- reports on fire prevention and suppression performance annually.

1 The biodiversity monitoring program for the coastal State forests of NSW is comprised of several parts including species specific monitoring and broad forest monitoring, the latter is due to be finalised with regulators during 2015-16.
PEST ANIMAL MANAGEMENT

Pest animals can have a negative impact on biodiversity, the economic values of the forest or neighbours. Pest animals can be declared noxious under the *Local Land Services Act 2013*, which obligates Forestry Corporation to act to eradicate a declared pest animal.

Cats, foxes, wild dogs, rabbits, deer, goats and pigs have been identified as pest species that may be found within softwood plantations. Other animals that may damage plantations include domestic livestock, rabbits, wallabies and brush-tailed possums.

Forestry Corporation works with Local Land Services (LLS), local government, other agencies and stakeholders to develop regional strategies to manage pest animals across the landscape.

To mitigate the impact of pest animals, Forestry Corporation:

- implements pest animal management plans that identify species of concern, their distribution, priorities for control programs and methods to be used to control them
- undertakes control work in line with the NSW Vertebrate pest control manual, which outlines the legislative, administrative and poisons and fumigants policy requirements for pest animal management as prescribed in the Pesticide Control Orders gazetted under the *Pesticides Act 1999*
- develops an annual program of work based on information from previous programs, land holders, LLS and other agencies and implement the work program applying the procedures in the pest animal management plan
- monitors activity around bait stations, baits taken and reports of predation on livestock.

WEED MANAGEMENT

Weeds can have significant impacts on:

- the productivity and management of plantations, as they may slow growth rates, hinder access to roads and impede access for fire fighting
- neighbouring properties, as they may result in economic and social impacts
- biodiversity, as they may prevent germination and regeneration of native forest canopy forming species, interrupt the lifecycle of plants, threaten habitat and threaten forest values at recreation and cultural heritage sites.

Pine wildings, while not a declared noxious species, have the potential to invade areas of native vegetation adjacent to mature plantation sites. This can have an adverse visual impact and, in some instances, compromise natural ecosystems. This issue is most prominent in drier native forest types and is controlled using a range of methods including the use of prescribed fire, physical culling, including commercial harvesting, and chemical herbicide application.

In managing weeds in softwood plantations, Forestry Corporation aims to:

- maintain the productive capacity of plantations
- manage weed populations to minimise adverse impacts on neighbours
- minimise the impact of any control activity on the environment by using an integrated approach that incorporates a combination of different methods, for example chemical and manual, and targets more than one species.

SPD aims to:

- direct its limited resources to those species and areas where the benefits of control are likely to be greatest, particularly on boundaries with private property
- manage noxious weeds under weed management plans, which identify the major weed species in each area and establish the criteria for prioritising control programs
- use integrated weed and pest management techniques, including biological controls where ecologically and economically appropriate
- develop a program for the control of competition weeds as part of the plantation establishment program
- develop an annual noxious weed control program around known weed infestations, infestations associated with forest neighbours and cooperative programs
- implement a wilding control program
- ensure staff have the relevant training when storing, transporting, handling and using agricultural chemicals
- monitor the amount of herbicide used each year
- contribute towards, and participate in, research into alternative practices such as biological control methods.
PESTS, DISEASES AND OTHER POTENTIAL RISKS

Pests and diseases can damage trees in all stages of development and affect the ability of both natural forests and plantations to meet their management objectives.

Fungal diseases can be a serious hazard to the health of radiata pine. The species is susceptible to several needlecast diseases including *Dothistroma septosporum* and *Cyclaneusma minus*. *Dothistroma* is most prevalent in plantations on the Northern Tablelands, and can cause serious defoliation and growth losses in stands up to 20 years old, especially in moist gullies or other locations with high humidity and restricted air movement. *Cyclaneusma* is more widespread but less damaging than *Dothistroma* and is most prevalent in stands 15-20 years old.

*Diplodiea sapinea* is a fungal disease that causes stem cankers, shoot dieback, dead topping or stem death. Infection begins in wounds or weakened trees and the disease is common on drought-affected or hail-damaged sites. There is a range of other fungal diseases that may significantly impact trees, for example, trees have been killed by *Phytophthora* and *Armillaria* root disease, but incidences of these are rare.

While outbreaks of insects may occur in vigorous healthy stands as well as in those that are stressed or declining, insects always have a greater impact on trees that had already exhibited sub-optimal growth. As well as impairing tree health and vigour, insects may also degrade timber. The main insect pests affecting radiata pine are the *Sirex noctilio* woodwasp and the Monterey pine aphid *Essigella californica*. Bark beetles (*Ips grandicollis*) can damage felled logs and fire damaged trees and in suitable conditions attack living trees.

Other potential risks to plantation health include:

- weather factors such as drought, wind, frost
- nutritional deficits
- damage to growing stock while harvesting
- fire (see Forest estate and timber production).

Forestry Corporation maintains or enhances the health and productivity of the forests it manages to keep them in a healthy, productive condition.

Forestry Corporation:

- uses appropriate site selection and undertakes silviculture, including thinning, fertilising and weed control as appropriate
- uses integrated pest management, for example by using appropriate site selection and silviculture in conjunction with pesticides and other methods of pest and weed control
- manages *Sirex* through an annual biological control program involving trap trees and injection with nematodes
- arranges annual health & biosecurity monitoring of plantations using DPI Forest Science
- seeks technical advice from DPI Forest Science on management of biosecurity, key pests and diseases, such as the biological control of *Essigella*
- coordinates appropriate response treatment in accordance with environmental and commercial principles through the *Softwoods Plantation Division Plantation Plant Pest Management Plan*.
- implements biosecurity measures and emergency responses in accordance with the
- maintains appropriate fire preparedness and hazard reduction burning
- adheres to standards for acceptable levels of stand damage during harvesting.
SOIL AND WATER

Soil and water resources are an integral part of the forest landscape. State forest areas form vital water catchments and forests play an important role in providing clean water and regulating water flow. Maintaining adequate vegetation cover is important in increasing water infiltration, reducing overland flow, flooding and potential for soil loss. Timber plantations provide benefits such as lower soil erosion and improved water quality to catchments and assist in reversing salinity and erosion.

WATER QUANTITY

All vegetation types impact on water resources by reducing the amount of water runoff and infiltration, and in some cases, through the direct extraction of groundwater. Plantation forestry is no exception, as regardless of species, forest canopy cover causes reduced runoff and groundwater recharge in a process known as interception. In addition, in places where the depth to the groundwater is less than six metres, plantation forests may directly extract groundwater.

While plantations use more water than pasture, the change in stream flow after reforestation or clearing is largely proportional to the catchment area affected. Research has shown it is difficult to detect an impact on water quantity when less than 20% of the catchment is plantation. In major plantation regions, plantations occupy between 1% and 6% of large catchments. See the map in Appendix 2: Softwood Plantations within NSW Catchments.

SPD mitigates some of the impacts on water quantity by establishing plantations in line with the following principles:

- Giving consideration to local government planning and the spread of plantations across the landscape, ensuring a spread of age classes is evident in a single location
- Establish plantations away from streams and in strips across the contour, to give a spread of age classes.

Forestry Corporation will continue to conserve soil and protect water values by implementing the collective provisions of:

- The Plantation and Reafforestation (Code) Regulation
- Forestry Corporation’s Water Management Strategy, which outlines current water monitoring strategies, drawing on the findings of water research.
- Best practices provisions and Standard Operating Procedures.

SOIL AND WATER QUALITY

Forestry operations such as plantation establishment, timber harvesting and haulage, road construction and maintenance have the potential to impact soil and water values through compaction and exposing soil to the erosive forces of rainfall, creating the potential for increased runoff and erosion and sediment delivery to the stream network.

High intensity fires also have the potential to remove large quantities of nutrients from the landscape, destroy living organisms, consume organic matter in surface soils and impact soil structure and chemical properties. Increased overland flows after high intensity fire cause accelerated erosion and deliver large quantities of ash and sediment to the stream network which then dramatically changes the aquatic environments of forest streams.

Fire removes nutrients from the soil, as well as the vegetation cover, while high intensity fires can impact soil structure as well as chemical properties. Increased overland flows after a high intensity fire cause accelerated erosion, and can result in large quantities of ash and sediment in forest streams.

In addition to operations located in the forest, the nursery at Tumut (Blowering) has been designed as a nil flow-off site. Water is sourced from permanent and casual licenses from the Murrumbidgee Irrigation Area river supply. The nursery has been converted to container crop growing with boom irrigation, which results in minimal excess watershed. The transition from broadscale ‘bare rooted’ growing of *Pinus radiata* to a containerized nursery has resulted in a significant improvement in water use (a reduction of over 80% from 2002-04 to 2012-14). There are no current plans for nursery expansion, and so the current sustainable water use will continue into the foreseeable future.

Forestry Corporation will continue to conserve soil and protect water values by implementing the collective provisions of:

- the Plantation and Reafforestation (Code) Regulation
- Forestry Corporation’s Water Management Strategy
- best practices provisions and procedures related to protection of soil and water.
To reduce soil erosion and minimise water pollution during forestry operations Forestry Corporation implements a range of management practices including:

- use of riparian buffer strips to reduce connectivity between areas of disturbance and the stream network
- siting and design of roads and road crossings to minimise sediment input to the stream network
- seasonality, slope and soil type restrictions on harvesting and road construction
- minimising soil disturbance, and
- conducting hazard reduction burns to reduce the risk of high intensity fires.

In addition Forestry Corporation will use adaptive management principles to continuously improve planning and field implementation and will:

- develop Strategic Road Management Plans incorporating environmental risk assessment and schedules that set priorities for road work
- incorporate and update soil regolith data into operational planning (see Forest Estate and Timber Production)
- maintain up to date mapping that identifies areas of high erosion risk and potential mass movement and implement site specific prescriptions in these areas
- monitor and report operational implementation of soil conservation and water quality maintenance measures (Compliance monitoring program)
- seek soil conservationist expert advice on field practice
- continue collecting data to allow ongoing research into the effects of plantations on water quality (Red Hill)
- train and accredit where necessary, staff and contractors with operational and supervisory roles in road works and harvesting (see Our staff)
- provide copies of relevant best practice material to contractors and staff
- disperse timber harvesting across catchments to minimise possible local effects on water quality and quantity
- manage forest fuels to minimise potentially catastrophic wildfire damage (see Our Environment).
- undertake water monitoring where aerial application of pesticides is conducted
- apply additional protective prescriptions applied where required.
CARBON BALANCE

Forestry Corporation recognises the important role forests play in the carbon cycle. Carbon dioxide (CO\textsubscript{2}) is absorbed by growing trees through photosynthesis. This carbon is stored in the tree for the life of the timber, even after it has been harvested and processed into a timber product.

The benefit to the environment of turning forest timber into products is that if trees are left to decompose in the forest, the carbon is returned to the atmosphere. In addition, the younger trees that become established in their place absorb carbon faster since they grow faster than older trees.

The combined effect of net sequestration of carbon in sustainably managed State forests, combined with the carbon stored in the wood products they produce is equivalent to taking more than 230,000 cars a year off the road.

CONTRIBUTION TO CARBON CYCLES

In the sustainable management of forests for timber and other products, Forestry Corporation will maintain the carbon cycle and contribute to Australia’s net emission reduction program by:

- enabling captured carbon to be stored long term in harvested timber products
- providing for further net atmospheric carbon capture in the growth of vegetation following timber harvest
- reducing the potential for large intense wildfires, which generate greenhouse gases
- maintaining or improving the productive capacity of the native and plantation forest estate, as the level of carbon sequestration is proportional to the vigor of the trees
- seeking opportunities for the potential for harvesting waste and residues to be used as bio-fuels.

REPORTING ON CARBON

Forestry Corporation actively calculates and reports annually on the amount of carbon that is sequestered and stored in the native forest estate. This data is publicly available and is contained in the annual Sustainability Supplement published on our website.

REDUCING EMISSIONS

Forestry Corporation aims to reduce carbon emissions by increasing the efficiency of its operations. Forestry Corporation actively works to reduce the amount of carbon emitted by plant, vehicles and burning, by using the most efficient operational practices available.

Forestry Corporation minimises its use of fossil fuels in two key ways:

- by ensuring competitive tender processes are used to find the most efficient means of timber extraction
- by using scheduling optimisers to minimise distances between harvest areas and customers.

The use of vehicles for the transport of staff and equipment is managed to minimise the use of fuel. Vehicle numbers and efficiency are both factors that are considered in the management of the light vehicle fleet. Forestry Corporation supports the NSW Government’s Cleaner Vehicles Action Plan which seeks to improve the environmental performance of the government vehicle fleet by encouraging use of smaller, more fuel efficient vehicles.

CLIMATE CHANGE

Forestry Corporation is part of an Inter-Agency Steering Group (IASG) established at the direction of the Minister for the Environment. The group’s purpose is to provide oversight for the Assessing NSW Government Agencies Preparedness for Climate Risks project.

This includes shaping and endorsing an appropriate process to assess current actions by NSW Government agencies to identify and manage climate change risk to agency assets, agency infrastructure and agency service provision.
OUR COMMUNITY

As a State Owned Corporation Forestry Corporation is charged having regard to the interest of the community in which it operates and contributing towards regional development and decentralisation. With State forests throughout NSW, Forestry Corporation is part of the NSW community. The estate shares boundaries with neighbours and communities, includes thousands of kilometres of public roads and attracts visitors undertaking an array of recreational pursuits.

NEIGHBOUR AND OTHER STAKEHOLDER RELATIONS

Forestry Corporation’s stakeholders include, but are not limited to, neighbours, local communities, customers, contractors, forest users, regulators, government agencies, industry and employee groups, Aboriginals groups and communities and non-government organisations. Forestry Corporation sought and considered stakeholder feedback in the development of this FMP.

Forestry Corporation acknowledges the positive contribution that stakeholders make to forest management. Forestry Corporation’s stakeholders include, but are not limited to, neighbours, local communities, customers, contractors, forest users, regulators, government agencies, industry and employee groups, Aboriginal groups and communities, and non-government organisations.

Forestry Corporation is committed to facilitating and encouraging meaningful engagement of stakeholders by providing opportunities for stakeholders to make their views known and by considering and incorporating these views into planning processes.

STAKEHOLDER ENGAGEMENT PLANS

In general, Forestry Corporation engages with stakeholders in three key ways:

- during the development of strategic FMPs
- around specific issues that are of interest to a stakeholder group
- day-to-day, as an integral part of site-specific operational planning.

Forestry Corporation:

- identifies relevant stakeholders affected by, and interested in, its day-to-day operations and take steps to accommodate issues and concerns raised through the process of planning forestry activity
- makes information available on its website about the range of activities we undertake, including invitations to participate in development and review of the FMP
- provides appropriate training to staff to ensure they maintain competency in stakeholder engagement
- develops specific stakeholder engagement plans to address issues that are priorities for Forestry Corporation or stakeholder groups
- provides a process for dealing with stakeholder complaints in a thorough and timely manner.

AT A STRATEGIC LEVEL

An engagement strategy was prepared to invite feedback on this FMP from stakeholders. The draft FMP was placed on public exhibition, comments and submissions were reviewed and stakeholders advised of how their input had been considered. To ensure ongoing transparency, Forestry Corporation:

- reviews the content of this plan and make minor amendments from time to time. Any such amendments will be advertised on the Forestry Corporation website
- conducts formal, five yearly reviews of this plan, inviting input from stakeholders.

AT A TACTICAL, ISSUES-BASED, LEVEL

Generally, Forestry Corporation focuses on engaging with stakeholders around forest management operations and land management activities.

Forestry Corporation develops strategies for engagement with specific stakeholder groups or around specific issues of interest to stakeholders and important to the business.
DAY-TO-DAY OPERATIONAL PROCESSES
Stakeholders affected by, or interested in, specific forest operations are identified during the due diligence process in the planning phase. Engagement with stakeholders around day-to-day issues may range from providing information to seeking feedback and consulting on outcomes. This engagement is carried out using a range of tools, which commonly include letters, advertising and notifications in local media and face-to-face meetings.

COMPLAINTS
Forestry Corporation endeavours to resolve all complaints at the earliest opportunity. Forestry Corporation registers complaints and other issues raised by stakeholders with a view to resolving the complaint and using the feedback to inform our risk management and improve our processes.

Information about making a formal complaint and our procedure for dealing with formal complaints is provided on our website.
SERVICES AND FACILITIES
People can experience and appreciate the forest environment and participate in a wide-range of nature based recreation and tourism activities.

ECONOMIC DEVELOPMENT
Forestry Corporation aims to provide opportunities for the community to take advantage of the potential State forests offer to generate social and economic benefit, particularly within regional communities. Commercial use of forests and forest products is a significant contributor to regional economies.

State forests support a range of commercial enterprises including those involved in harvesting and processing timber and other forest products and materials as well as enterprises using State forests for grazing, apiary, tourism, special events and hosting infrastructure such as telecommunications towers. In line with its objectives to run a successful business and maximise the value of the State’s investment, Forestry Corporation seeks fair market value for the goods and services it provides in support of these commercial enterprises.

COMMUNITY SERVICE OBLIGATION
Forestry Corporation provides a number of community services on behalf of the NSW Government. These are funded by Community Service Obligation (CSO) funding of approximately $15 million per year and managed through a service level agreement between Forestry Corporation and the NSW DPI. The primary services funded by CSO include:

- road maintenance for community use
- community fire fighting and prevention
- non-commercial forest management
- recreation and tourism
- government relations and non-commercial community engagement
- DPI research services.

RECREATION AND TOURISM
State forests are available for free public use for a wide range of recreational pursuits including camping, bushwalking, mountain bike riding, trail bike and four-wheel-driving.

Across the state, over 100 recreation areas are available for free public use. This includes camping and picnic areas, lookouts and walking tracks. The Recreation and Tourism Policy, which is available on our website, outlines our approach to managing public use of State forests.

A key tenet of Forestry Corporation’s management of recreation and tourism is to provide safe and enjoyable use by the community of the forest-based recreational opportunities within State forests. Forest permits are used to facilitate formal recreation activities on State forests such as events and tourism infrastructure. Forest permits are issued to both not-for-profit groups and commercial entities and can be issued for a single day or, in some instances, for longer periods of time. Examples of activities undertaken under Forest Permit include mountain bike races, car rallies, large youth camps and medium-term occupation of forest sites for operating commercial recreation-based businesses like accommodation lodges or adventure tourism activities.

Forest-based tourism is not a significant activity in SPD. However, a number of softwood forests are popular recreation destinations and the division does facilitate this use. Issues related to commercial use of State forests are managed in line with the Recreation and Tourism Policy and corporate processes.
FOREST PERMITS
State forests offer land rental opportunities for activities such as bee keeping (apiary), grazing of domestic stock and commercial tourism ventures. Public infrastructure associated with communication, electricity distribution, and local government services are also located on State forests.

GRAZING
Access to State forests for grazing is an opportunity for local communities and assists with fire hazard reduction. Grazing of domestic stock is limited to areas with a grassy understory and reliable water source and may be restricted at times due to operational considerations.

Once an area is planted, it will not be made available for grazing until the trees are approximately three years of age, which is when they are large enough to withstand grazing pressure and physical damage from rubbing. Following canopy closure, at about ten years, there is limited opportunity for grazing.

Grazing must comply with the requirements of the Local Land Services Act 2013, particularly in relation to stock identification and management of notifiable diseases. Permits and leases are also subject to local government and Local Land Services rates and levies. In addition, under the P&R Code retained areas of native vegetation within the authorized plantation area must be managed to conserve biodiversity and ecological integrity.

Grazing on State forests is managed through the issue of Forest permits and leases. Opportunities are put to tender and successful applicants are determined using competitive pricing. Grazing is limited to Forest Management Zones (FMZ) 3B, 4, 5, 6 and 7.

APIARY
Beekeepers depend on native flora for about 80 per cent of their production.

Forestry Corporation issues beekeeping permits for State forests and Crown Timber land over areas of land known as ranges. Permits are issued which allow apiarists to set down hives in a defined area, unencumbered by other apiary sites. In the year ended 30 June 2014, Forestry Corporation made almost 4,000 apiculture sites available, with permit areas generally 1.5 square kilometres in size and usually located in native forest.

Ranges are situated in FMZ 3B, 4, 5, 6 and 7. Other FMZ areas (1, 2 and 3A) that have historically been used by apiarists may continue with approval of the relevant manager.

FOREST MATERIALS AND PRODUCTS
In addition to timber, a range of other forest products are available and extracted from the forest each year. These include but are not limited to hard rock, sand, gravel, firewood and charcoal.

Deposits of hard rock, sand and gravel resources are managed consistent with the provisions of the Forestry Act 2012, Environmental Planning and Assessment Act 1979 and the Mining Act 1992.

Forest Materials Licences can be issued to authorise the extraction of these resources.

Permits are issued for firewood collection in suitable areas, which is generally those that have been recently harvested. Conditions apply to these permits to ensure the activity is consistent with sustainable forest management.

There is limited extraction of forest products such as craft wood, firewood, fence posts and seed from forests managed by SPD and these products represent less than one per cent of annual revenue.
CULTURAL VALUES

ABORIGINAL CULTURAL HERITAGE

Forestry Corporation is committed to protecting and managing Aboriginal cultural heritage in cooperation with Aboriginal communities and in accordance with legislative requirements. Aboriginal cultural heritage includes physical and spiritual sites, places, objects, stories, oral histories, flora, fauna and documents relating to Aboriginal life before and after European contact.

Forestry Corporation manages cultural heritage values on State forest under the provisions of the:

- National Parks and Wildlife Act 1974, which provides statutory protection for all Aboriginal objects and Aboriginal places
- Plantations and Reafforestation (Code) Regulation which applies to authorised plantations
- Forestry Corporation’s Operational Guidelines for Aboriginal Cultural Heritage Management (A Due Diligence Code of Practice).

The Operational Guidelines for Aboriginal Cultural Heritage Management (A Due Diligence Code of Practice), describes:

- the types of activities Forestry Corporation undertakes, and their potential impacts
- the types of Aboriginal cultural heritage items that may be found on State forest and should be considered during operations
- the cultural heritage assessment process
- the consultative framework Forestry Corporation uses
- operational guidelines, including staff training requirements
- data management requirements.

In addition, Forestry Corporation will:

- explore opportunities to work with Aboriginal people
- respect confidentiality about the location and details of Aboriginal sites and cultural knowledge shared by Aboriginal communities
- refer inquiries from third parties on cultural heritage or sites to local Aboriginal community representatives.

ABORIGINAL JOINT MANAGEMENT OPTIONS

INDIGENOUS LAND USE AGREEMENTS

Indigenous Land Use Agreements (ILUA) are whole-of-government agreements with Aboriginal groups that have demonstrated credible evidence of native title and had a native title application determined by the Federal court. They are legally binding agreements about the management of public land in the area covered by the native title claim. An ILUA may recognise native title rights, enable development to take place and address how that development may occur. If the ILUA is registered on the Register of Indigenous Land Use Agreements, it binds all parties and all native title holders to the terms of the agreement.

Current ILUAs include:

- Gundungurra, covering State forests and other Crown Land around Moss Vale and Lithgow
- Githabul, which covers State forests and other Crown Land on the north coast.

The native title rights of the Bandjalang people have been recognised by the Federal Court for land including State forests near Casino in northern NSW. Forestry Corporation is working with the Bandjalang people to help promote culture and reconciliation on State forests covered by this determination. An ILUA is being negotiated by the NSW Department of Trade and Investment on behalf of the NSW Government. Forestry Corporation is participating in those negotiations in relation to joint management of State forests and the protection of cultural heritage.
PARTNERSHIPS AND MEMORANDUMS OF UNDERSTANDING

There are a number of approaches joint management can take, but in most cases Aboriginal people who have a cultural association with State forests either gain responsibility for forest management or contribute advice to Forestry Corporation on its management of the forests.

If an ILUA is not in place, other joint management arrangements may be entered into whereby Forestry Corporation and the local Aboriginal community may work together on a range of issues including protection of high significance sites, providing access to forests and involving Aboriginal people in management decisions. These agreements may take the form of an MOU between Forestry Corporation and Aboriginal communities.

Forestry Corporation is committed to establishing meaningful partnerships with Aboriginal communities and will be pursuing opportunities to establish MOUs in the future.

INFORMATION MANAGEMENT

The Aboriginal Heritage Information Management System (AHIMS) is maintained by the Office of the Environment and Heritage (OEH). Forestry Corporation and OEH have an MOU for the supply of information relevant to State forests, which includes protocols for handling, distribution and use of the database information within the organisation.

Forestry Corporation is required under section 89A of the National Parks and Wildlife Act 1974 to provide OEH with information about new Aboriginal heritage sites.

NON-ABORIGINAL CULTURAL HERITAGE

Non-Aboriginal heritage items and places are those with heritage significance that the community wants to keep for future generations and are subject to the provisions of the Heritage Act 1977. Forestry Corporation’s Guidelines for Non-Aboriginal Cultural Heritage Management ensure that we:

- engage with relevant stakeholders in management of sites of community interest
- maintain records and spatial datasets of non-Aboriginal heritage items, including in the FMZ system, and consult them during planning processes
- apply appropriate site specific prescriptions and protection when undertaking forest activities
- maintain the State Heritage Inventory database and link it to spatial representation in Forestry Corporation’s Geographic Information System (GIS)
- ensure staff involved in non-Aboriginal heritage management are appropriately trained and competent
- develop management plans for sites where necessary under the Heritage Act 1977
- monitor adherence to guidelines and prescriptions during operational implementation
- cease operations in the area if a site is uncovered while the operation is in progress until appropriate assessment and protection measures can be determined
- use GIS to manage site-specific non-Aboriginal cultural heritage information.

1 The Forest Agreement identifies the areas that Forests NSW should address to ensure greater Aboriginal involvement in management of Aboriginal culture and natural resources.
OUR STAFF

Forestry Corporation employs approximately 580 full time equivalent staff across the State and engaged a considerable number of contractors on its operations. These staff are integral to implementing the FMP and managing the forest estate sustainably.

HEALTH AND SAFETY

Forestry Corporation’s goal is to provide a safe place to work for staff and other people who are affected or impacted by our activities. Our health and safety policy expresses the corporation’s commitment to safety. Specifically, Forestry Corporation is committed to taking a proactive risk management approach to work activities in consultation with staff and complying with the *NSW WHS Act 2011*, *NSW WHS Regulations 2011* and all other relevant statutory requirements to safeguard the health and safety of staff, contractors and the public in all our activities.

To help achieve these aims, Forestry Corporation maintains a Work Health and Safety Management System (WHSMS) that closely reflects the business risk profile and is aligned to Australian Standard 4801:2001 Occupational Health and Safety Management Systems. The WHSMS contains elements relating to:

- policy
- planning, including how divisions will plan for safety
- implementation, including procedures relating to specific hazards, risk management, training and document control to assist staff in safely carrying out their roles
- measurement and evaluation, including procedures relating to incident reporting and auditing and measurable objectives and targets
- system review, including how we will assess and address safety system performance.

Forestry Corporation has an online system enabling reporting of hazards, near misses and incidents to ensure the risk associated with them is minimised and any improvements identified are incorporated into the system.

PUBLIC SAFETY

The safety of all people who may be impacted by Forestry Corporation’s operations is paramount. This includes members of the public as well as contractors and is underpinned by the incident investigation and corrective action process.

Areas in which forest operations, such as timber harvesting, are underway are clearly signposted to ensure members of the public are aware of the risks and informed on what they should and should not do. Contractors and Forestry Corporation staff have clear procedures to enable communication to monitor entry.

Forestry Corporation imposes speed limits and monitors load restrictions on log trucks and uses signage on forest roads to indicate areas where log truck traffic may be high. Forestry Corporation routinely undertakes consultation with local communities as part of the planning process where log truck traffic is expected to increase or be of concern and a dedicated phone number is also advertised on the back of haulage trucks in some areas of the state to encourage members of the public to report poor or exemplary driver behaviour or hazards. Calls are followed up with the haulage contractor and caller to identify appropriate corrective action.

Authorised recreational hunting is permitted in some State forests. Forestry Corporation has completed a risk assessment of hunting on State forests which is available on our website, but hunting on State forests is regulated and licensed by the DPI Game Licensing Unit.
**ORGANISATIONAL DEVELOPMENT**

Forestry Corporation strives to cultivate a high performance culture and provides staff with access to relevant training and development opportunities that meet business needs and enhance organisational capability, in accordance with our Training and Development Policy.

Forestry Corporation has a performance planning framework, which provides a platform for identifying and implementing development opportunities for staff throughout the business and rewards and recognition are incorporated into management practices to acknowledge employees for outstanding contributions in key business areas.

Forestry Corporation is committed to ensuring staff and contractors have the appropriate training, education or experience to minimise the impact of their work on the environment and we demonstrate industry best practice by focusing on regular up-skilling and re-assessment of core technical skills against units of national competence. Procedures are in place to regularly review staff competencies and each division prepares annual training plans to ensure competencies are maintained.

In recognition of the specific requirements associated with fire management, a dedicated policy is in place to ensure fire training currency and competency. Contractors to Forestry Corporation are responsible for ensuring their staff are competent and appropriately skilled or qualified to carry out the work required. Forestry Corporation contributes to industry skills development by requiring contractors working on our operations to meet minimum competency standards and by actively participating in industry forums to share knowledge and encourage capacity building across the sector.
FAIR AND EQUITABLE WORKPLACE

Forestry Corporation complies with the provisions of the *Fair Work Act 2009* and the *Fair Work Regulations 2009*. Most staff are employed under an enterprise agreement, which has been negotiated with relevant unions and other parties within this legislative framework and sets out employment conditions and remuneration arrangements and provides mechanisms for engagement with unions. Some senior staff are employed under individual contract arrangements, which comply with the relevant legislation.

The corporation is committed to fostering an inclusive and collaborative workplace culture through implementation of the following principles:

- providing equal opportunities by ensuring appointments to positions are based on capability, performance and potential
- maintaining workplaces free from unlawful harassment, bullying and victimisation
- encouraging a workplace culture that displays fair practices and behaviours.

Equal employment opportunity planning is also dealt with in State legislation. Workforce diversity obligations are established under section 63 of the *Government Sector Employment Act 2013*.

Forestry Corporation has the following policies to inform workplace strategies and guide management of staff:

- Code of Conduct
- Equity and Diversity Policy
- Managing Unsatisfactory Performance and Misconduct Policy
- Bullying, Harassment and Discrimination Policy
- Managing Excess Employees Policy.

A range of other policies inform staff of the expected behaviours around financial management, use of alcohol and drugs and other workplace issues and outline the organisation’s approach to issues like compensation for loss or damage of personal property of employees to ensure a fair and equitable approach.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>AHIMS</td>
<td>Aboriginal Heritage Information Management System</td>
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<tr>
<td>AS4708:2013</td>
<td>Australian Standard for Sustainable Forest Management</td>
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<td>AS/NZS ISO 14001:2004</td>
<td>Environmental Management System</td>
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<td>BRIMS</td>
<td>Bushfire Risk Information Management System</td>
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<td>CAR</td>
<td>Comprehensive Adequate and Representative</td>
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<td>CRA</td>
<td>Comprehensive Regional Assessment</td>
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<td>CSO</td>
<td>Community Service Obligations</td>
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<td>DFA</td>
<td>Defined Forest Area</td>
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<td>DPI</td>
<td>Department of Primary Industries</td>
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<td>ESFM</td>
<td>Ecologically Sustainable Forest Management</td>
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<td>FA</td>
<td>Forest Agreements</td>
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<td>FMP</td>
<td>Forest Management Plan</td>
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<td>Forest Management System</td>
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<td>FMZ</td>
<td>Forest Management Zoning</td>
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<td>Forestry Corporation</td>
<td>Forestry Corporation of NSW</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<td>HFD</td>
<td>Hardwood Forest Division</td>
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<td>IASG</td>
<td>Inter-Agency Steering Group</td>
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<td>IFOA</td>
<td>Integrated Forestry Operations Approvals</td>
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<td>ILUA</td>
<td>Indigenous Land Use Agreement</td>
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<td>LiDAR</td>
<td>Light Detection and Ranging</td>
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<td>LLS</td>
<td>Local Land Service</td>
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<td>JANIS</td>
<td>Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-Committee</td>
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<td>NFPS</td>
<td>National Forest Policy Statement</td>
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<tr>
<td>MAI</td>
<td>Mean Annual Increment</td>
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<td>MOU</td>
<td>Memorandum of Understanding</td>
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<td>OEH</td>
<td>Office of the Environment and Heritage</td>
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<tr>
<td>PEFC</td>
<td>Programme for the Endorsement of Forest Certification</td>
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<tr>
<td>P&amp;R code</td>
<td>Plantations and Reafforestation Code</td>
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<tr>
<td>PCH</td>
<td><em>Pinus caribaea</em> variation <em>hondurensis</em></td>
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<tr>
<td>PEE</td>
<td><em>Pinus elliottii</em> variation <em>elliottii</em></td>
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<td>RFA</td>
<td>Regional Forest Agreement</td>
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<td>Rural Fire Service</td>
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<td>Social Environmental and Economic Data Storage</td>
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<td>Softwood Plantations Division</td>
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<td>SOC</td>
<td>State Owned Corporation</td>
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<td>WHSMS</td>
<td>Work Health and Safety Management System</td>
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