



**ACT**  
Government



ACT Government



# ACT Parks and Conservation Service Plantation Management Plan 2026-2030



## Acknowledgement of Country

The City and Environment Directorate acknowledges the Ngunnawal people as traditional custodians of the ACT and recognise any other people or families with connection to the lands of the ACT and region.

We respect the Aboriginal and Torres Strait Islander people, particularly our Aboriginal and Torres Strait Islander staff, and their continuing culture and contribution they make to the Canberra region and the life of our city.

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## Foreword

Plantation management in the ACT has a long and varied history. The first plantings occurred under the direction of the Afforestation Branch formed in 1913. Their objective was to ‘protect the beauty of the landscape’ on degraded farmland. The Yarralumla Nursery opened in 1915, and several arboretums were established for the trialling of different species. Planting commenced at Mount Stromlo for erosion control during the same year and *Pinus radiata* was one of the first species planted, and it performed well in Canberra’s climate.

ACT Forests Branch formed in 1926 and continued planting with a twofold management objective: improving the Cotter reservoir to reduce erosion and enhance water quality; and providing timber to meet the growing demand for housing. An annual plantation establishment program commenced, and forestry enjoyed the support of the community as Canberra continued to grow. During the 1960s the success of previous planting programs resulted in ACT Forests developing plans to increase the size of the estate across the ACT and Jervis Bay. However, with the declaration of several formal Flora Reserves and National Parks, planned levels of plantation establishment never eventuated.

In 1989 ACT self-government commenced, ending the long history of ACT plantation management by the Commonwealth. At the time ACT Forests maintained management responsibility of a 26,000-hectare estate that included both plantations and native forests. ACT Forests was restructured in the early 2000s to ensure a sustainable future and financial independence. In 2003 bushfires burnt through two thirds of the ACT and destroyed 10,500 hectares of plantations. Kowen Forest was the only large plantation area unaffected. A review of all land management agencies in the ACT followed, and the Government combined the two largest rural land management agencies – ACT Forests and ACT Parks and Conservation Service (PCS).

In 2006, ACT Forests and PCS were brought together forming the Parks, Conservation and Lands division of the new Department of Territory and Municipal Services. Today, the Parks and Conservation Service is in the unique position of being a single Government land management agency with responsibility for all rural land tenures across one jurisdiction. These tenures include national parks, nature reserves, rural lands and pine plantations. This represents an exciting and challenging opportunity to balance society’s needs for conservation, farming and recreation with the economic values and need for producing timber.

In recognition of this opportunity, PCS Forest Management staff identified the need for a Plantation Management Plan (PMP). A planning workshop was held in April 2017 and attended by key PCS staff. Future management intent of specific plantation areas was discussed and outcomes from the workshop informed that plan. However, the PMP 2017-2022 is now outdated and required revision to reflect current priorities and challenges. To initiate this process, internal workshops involving PCS staff and other relevant sections with an interest in pine plantations were held in January and February 2026.

This Plan supports a cooperative and strategic approach to plantation management across all PCS staff, including Senior Management, Foresters, and District Area Managers. Everyone is responsible for its implementation and achieving its objectives. With stronger understanding, communication, and collaboration, ACT plantations can continue delivering sustainable forest plantation management. The Plan’s revision reflects the achievement of Forest Stewardship Council (FSC) certification in December 2023, highlighting the need to balance timber production with ecological and socio-cultural values.

March 2026

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## Introduction

The management of ACT pine plantations has evolved over more than a century, shaped by both historical developments and major events. ACT Forests was established in 1915 to manage a multiple-use forest in the Lower Cotter Catchment, supporting the local timber industry, recreational opportunities, and water protection. Much of the forest was planted on degraded pasture land previously cleared for agriculture, which had become overrun by weeds and rabbits.

By 1989, following the commencement of ACT self-government, ACT Forests was tasked with achieving both financial and environmental sustainability. This prompted a major operational review, resulting in a significant restructuring of plantation management. Staff levels were reduced, contractors engaged, and new timber markets established, successfully aligning operations with economic and environmental objectives.

A second, more significant event occurred in January 2003, when the Canberra bushfires killed four people, destroyed around 500 homes, burnt through two-thirds of ACT bushland, and damaged 10,500 hectares of ACT pine plantations, leaving only Kowen Forest in the east untouched. Following the fires, burnt plantations were cleared, and some areas were replanted with pine, prioritising soil stabilisation and water quality protection. Plantation boundaries were also revised, with some areas converted to native vegetation, particularly on steep terrain where enhanced environmental buffers were required.

Subsequently, a review of land management led to the consolidation of ACT Parks and Conservation Service (PCS) and ACT Forests into one agency from 1 July 2006 forward. Initially called Parks, Conservation and Lands its name changed back to ACT PCS about a decade later. PCS recognises plantations as a sustainable and renewable resource. Plantations provide an independent revenue source to the ACT Government while balancing society's need for timber products, recreational opportunities, and native forest conservation. By maintaining plantations, the pressure on native forests is reduced, ensuring that high-impact recreational activities and timber harvesting do not compromise the ecological integrity of natural areas. Today, the ACT's plantations are managed by the Forest Management section within PCS.

This Plantation Management Plan (PMP) builds on this history, providing a framework to sustainably manage ACT plantations, integrating lessons learned from past disturbances, and supporting long-term environmental, economic, and social outcomes.

## ACT plantation management policy

ACT plantations are managed to ensure environmental, social, cultural heritage and water values are continuously improved with land management costs offset through the sale of timber products. Plantation management recognises and protects Indigenous cultural heritage values, ensuring they are understood and embedded in all aspects of planning and operations.

## Legal and planning framework

The key Federal and Territory legislation allowing plantation forestry in the ACT is summarised below. All other legislation is detailed in Appendix 2.

The **National Capital Plan** is the strategic plan for Canberra and the Territory established in accordance with Section 10 of the **Australian Capital Territory (Planning and Land Management) Act 1988** and administered by the Australian Government. It has a single statutory object: *... 'to ensure that Canberra and the Territory are planned and developed in accordance with their national significance'*.

The **Planning Act 2023**, administered by the ACT Government, is the legal foundation for land use and development in the ACT and allows for the **Territory Plan 2023**. The Territory Plan provides the statutory framework for development and conservation of land in the ACT. The object of the Territory Plan is *'to ensure, in a manner not inconsistent with the National Capital Plan, the planning and development of the Territory to provide the people of the Territory with an attractive, safe and efficient environment in which to live and work and have their recreation'*.

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The **Planning (Exempt Development) Regulation 2023** includes provisions that exempt plantation forestry operations from Development Approval where they are conducted within an existing plantation identified in the Territory Plan.

The **Nature Conservation Act 2014** establishes a formal process for the identification and protection of threatened and non-threatened species, and ecological communities. The Act also requires plans of management where the Territory Plan has identified public land. The Act has been reviewed and updated in 2025.

The **Biosecurity Act 2023** and the **Biosecurity Legislation Amendment Bill 2024** are the main legislative frameworks governing biosecurity in the ACT. These laws aim to modernise the management of biosecurity risks, ensuring a flexible and effective system to protect the environment, economy, industry and community from pests and diseases, and allow the community to identify and manage biosecurity risks. They also include reporting requirements, prohibitions on dealing with biosecurity matters, and emergency response procedures.

### ACT planning

The National Capital Plan identifies and manages the development of Designated Areas of the Territory. Designated Areas are those parcels of land that are identified as having special characteristics in contributing to the setting and role of the ACT as the seat of government for Australia. The National Capital Authority retains responsibility for planning, design and development control within Designated Areas.

The ACT Government is responsible for the Territory Plan. The Territory Plan applies to land use and development in areas not identified as Designated Areas. Within the framework of the National Capital Plan, the Territory Plan guides the day-to-day planning and development of Canberra and the Territory. Most PCS plantations are not in a Designated Area. Isaacs Ridge, Majura Pines and Stromlo Pines are all PCS plantations in Designated Areas.

The Territory Plan provides a set of desired policy outcomes to be achieved for the Non-Urban District overall, as well as policy outcomes specific to each of the five Non-Urban Zones: NUZ1 Broadacre Zone; NUZ2 Rural Zone; NUZ3 Hills; Ridges and Buffer Zone; NUZ4 River Corridor Zone; NUZ5 Mountains and Bushland Zone. PCS manages plantations in each of these Non-Urban Zones except for the River Corridor Zone. Common to all Non-Urban Zones are objectives to protect ACT's water supply, natural heritage and biodiversity. The desired policy outcomes to be achieved for the Non-Urban District also include:

- Provide for the productive and sustainable use of land for agriculture including livestock grazing and plantation forestry.
- Provide for other uses which are compatible with the use of the land for agriculture.

The District Policies of the Territory Plan specify locations where plantation forestry is permitted as an additional assessable development. Plantation forestry is not listed as a permissible land use in the Non-Urban Zones Policy and is therefore prohibited outside of these existing plantation areas identified in the District Policy. This allows for management of existing plantations but prevents the establishment of new areas without a variation to the District Policies of the Territory Plan.

Land management in the ACT is also guided by strategies and management plans. These include the ACT Water Strategy, ACT Biosecurity Strategy, ACT Pest Animal Management Strategy, Strategic Bushfire Management Plan, ACT Nature Conservation Strategy and action plans for threatened species and ecological communities. These are summarised in Appendix 2 and are to be read in conjunction with this Plan.

### Environmental Authorisations

The Environmental Protection Authority (EPA) issues an Authorisation Number 0288 for forestry operations in the ACT, includes all aspects of site preparation, planting, maintaining and timber harvesting. Plantations included within Authorisation No. 0288 are identified in Part D10 – Non-Urban District Policy of the Territory Plan. The Authorisation requires PCS to maintain an Environmental Management Plan (EMP) for plantation management. The EMP identifies high risk activities and lists controls to limit the potential of environmental harm.

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PCS Forest Management is required to monitor its activities and report on any environmental non-compliance against listed conditions. A simple recording sheet is utilised for this<sup>1</sup>. Additionally, the PCS Forest Management Director and/or Assistant Directors/Managers are listed in the Authorisation to speak on behalf of the Authorisation holder; and provide information or documentation required by the EPA under the Authorisation. The EPA conducts an independent audit of plantation management activities to confirm compliance prior to renewal of the Authorisation. Any corrective actions as a result of this audit are implemented.

In addition to Authorisation No. 0288, PCS Forest Management is also required to comply with three other Environmental Authorisations that relate to plantation operations. These include Authorisations for:

- Motor Racing Events – Authorisation Number 0002
- Commercial Use for Agricultural and Veterinary Chemicals – Authorisation Number 0011
- Hazard Reduction Burning – Authorisation Number 0412

PCS Forest Management collaborates closely with other sections under PCS – such as Fire Management Unit – to ensure full compliance with Authorisations 0011 and 0412. Each Authorisation has its own conditions, operational controls, and reporting requirements to ensure activities are undertaken safely and in a manner that minimises environmental impacts. PCS Forest Management must ensure that relevant staff are aware of these obligations and that all associated activities are planned, implemented, and monitored in accordance with the EPA’s expectations. Together, these Authorisations form a comprehensive regulatory framework that supports environmentally responsible management of the ACT’s plantation estate.

### **Commitment to ethical and legal standards**

The PCS Forest Management section is committed to adhering to the **Public Sector Management Act 1994** and the **Public Sector Management Standards 2016**, with a focus on anti-corruption and anti-bribery efforts. This commitment aligns with our goal of Forest Stewardship Council (FSC) Forest Management Certification. PCS Forest Management upholds high ethical standards, promotes transparency and actively prevents corruption and bribery in our operations, reinforcing the organisation’s dedication to responsible forest management. Additionally, the PCS Forest Management section understands its obligations under the **Discrimination Act 1991** and the **Work Health and Safety Act 2011** regarding workers’ rights, workplace health and safety, equal treatment and living wages.

### **Continuous improvement**

The PCS Forest Management section works within the City and Environment Directorate (CED). A key area for CED is to demonstrate leadership, innovation and accountability by instilling a Directorate-wide culture of continuous improvement. PCS Forest Management is committed to continuous improvement. The management framework outlined in Figure 1 demonstrates how this is achieved. The framework allows for self-evaluation of performance that may in turn result in operational change to improve future outcomes.

This adaptive management approach ensures flexibility in an ever-changing operating environment, including the emerging challenges associated with climate change. To mitigate and adapt to climate change, PCS Forest Management integrates a climate-based strategy into its continuous improvement processes, ensuring that climate-related risks – such as loss of carbon stocks, changes in fire behaviour, pest and disease dynamics, water availability and plantation productivity – are proactively assessed and incorporated into planning, operational decision-making and monitoring. This ensures the organisation remains resilient, evidence-based and responsive to future environmental conditions.

The aim of the PCS Forest Management continuous improvement framework is to:

- Meet environmental, climate-related and other legal requirements.
- Realise stated governance and workforce, economic, environmental, social and cultural objectives.
- Promote a positive image to our contractors, communities, stakeholders and customers.
- Retain and improve plantation management skills and knowledge through strategic thinking, climate-informed decision-making, and documenting outcomes to guide ongoing improvement.

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<sup>1</sup> Refer to ‘Non-compliance and Compliant Recording Sheet’, in the EMP.

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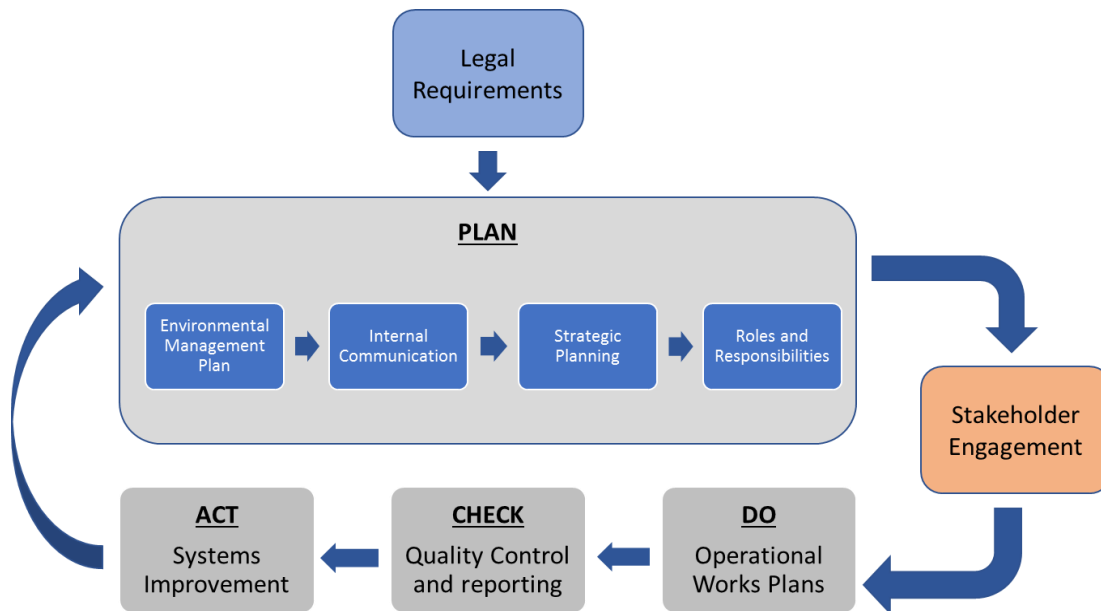


Figure 1: PCS Plantation Management Framework

Adopting a continuous improvement framework was the first step toward PCS Forest Management achieving FSC certification in December 2023, meeting the requirements of the FSC National Forest Stewardship Standard of Australia (FSC-STD-AUS-01-2018 EN). This certification is verified through an independent audit conducted by an accredited certification body, ensuring compliance with internationally recognised environmental, economic, and social standards.

The FSC standard provides assurance to end users that timber is grown and harvested legally from sustainably managed forests. Globally, certification in sustainable forest management has become a critical market access requirement for timber products. This achievement reinforces PCS’ commitment to responsible forestry and sustainable plantation management.

PCS Forest Management practices align with the 10 FSC Principles, which form the foundation of responsible forest stewardship:

1. Compliance with Laws: Adhering to all applicable laws, regulations, and FSC requirements.
2. Workers’ Rights and Employment Conditions: Upholding fair labour practices and safe working conditions.
3. Indigenous Peoples’ Rights: Respecting the rights and cultural heritage of Indigenous communities.
4. Community Relations: Maintaining positive relationships and contributing to the social and economic well-being of local communities.
5. Benefits from the Forest: Ensuring that forest management activities sustain economic viability and social benefits.
6. Environmental Values and Impacts: Conserving biodiversity, water resources, soils, and ecosystems.
7. Management Planning: Implementing comprehensive and adaptive forest management plans.
8. Monitoring and Assessment: Regularly monitoring forest conditions, management activities, and their impacts.
9. High Conservation Values: Identifying and maintaining areas of high conservation value.
10. Implementation of Management Activities: Applying management practices that are consistent with FSC principles and standards.

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## Purpose and scope

This document outlines a systematic approach to sustainable plantation management. PCS Forest Management has four key focus areas that highlight plantation values, including:

- governance and workforce values,
- economic values,
- environmental values, and
- social and cultural values.

Objectives aligned with this management framework are stated for each focus area and cover the five-year period, from 2026-2030. In recognition of the similarities between land tenures managed by PCS, this document follows a similar framework to the statutory requirements of existing Reserve Management Plans. Values and management considerations for each focus area are shown in Figure 2.

In summary, the purpose of this Plan is to:

- Outline a systematic approach to sustainable forest management, ensuring planning decisions are in line with other ACT planning instruments;
- Ensure compliance with relevant legislation and other external requirements;
- Demonstrate the commitment to continuous improvement in performance outcomes;
- Ensure all PCS Forest Management staff understand their roles and responsibilities regarding plantation management;
- Provide a process of annual review; and
- Ensure proactive engagement with relevant stakeholders.

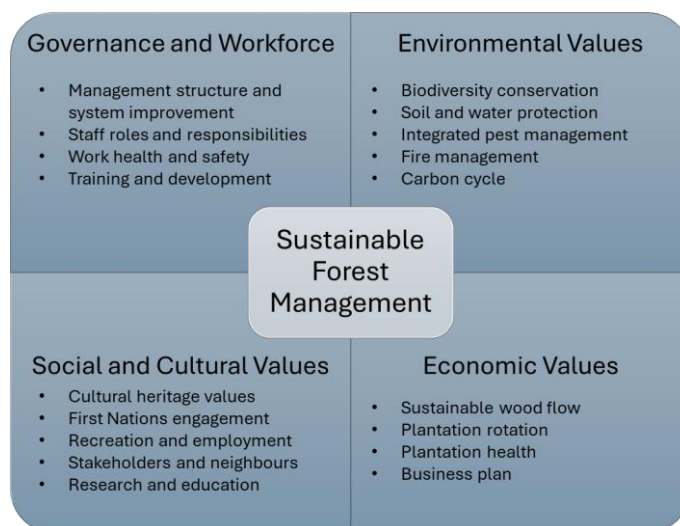


Figure 2: Key focus areas

### Lands to which this Plan applies

This Plan covers the gross area of the pine plantations as mapped in PCS GIS databases with management intent detailed in Table 1. The gross area will be made available online in [ACTmapi](#) in time. The mapped gross area will include pine plantations, roads, riparian zones and areas of native forest and some eucalypt plantations that were formerly part of the ACT Forests estate.

This Plan also includes areas where other strategic plans are in place. This recognises the existence of pine plantations within these areas and ensures future operations comply with best practice. An example of this is the commercially viable plantations within the Lower Cotter Catchment.

Figure 3 shows areas of past and present plantation location for reference.

Note: Some areas of the original ACT Forests estate are outside the scope of the Plan since they are no longer commercially viable, and are now managed by the City Services division, the Suburban Land Agency or have already been developed or sold. These include some former plantations within the Stromlo forest area, Lower Cotter Catchment, Block 60 (Jedbinbilla), Giralang Pines, Fadden Pines, Westbourne Woods, and Fyshwick Pines.

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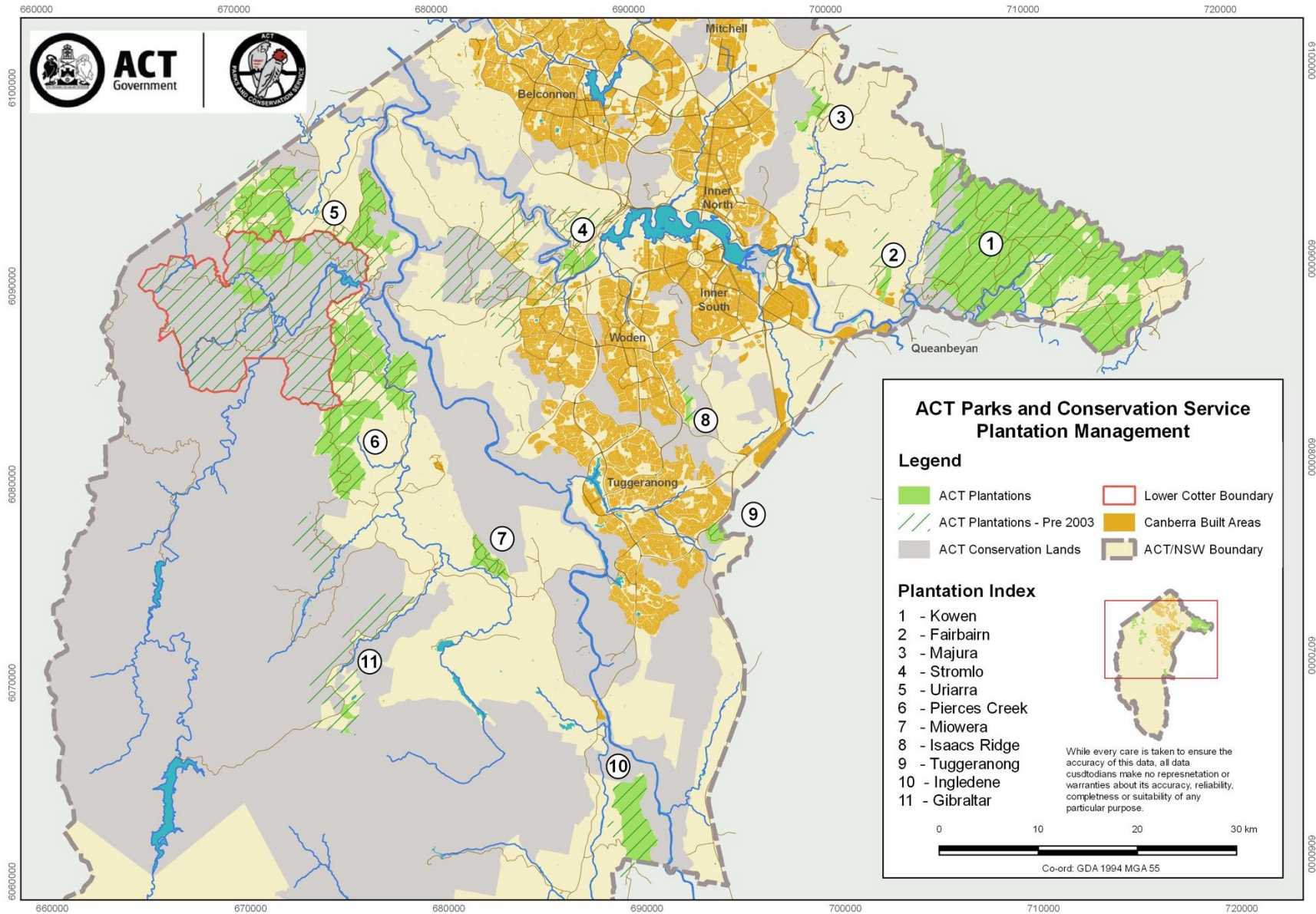


Figure 3: Areas of past and present plantations managed by PCS Forest Management

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## PURPOSE AND SCOPE

The management intent for all plantations within the scope of this Plan are outlined below in Table 1. In most cases timber harvesting and re-establishment to pines is the principal land use; however, several plantation areas will transition out of the pine plantations at the end of their current rotation. These are highlighted in grey in the table below.

PCS Forest Management is committed to developing clear guidance for areas transitioning out of pine plantations, while recognising that final land-use decisions are made through broader ACT Government planning and approval processes. When plantations are scheduled to transition to another land use – such as nature reserves, national parks, commercial tourism activities, or potential housing – PCS Forest Management will work with the relevant and managers and planning agencies to clarify how the land will be restored or repurposed, who will be responsible for carrying out works, and how those works will be funded. Our role is to provide practical operational advice, timing, and site information to ensure that handovers are well-coordinated, environmentally responsible, and consistent with the long-term objectives for the site. PCS Forest Management is also interested in understanding any plantation offsets that may apply when areas transition out of pine, as well as monitoring Territory Plan variations that influence future land-use direction.

Table 1: Plantation management intent

FOREST	PCS DISTRICT	PRINCIPLE LAND USE	OPERATIONS <sup>2</sup> 2026 - 2030	MANAGEMENT CONSIDERATIONS
<b>1. Kowen</b>	Googong Foreshores	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Thinning</li> <li>Clear fall</li> <li>Plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 35 hectares (Seven Mile, Cpts 35, 36, 37 &amp; 38) of plantation is growing on Commonwealth land managed by the Department of Finance. ACT maintains the rights to harvest and replant these areas.</li> <li>Firing Range block (~80 hectares) is Commonwealth land managed by Department of Defence. ACT has a licence agreement with Defence to harvest and replant these areas.</li> <li>Recreational use (e.g., Old Kowen Homestead camping ground, sled dog, marathon, mountain biking, motor sports, etc.).</li> <li>Biodiversity conservation and habitat improvement (e.g., orchids, yellow-box grassy woodland, etc.).</li> <li>Kowen remains outside Canberra's planned urban footprint.</li> </ul>
<b>2. Fairbairn</b>	Googong Foreshores	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Continuous access to the Air Disaster Memorial is required.</li> <li>Paintball licence notice period for works.</li> </ul>
<b>3. Majura</b>	North	<ul style="list-style-type: none"> <li>Recreation with transition out of pine plantations</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">The Majura Pines Recreation Concept Master Plan 2014</a> guides future planning and management of the plantation.</li> <li>Limited commercial value (e.g., Treetops Adventure), harvesting and re-establishment may occur in consultation with community.</li> </ul>
<b>4. Stromlo</b>	North	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Future housing</li> <li>Special Purpose Reserve</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Stromlo has been identified for future housing, will not be re-established after harvesting.</li> <li>As part of the Special Purpose Reserve plan, some of the pines would be retained.</li> <li>Recreational use (e.g., multi sports – adventure races, triathlons, duathlons).</li> </ul>

<sup>2</sup> Bushfire fuel management, feral animal and listed weed control operations will apply to all plantations during this period.

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## PURPOSE AND SCOPE

FOREST	PCS DISTRICT	PRINCIPLE LAND USE	OPERATIONS <sup>2</sup> 2026 - 2030	MANAGEMENT CONSIDERATIONS
5. Uriarra - LCC	Murrumbidgee River Corridor	<ul style="list-style-type: none"> <li>Harvesting</li> <li>No plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Thinning</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">The LCC Reserve Management Plan 2018</a> guides the future planning, development and management of pine plantations.</li> <li>Water quality and water supply catchment.</li> <li>No recreational use.</li> </ul>
5. Uriarra	Murrumbidgee River Corridor	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Thinning</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Heritage-listed site of the Sherwood Homestead Complex, including the garden and grave sites.</li> <li>Recreational use (e.g., Blue Range recreation area, mountain bikes, motor sports, equestrian).</li> <li>Biodiversity conservation and habitat improvement (e.g., threatened native grass: River Tussock, Kangaroo Grass, Rush wet tussock grassland of footslopes).</li> </ul>
6. Pierces Creek	Tidbinbilla	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Thinning</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Identify areas of pine re-growth that can be managed as plantations.</li> <li>Recreational use (e.g., 4WD and rally training, orienteering, rogaining, mountain bike, etc.).</li> <li>Co-management of <i>Bossiaea grayi</i> protection and habitat improvement.</li> </ul>
7. Miowera	Tidbinbilla	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Plantation re-establishment</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Thinning</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Regularly used for car rally training by recreation groups.</li> </ul>
8. Isaacs Ridge	South	<ul style="list-style-type: none"> <li>NCA Designated Area</li> <li>Recreation with transition out of pine plantations</li> </ul>	<ul style="list-style-type: none"> <li>Thinning</li> <li>Pruning</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">The Isaacs Ridge Trails Management Plan 2015</a>.</li> <li>Consultation Report Isaacs Ridge Mountain Bike Trail Upgrade Project 2015.</li> <li>Recreational and educational use (e.g., running, off road biking, school orienteering, equestrian).</li> </ul>
9. Tuggeranong	South	<ul style="list-style-type: none"> <li>Harvesting</li> <li>Transition out of pine plantations</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Thinning</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Limited commercial value, however harvesting and re-establishment may occur under direction of district staff.</li> <li>Paintball licence notice period for works.</li> <li>Recreational use (e.g., bicycle riding – off road).</li> </ul>
10. Ingledene	Namadgi	<ul style="list-style-type: none"> <li>Plantation re-establishment</li> <li>Carbon farming</li> <li>Harvesting</li> </ul>	<ul style="list-style-type: none"> <li>Weed control</li> <li>Fire breaks</li> <li>Native planting</li> <li>Carbon audit</li> </ul>	<ul style="list-style-type: none"> <li>Re-establishment has occurred under carbon farming project.</li> <li>Recreational and educational use (e.g., camping, school excursions, etc.).</li> </ul>
11. Gibraltar	Namadgi	<ul style="list-style-type: none"> <li>Native forest conservation</li> </ul>	<ul style="list-style-type: none"> <li>Roading</li> <li>Clear fall</li> </ul>	<ul style="list-style-type: none"> <li>Harvesting may occur under direction of District staff.</li> <li>This area will be formally transferred to Namadgi National Park for ongoing management under its conservation strategy.</li> </ul>

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### Governance and workforce values

**Objective - promote and maintain a skilled, supported and resilient plantation management workforce by recognising staff professionalism and contributions, strengthening capability through training and collaboration, and maintaining an inclusive, safe and respectful workplace that reflects ACT Government values.**

PCS Forest Management remains committed to delivering high-quality, adaptive plantation management by working closely with Districts and internal stakeholders to ensure effective and coordinated outcomes across the plantation estate.

Plantations in the ACT are managed by eight full-time equivalent foresters under the direction of the Director of Forest Management. This level of staffing is historically low, requiring foresters to work in close partnership with District staff and relevant internal stakeholders to ensure plantation management objectives are met. This creates a diversity of skills that PCS uses to its advantage with an understanding that our people – supported, trained and well-coordinated – are the key to our success.

### Forest Management responsibilities

The PCS Forest Management staff are trained and skilled professionals who specialise in the science of managing forests for multiple purposes within the expectations of the communities in which we operate. PCS Forest Management staff work in a range of disciplines including timber production, fire management, ecological restoration, forest certification, carbon sequestration and day-to-day management of protected areas. Workforce development is supported through the PCS Learning and Development program, which coordinates mandatory training, professional skill development, and access to technical courses, mentoring and on-the-job learning opportunities. This structured approach ensures staff are equipped to adapt to emerging challenges, maintain professional standards, and contribute effectively to operational delivery, ecological stewardship and whole-of-government collaboration.

The PCS Forest Management Director/Assistant Directors/Managers have oversight of all plantation management in the ACT and are supported by Foresters/Assistant Foresters. Their duties include:

1. Delivery of the operational silviculture and harvesting programs
  - Manage an operational budget to provide annual dividend to the ACT Government from the sale of forest products.
  - Plan, implement, monitor and continuously improve forest management programs.
  - Manage high-value timber supply and haulage contracts on behalf of the ACT Government.
  - Ensure all operations comply with ACT Code of Forest Practice, Environmental Authorisations, Environmental Management Plan and Forest Management Certification Standards.
  - Provide policy and technical advice to senior management on forest management matters.
  - Prepare strategic planning and technical documentation for revegetation, rehabilitation and plantation establishment.
  - Carry out fire management activities across the plantation estate.
2. Management of staff and contractors
  - Supervise professional, technical and field staff to ensure high-quality operational outcomes.
  - Strengthen communication within teams and across work groups.
  - Identify and support training, learning and career development needs.
  - Support continual improvement in individual, team and agency performance.
3. Liaison and coordination within ACT Government, and with external agencies and stakeholders
  - Identify and consult internal and external stakeholders during the development and delivery of strategic and operational programs, including those related to conservation management and ecological values.
  - Work collaboratively with ecological specialists to ensure operational planning protects biodiversity and ecological assets.
  - Seek an [Environmental Significance Opinion \(ESO\)](#) when required under the *Planning Act*, ensuring that proposed plantation activities with potential environmental or heritage impacts are assessed appropriately by referring to the [Guide to Environmental Significant Opinion](#).

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## GOVERNANCE AND WORKFORCE VALUES

- Attend high-level meetings with other agencies in the ACT, representing the interests of PCS in plantation, environmental and cross-tenure matters.
- Contribute to land management team meetings within PCS and coordinate with Districts to support whole-of-government programs.
- Maintain strong partnerships with internal and external entities involved in fire management, pest and weed programs, water quality, recreation, certification and community engagement.

PCS Forest Management staff cannot deliver these responsibilities in isolation. Achieving successful outcomes requires close collaboration with other ACT Government sections. This consultation and co-management approach ensures compliance with environmental standards, protection of biodiversity, and integration of social and cultural values, while maintaining transparency and accountability across all programs. Table 2 describes these relationships by outlining the responsibilities of PCS Forest Management staff alongside the ACT Government stakeholders involved in consultation and/or co-management, demonstrating how shared responsibilities and partnerships underpin sustainable forest plantation management in the ACT.

Table 2: PCS Forest Management Staff Responsibilities and Internal Collaboration across ACT Government

PCS Forest Management staff responsibilities	ACT Government stakeholders for consultation and/or co-management
<b>GOVERNANCE, WORKFORCE, AND ECONOMIC VALUES</b>	
• Work health and safety	CED Work Safety and Wellbeing
• Training and development	PCS Learning and Development
• Silviculture	Districts
• Timber harvest and sales	Districts
• Roads (timber haulage)	Districts; ACT Roads
• Plantation health	Districts
• Grazing (agistment of livestock)	Districts; Licencing and Compliance; Rural Services and Biosecurity
<b>ENVIRONMENTAL VALUES</b>	
• Biodiversity (flora and fauna)	Office of the Conservator of Flora and Fauna (OCFF) and Office of Nature Conservation (ONC)
• Environmental weed control	Districts; PCS Invasive Plants and Plant Pests
• Pest animal control and management	Districts; PCS Invasive Animals and Overabundant Wildlife
• Pine wildling control	Districts; PCS Invasive Plants and Plant Pests
• Native regeneration	Districts
• Soil and water protection (EPA 0288)	Districts; the EPA and Office of Water (OOW)
• Fire preparedness	Districts; PCS Fire Management; PCS Management Trails
• Carbon cycle	Districts
<b>SOCIAL AND CULTURAL VALUES</b>	
• Maintaining and reporting on heritage	ACT Heritage; ACT Heritage Council
• First Nations engagement	Traditional Custodian Engagement (TCE) and Natural Resource Management (NRM)
• Recreation event approvals	Licencing and Compliance (Public Land Use Permit)
• Recreation facility maintenance	PCS Projects Planning and Capital Works
• Gate and fencing maintenance	Districts
• Licencing (special purpose permits)	PCS Volunteer and Visitor Experience
• Stakeholders and neighbours	Districts; Rural Services and Biosecurity; Website Team
• Education and research	PCS Volunteer and Visitor Experience
• Compliance and illegal activities	Districts; Licencing and Compliance

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**How we communicate**

The aim of formalising communication is to ensure all staff are informed, engaged and provided with meaningful opportunities to contribute to ongoing plantation management. Effective communication will:

- Ensure PCS Forest Management and relevant ACT Government staff remain aligned in their understanding and actions.
- Clarify roles, responsibilities and accountabilities across programs and work groups.
- Support efficient and consistent decision making.
- Reduce potential conflict related to land-use activities and operational priorities.
- Ensure stakeholders receive clear, accurate and consistent messages.
- Strengthen productive working relationships across ACT Government.

Table 3 outlines the minimum level of communication PCS Forest Management managers and staff commit to undertaking. This does not replace the need for routine daily communication.

*Table 3: Communication Plan*

AUDIENCE	INFORMATION/DISCUSSION	METHOD	TIMING
<b>Minister and Government Staff</b>	<ul style="list-style-type: none"> <li>• Professional advice on plantation forest management</li> </ul>	<ul style="list-style-type: none"> <li>• Response to ministerial questions</li> <li>• Meetings and field days when requested</li> </ul>	<ul style="list-style-type: none"> <li>• As required</li> </ul>
<b>PCS Director and senior staff</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Tactical harvesting schedule</li> <li>• Annual work schedules</li> <li>• Staffing matters and resources</li> <li>• Environmental management</li> <li>• Change in land management intent</li> </ul>	<ul style="list-style-type: none"> <li>• Annual report</li> <li>• All staff team days</li> <li>• Senior managers meeting</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Monthly</li> </ul>
<b>PCS Area Managers</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Gross area map</li> <li>• Environmental management</li> <li>• Change in land management intent</li> </ul>	<ul style="list-style-type: none"> <li>• Gross area stored in ACTmapi</li> <li>• Works Plan</li> <li>• Operational Maps</li> <li>• Agenda driven meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Bi-Annual meeting</li> </ul>
<b>PCS Rangers/ Technical Officers</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Gross area map</li> </ul>	<ul style="list-style-type: none"> <li>• Gross area stored in ACTmapi</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing access to ACT and PCS databases</li> </ul>
<b>Contractors – silviculture, roading, harvesting, and haulage</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Environmental management</li> <li>• Performance against work agreements, budget, and quality standards</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> <li>• Contract management plan</li> </ul>	<ul style="list-style-type: none"> <li>• Annual review</li> <li>• Quarterly meeting</li> <li>• Ongoing as required</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Performance against wood supply agreements and budget</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meeting</li> <li>• Timber sales agreement</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Ongoing as required</li> </ul>
<b>PCS Fire Management</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Fire preparedness</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Ongoing meetings as required</li> </ul>
<b>All Hazards Council</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>

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## GOVERNANCE AND WORKFORCE VALUES

AUDIENCE	INFORMATION/DISCUSSION	METHOD	TIMING
<b>PCS Management Trails</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Road upgrade and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Ongoing meetings as required</li> </ul>
<b>PCS Invasive Plants and Plant Pests</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Weed priority areas</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Ongoing as required</li> </ul>
<b>PCS Invasive Animals and Overabundant Wildlife</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Pest animal priority areas</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Ongoing as required</li> </ul>
<b>PCS Volunteer and Visitor Experience</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Recreation lease permits</li> <li>• Signage planning and installation</li> <li>• Visitor experience surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Recreation user group meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Annually, user group meetings</li> <li>• Ongoing meetings as required</li> </ul>
<b>PCS Projects Planning and Capital Works</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Recreation facility upgrade and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Annually</li> <li>• Ongoing meetings as required</li> </ul>
<b>PCS Environmental Offset</b>	<ul style="list-style-type: none"> <li>• Annual work schedules</li> <li>• Gross area map</li> <li>• Change in land management intent</li> </ul>	<ul style="list-style-type: none"> <li>• Gross area stored in ACTmapi</li> <li>• Works Plan</li> <li>• Operational Maps</li> <li>• Agenda driven meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>
<b>CED Work Safety and Wellbeing</b>	<ul style="list-style-type: none"> <li>• Safety and wellbeing</li> <li>• Annual work schedules</li> <li>• Incidents reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Agenda driven meetings</li> <li>• Works Plan</li> <li>• Operational Maps</li> <li>• Records of incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>
<b>Environment Protection Authority</b>	<ul style="list-style-type: none"> <li>• EA/EMP updates</li> <li>• Gross area map</li> <li>• Environmental management</li> <li>• Soil and water protection</li> <li>• Third party complaints</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Works Plan</li> <li>• Operational Maps</li> <li>• Water monitoring data</li> <li>• Records of complaints</li> </ul>	<ul style="list-style-type: none"> <li>• Biennial</li> <li>• Annually</li> <li>• Ongoing meetings as required</li> </ul>
<b>ACT Heritage – ACT Heritage Council</b>	<ul style="list-style-type: none"> <li>• Annual work schedules</li> <li>• Heritage protection</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>
<b>Traditional Custodian Engagement</b>	<ul style="list-style-type: none"> <li>• Annual work schedules</li> <li>• First Nations engagement</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Agenda driven meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>
<b>Natural Resource Management</b>	<ul style="list-style-type: none"> <li>• Annual work schedules</li> <li>• First Nations engagement</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Agenda driven meetings</li> <li>• Memorandum of Understanding</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>
<b>Office of the Conservator of Flora and Fauna</b>	<ul style="list-style-type: none"> <li>• Annual work schedules</li> <li>• Biodiversity conservation and habitat improvement</li> <li>• Environmental management</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Works Plan</li> <li>• Operational Maps</li> <li>• Agenda driven meetings</li> <li>• Biodiversity monitoring data</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>
<b>Office of Nature Conservation</b>	<ul style="list-style-type: none"> <li>• Annual work schedules</li> <li>• Biodiversity conservation and habitat improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Report</li> <li>• Works Plan</li> <li>• Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing meetings as required</li> </ul>

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AUDIENCE	INFORMATION/DISCUSSION	METHOD	TIMING
	<ul style="list-style-type: none"> <li>Environmental management</li> </ul>	<ul style="list-style-type: none"> <li>Agenda driven meetings</li> <li>Biodiversity monitoring data</li> </ul>	
<b>Office of Water</b>	<ul style="list-style-type: none"> <li>Annual work schedules</li> <li>Water monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Annual Report</li> <li>Works Plan</li> <li>Operational Maps</li> <li>Agenda driven meetings</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing meetings as required</li> </ul>
<b>ACT Roads</b>	<ul style="list-style-type: none"> <li>Annual work schedules</li> <li>Asphalt millings management</li> </ul>	<ul style="list-style-type: none"> <li>Works Plan</li> <li>Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> <li>Ongoing as required</li> </ul>
<b>Licencing and Compliance</b>	<ul style="list-style-type: none"> <li>Annual work schedules</li> <li>Recreation events approval</li> <li>Non-compliance activities monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Works Plan</li> <li>Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> <li>Ongoing as required</li> </ul>
<b>Rural Services and Biosecurity</b>	<ul style="list-style-type: none"> <li>National biosecurity matters</li> <li>Biosecurity responses in ACT</li> <li>Liaison with ACT rural lessees</li> </ul>	<ul style="list-style-type: none"> <li>Agenda driven meetings</li> <li>Consultation on national meetings</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing as required</li> </ul>
<b>Before You Dig Australia (Icon Water, Optus, Telstra, etc.)</b>	<ul style="list-style-type: none"> <li>Annual work schedules</li> <li>Prevention of damage</li> </ul>	<ul style="list-style-type: none"> <li>Agenda driven meetings</li> <li>Works Plan</li> <li>Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> <li>Ongoing as required</li> </ul>
<b>Recreation User Groups</b>	<ul style="list-style-type: none"> <li>Safety and wellbeing</li> <li>Tactical harvesting schedule</li> <li>Annual work schedules</li> <li>Availability of recreation areas and facilities</li> </ul>	<ul style="list-style-type: none"> <li>Approvals/Permits issued</li> <li>Recreation user group meetings</li> <li>Operational Maps</li> </ul>	<ul style="list-style-type: none"> <li>Annually, user group meetings</li> </ul>
<b>Neighbours</b>	<ul style="list-style-type: none"> <li>Safety and wellbeing</li> <li>Work Plan maps by request</li> </ul>	<ul style="list-style-type: none"> <li>Phone, email, postal, face to face meetings</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing as required</li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>Safety and wellbeing</li> <li>Herbicide application</li> <li>Exclusion zones</li> <li>General plantation management information</li> </ul>	<ul style="list-style-type: none"> <li>Forest Management Brochure (to be displayed at each depot)</li> <li>ACT Government Website (Herbicide application)</li> <li>ACTmapi plantation data layers</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing as required</li> </ul>

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## Economic values

**Objective - through sustainable harvesting and replanting pine plantations, PCS Forest Management will contribute directly to the ACT Government's strategic priority for economic growth and diversification.**

ACT plantations provide a range of economic values including timber harvesting and transport, hosting sporting and recreation events and agistment of livestock. Timber sales account for most of the revenue and PCS Forest Management seeks fair market value for all timber sales. The point of sale for timber is delivery to the mill door (purchasers). This means that PCS Forest Management's net revenue at harvest is the mill door price minus the costs of harvesting, transport and the full lifecycle costs of growing and managing the plantation. Since 2024, PCS Forest Management has held contracts for harvesting and transport directly with suppliers.

### Sustainable wood flow

PCS Forest Management is committed to sustainable harvesting, ensuring that annual timber removals do not exceed approximately 90,000 tonnes. This commitment underpins our planning processes and compliance with certification standards. While Timber Supply Agreements (TSA) outline indicative quantities and product specifications for customer contracts, they do not create an obligation to supply beyond sustainable limits. These agreements provide planning certainty and inform annual forestry budgets and plantation valuations for insurance purposes. To support long-term TSA negotiations and sustainable harvest planning, PCS Forest Management uses internal yield modelling with specialist software (Woodstock) applied periodically. Model inputs include net stocked area, stand history, plantation condition, and growth rates. All cleared sites are scheduled for replanting within 6–12 months after harvesting to maintain forest productivity and sustainability.

The wood flow underpins the current long-term contract commitments made by the ACT Government and makes assumptions based on the future management intent of plantation areas. In this scenario assumptions include:

- Lower Cotter Catchment plantations will not be re-established after clear fall harvesting. Approximately 448 hectares will be progressively restored to native vegetation, improving water catchment and enhancing habitat availability for flora and fauna.
- Stromlo plantations will not be re-established after clear fall harvesting. Stromlo has been identified for future housing. As part of the Special Purpose Reserve plan, some of the pines would be retained.
- Isaacs Ridge and Tuggeranong Pines are excluded, i.e. no harvesting certainty.
- Ingledene has been re-established as a pine plantation under a carbon farming project to assist the ACT in achieving Net Zero Emissions by 2045, and native vegetation has also been replanted on the remnant native patches within the site.
- All other plantations will be harvested and re-established in line with ACT's typical plantation rotation.

### Plantation rotation

The length of time a tree is grown before harvesting is referred to as the rotation length. Rotation length is governed by many factors, including growth rates, site conditions and available product markets. The end of a rotation is generally the age where the stand of trees is no longer increasing in volume or value at a commercially acceptable rate. In the ACT, the rotation length is typically 28-35 years and is summarised in Table 4.

### Species selection

*Pinus radiata* (Radiata pine) is the most widely planted commercial timber species in the region. It is grown in large plantations on the southern slopes and central tablelands of NSW near Tumut and Bathurst. The species is suited to a range of climate and soil conditions. *Pinus radiata* tolerates cold and frost and grows acceptably (at lower yields) in areas with an average rainfall below 600mm. It provides larger timber yields in a shorter rotation than most other species and given the ACT's climatic conditions, the plantations are well placed to operate within established markets.

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Trials of other species such as *Pinus ponderosa* were established early in ACT Forests' history with some plantations remaining in Kowen Forest. There is no local market for these alternative species and opportunistic export sales are required. These sites will be returned to *Pinus radiata* for the following rotation.



Figure 4: *Pinus radiata* in Kowen Forest

### Site preparation

Site preparation refers to all actions undertaken to prepare the ground before seedlings are planted, ensuring maximum survival and growth of seedlings is realised. Preparing a site for planting improves initial growth rates by breaking hard pans in the soil, managing water, nutrients and reducing competition. It also reduces planting costs and fire risk. Site preparation may involve treatment of debris, deep ripping, mounding, competition weed control and fertilising.

- **Clearing debris, deep ripping and mounding**

On harvested sites logging residue (slash) is retained wherever possible for nutrient recycling. The preference is to reincorporate the slash into the soil using a chopper roller to hasten the breakdown of material (reducing fire risk and improving site trafficability). In some cases, excessive residue is stuck raked into windrows and burnt, however this is minimised to limit nutrient loss and smoke emissions. Deep ripping is undertaken to improve rooting depth and provide a path for moisture to penetrate the soil. Mounding reincorporates the soil into the rip line providing a deeper planting profile and avoiding soil saturation around the roots of the seedling during periods of wet weather.
- **Competition weed control**

Weed control is undertaken with the use of herbicides. This is carried out prior to planting or during the first year of establishment when pine seedlings are most susceptible to competition. Weeds compete for both nutrients and moisture which are often limited in soil profiles of the ACT. PCS Forest Management is committed to minimising chemical use. Chemicals are only applied where appropriate and under strict operational guidelines that protect biodiversity, water quality and neighbouring properties. PCS Forest Management is also using a biological control agent (i.e., *Chrysolina* beetles), in conjunction with other integrated weed management practices.
- **Fertilising**

Nutrition is managed through fertilising and is important to maintain early tree health and vigorous growth. Extensive research undertaken by PCS Forest Management staff over many years has identified the level of fertiliser required in the first year of planting. Boron is also applied as a routine operation in the first two years of the rotation. All soils across Southeast Australia have a significant boron deficiency and if left unchecked trees will grow into deformed stems that have limited commercial value.

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### Timber harvesting

There are two types of plantation timber harvesting - thinning and clear fall. Thinning is the process of ensuring the best and largest trees in a plantation are given the opportunity to grow unhindered. The thinning operation allows for the removal of defective and poor-quality trees to encourage growth in the remaining trees. A rotation can have one or two thinning operations prior to clear fall, depending on site conditions and markets. Timber produced from thinning operations is younger and therefore of lower quality - a high proportion is destined for the small log and pulp markets. Clear fall is the final harvest and is usually undertaken at the commercial endpoint of the rotation when maximum return on investment can be obtained producing a high proportion of high value sawlog suitable for house construction.



Figure 5: Clear fall harvesting in Kowen Forest

### Road and trail maintenance

A road network is in place that allows for timber harvesting and is maintained to ensure safe haulage of timber products during wet and dry conditions. The road network also provides access for fire protection and public recreation. The current ACT plantation road network is extensive and historic, having been in place for nearly 100 years. The completion of a clear fall operation allows for strategic decisions to be made around the ongoing requirements of certain roads and the opportunity to close and rehabilitate redundant roads. This brings more land into production, reduces edge effects on timber quality and reduces turbid runoff from road drainage during wet weather. Optimal plantation road density (kilometre of road required per hectare of forest to harvest) has reduced significantly since the 1920s with the progression from manual to more productive mechanised harvesting systems. The ACT Code of Forest Practice describes road standards and requirements for the plantation estate.

### Plantation health - pests and disease

Pests and diseases can damage trees in all stages of development and affect the ability of plantations to meet their management objectives. Annual forest health monitoring (via aerial survey) is scheduled across the plantation estate. The following are common local plantation pests and diseases that can affect the health of *Pinus radiata* within the ACT:

- *Sirex noctilio* (Wood wasp) – An invasive wasp that is attracted to stressed or damaged trees. Females drill into the sapwood to lay eggs and spore a white rot fungus for larvae to feed upon. The fungus can lead to tree mortality. Sirex has been recorded in the ACT since the early 1980s and is controlled through an annual biological control program involving trap trees injected with nematodes which

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cause sterility in the female wasp. Well scheduled thinning operations also reduce the incidence of infection by lowering stocking levels thereby reducing stress on the remaining crop trees.

- *Sphaeropsis sapinea* (Previously known as Diplodia tip blight) – A fungal disease that causes stem cankers, shoot dieback, dead topping or stem death. Infection begins with wounds or weakened trees, and the disease is common in drought affected or hail damaged plantations.
- *Essigella californica* (Monterey pine aphid) – An aphid that sucks sap from pine needles and causes premature needle-cast. Aphids can reduce timber growth; however, it has not caused widespread damage to the ACT plantation resource.
- *Dothistroma septosporum* (Red needle blight) – A fungal disease that causes defoliation that increases year on year and reduces timber growth and can lead to tree mortality. Dothistroma has not caused widespread damage to the ACT plantation resource to date, however the risk (as with all diseases) may change in line with global warming.
- *Cyclaneusma minus* (Cyclaneusma needle cast) – A fungal disease that is a part of the phylum, Ascomycota. After infection by Cyclaneusma, most pines do not display symptoms until 10 months after the initial infection. Cyclaneusma has not caused widespread damage to the ACT plantation.
- *Ips grandicollis* (Five-spined bark beetle) – An exotic pest in Australia that preferentially attacks stressed pine trees, including *Pinus radiata*, but it can also attack healthy trees. In recent years, *Ips grandicollis* has been observed to attack ‘trap trees’ treated with herbicide to make them attractive to *Sirex noctilio* as part of a successful biological control program against this wood wasp. *Ips* has not caused widespread damage to the ACT plantation.
- *Marchalina hellenica* (Giant pine scale) – Recorded in Australia for the first time in 2014. A scale insect that survives by sucking the sap of pine trees. If detected, movement of host material will be restricted. In large populations, the scale can lead to tree mortality. Not yet found in the ACT.

Table 4: Typical ACT Plantation Rotation

AGE	MONTH	SILVICULTURE
Pre-plant	12 months prior to planting	<p><b>Seedling order</b></p> <ul style="list-style-type: none"> <li>• Select appropriate genetically improved seed source (currently GF19).</li> <li>• Determine number of seedlings required and contract nursery to grow them as either containerised or bare rooted stock (site specific).</li> <li>• Note that genetically modified organisms are not used in ACT plantations.</li> </ul>
Pre-plant	Nov - Mar	<p><b>Site preparation</b></p> <ul style="list-style-type: none"> <li>• Prepare harvested area 3-12 months prior to planting. Various operations are applied depending on site conditions.</li> <li>• Rolling - crusher roller is used to break down harvesting debris.</li> <li>• Stick raking and windrow burning – burning is not best management practice, however, is occasionally required when excessive harvest debris prevents re-establishment.</li> <li>• Ripping and mounding - implemented on a modified contour pattern aimed to passively drain water towards ridges. Soil needs to be dry for adequate fracturing and shattering of the profile.</li> </ul>
Pre-plant	Apr	<p><b>Pre-plant weed control</b></p> <ul style="list-style-type: none"> <li>• Pre-plant application of residual and knock-down herbicides, generally undertaken by helicopter. Timing is important since the chemical often needs to have at least four weeks on the ground prior to planting.</li> <li>• Scrub advanced weeds using brush-cutters or chainsaws.</li> </ul>
Plant	Jun - Aug	<p><b>Planting</b></p> <ul style="list-style-type: none"> <li>• Plant pines at 1000-1100 stems/ha. Pine seedlings are grown interstate and transported in refrigerated trucks from the nursery to the field.</li> <li>• The year the seedlings are planted is also known as the ‘age class’ of each crop throughout its rotation.</li> </ul>
0-1	Aug - Sept	<p><b>Fertilise</b></p> <ul style="list-style-type: none"> <li>• Fertilise seedlings with NPK.</li> </ul>
0-1	Aug – Oct (If required)	<p><b>Post-plant weed control</b></p> <ul style="list-style-type: none"> <li>• Post plant spray weeds and regrowth if required, usually by helicopter.</li> </ul>
0-2	Dec - Feb	<p><b>Boron application</b></p> <ul style="list-style-type: none"> <li>• Apply boron when competing grasses have died off, usually by helicopter.</li> </ul>

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AGE	MONTH	SILVICULTURE
8-10	Year round	<p><b>Low prune</b></p> <ul style="list-style-type: none"> <li>Remove all branches to height of 2.2 to 2.4 metres above ground.</li> <li>Site specific specification of stems per hectare to be pruned and can be combined with 'non-commercial thinning'.</li> <li>Only done in strategic fire zones and along selected compartment edges.</li> </ul>
15-18	Year round	<p><b>Thinning</b></p> <ul style="list-style-type: none"> <li>Thin compartment to either a stocking and/or basal area specification.</li> <li>Produces mostly pulp logs and some small sawlogs.</li> </ul>
28-35	Year round	<p><b>Clear fall</b></p> <ul style="list-style-type: none"> <li>Produces mostly sawlogs and some pulp logs from the tops of any and/or remaining poorly formed trees.</li> <li>Log sales are based on weight or volume depending on customer requirements and log scanning systems.</li> <li>Mills generally cannot take any log greater than 60cm diameter and clear fall age of a compartment may be adjusted to meet this requirement.</li> </ul>
10-20	Year round (with peak in June/July)	<p><b>Sirex wasp program</b></p> <ul style="list-style-type: none"> <li>Wasp sterilising nematodes are introduced to the wasp population through inoculating Sirex wasp attacked trees in carefully selected trap sites.</li> <li>Billets from trap sites are monitored to understand background level of nematodes and changes in wasp population size or distribution.</li> </ul>
0-35	Year round	<p><b>Plantation pest, disease and other potential risks</b></p> <ul style="list-style-type: none"> <li>Monitor and manage when required.</li> </ul>

**OUR BUSINESS**

**Management considerations:**

When managing **site preparation and silviculture** PCS Forest Management staff will:

- Aim to maintain the productive capacity of the land.
- Undertake work in accordance with the ACT Code of Forest Practice.
- Manage site preparation through a risk assessment process and implementation of work plans.
- Provide public notice about herbicide and pesticide use, as per the *Environment Protection Act 1997*.
- Focus on delivery of operations in a safe manner that doesn't cause harm to contractors, staff or other forest users.
- Monitor, audit and report outcomes to ensure continuous improvement.
- Maintain regular communications with PCS District staff.

When managing timber **harvesting** PCS Forest Management staff will:

- Focus on delivery of operations in a safe manner that does not cause harm to contractors, staff or other forest users.
- Aim to maximise financial return (stumpage) for the sale of timber products.
- Focus on contractual compliance and meeting timber delivery expectation of our customers
- Undertake work in accordance with the ACT Code of Forest Practice.
- Manage harvesting through a risk assessment process and implementation of work plans.
- Consult with relevant stakeholders, particularly recreational user groups and neighbours to ensure potential conflicts with planned events are managed appropriately.
- Monitor, audit and report outcomes to ensure continuous improvement.
- Maintain regular communications with PCS District staff.

When planning the **road network** required for harvesting, PCS Forest Management staff will:

- Focus on delivery of operations in a safe manner that doesn't cause harm to contractors, staff or other forest users.
- Undertake work in accordance with ACT Code of Forest Practice.
- Manage road maintenance and construction through a risk assessment process and implementation of work plans.
- Monitor, audit and report outcomes to ensure continuous improvement.

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## Environmental values

### Biodiversity

**Objective - ensure populations of existing native fauna and flora within the plantation estate are maintained or enhanced by protecting and improving habitat and managing key threats.**

Biodiversity is not only relevant in conservation ecosystems such as wetlands, nature reserves or national parks. Research shows that remnant native vegetation, riparian zones and paddock trees within agricultural landscapes – including plantations – also contribute to biodiversity to varying levels across local and regional scales.

The scope of this Plan covers ecosystems and associated habitats within and surrounding the ACT plantations. This vegetation is diverse ranging from the lowland wet foothill forests of Namadgi National Park to the dryer forest types in Kowen Forest. Some, but not all these landscapes are managed through Reserve Management Plans or district planning instruments.

#### Biodiversity values

- Greater species diversity ensures natural sustainability of flora and fauna.
- Healthy native ecosystems are more resilient and can better withstand and recover from a variety of disasters, including the predicted effects of climate change.
- Native biodiversity provides ecosystem services such as clean water, stable soil and food resources for native species.
- Elements of biodiversity can contribute to cultural identity. For example, the grass tree forest within Pierces Creek.

To protect the biodiversity values of plantation areas, habitat needs to be maintained or enhanced, and all threatening processes need to be managed. In the ACT, the threatening processes facing native forests include habitat fragmentation and the loss of corridors/connectivity, pest plants and animals, pine wildlings, past road design and density, large-scale intense wildfire and increasing housing demand. An understanding of the threatening processes, the values and the existing management practices is required to prioritise works.

#### High Conservation Values

Under FSC certification requirements, PCS Forest Management is responsible for identifying, maintaining and enhancing the [High Conservation Values \(HCVs\)](#) in the plantation estate and adjacent areas<sup>3</sup> through applying the precautionary approach. HCVs are critical environmental and cultural attributes defined under six categories:

- HCV 1 – Species diversity. Concentrations of biological diversity include endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.
- HCV 2 – Landscape-level ecosystems and mosaics. Intact forest landscapes and large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.
- HCV 3 – Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia.
- HCV 4 – Critical ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.
- HCV 5 – Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or Indigenous Peoples (for example for livelihoods, health, nutrition, water), identified through engagement with these communities of Indigenous Peoples.
- HCV 6 – Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or

<sup>3</sup> For fauna, adjacency depends on how mobile the fauna species are – for example, a buffer of around 5 km may be appropriate for highly mobile species (e.g. Wedge-tailed Eagles), while a buffer of around 1 km is more suitable for species with low mobility (e.g. Legless Lizards). For flora, adjacency is generally defined between 1 km and 500 m, depending on how far the seed can disperse. Cultural heritage features typically require much smaller adjacency buffers.

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religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples, identified through engagement with these local communities or Indigenous Peoples.

PCS Forest Management have undertaken an HCV assessment and identified several areas and monitoring plots which meet the definition of HCVs (see Figure 6). These are listed in Appendix 3. We regularly consult and work with relevant stakeholders including local environmental management groups, ecologists and experts from within State and ACT Government on the management and monitoring of these areas. A copy of the full HCV Management Plan is available on request.



Figure 6: HCV Monitoring Plots: a) Threatened grassland in Sherwood, Uriarra; b) *Bossiaea grayi* exclusion zones in the Pierces Creek; c) *Caladenia moschata* & d) *Caladenia carnea* – orchids in native patches in Kowen Forest

### Integrated pest management

Integrated pest management (IPM) in pine plantation areas aims to minimise the impact of pest animals and invasive plants on biodiversity, forest productivity, and neighboring rural properties. A strategic, landscape-scale approach is essential, as pest species move freely across tenure boundaries and between native forests, plantations, and private land.

#### Pest animal management

Pest animals can significantly affect biodiversity by preying on native species, damaging habitat, and competing with native fauna for food and shelter. They can also cause substantial impacts on rural neighbours through grazing pressure, crop damage, and soil disturbance.

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Effective pest animal management requires coordination across the wider landscape and consideration of all vegetation types, rather than isolated control efforts. The ACT Pest Animal Management Strategy outlines the key principles, objectives, and strategic actions for reducing pest-related impacts. These include prevention, early detection, rapid response, and long-term population control.

PCS Forest Management and District staff work closely with the Invasive Animals and Overabundant Wildlife team to plan and deliver coordinated management programs across plantation estates. These programs may include targeted trapping, strategic ground- or aerial-based control, monitoring of population trends, and collaboration with neighbouring land managers to maximise effectiveness and reduce reinvasion risks.

### **Invasive plant management**

Invasive plants can significantly reduce biodiversity by suppressing the germination, growth, and natural regeneration of native vegetation. Invasive weeds also affect the productivity of plantation areas by competing with young seedlings for light, nutrients, and moisture, which can slow growth rates and increase the time required for trees to reach desired stocking levels.

Invasive plants management in plantation areas is guided by two key documents:

- The ACT Biosecurity Strategy, which provides a whole-of-government framework for preventing, eradicating, and managing the negative social, economic, and environmental impacts of invasive plants across the ACT.
- The ACT Code of Forest Practice, which outlines operational requirements for managing competing weeds within commercial plantation areas, riparian zones, and adjacent native forests. This includes measures such as pre-harvest and post-harvest weed control, hygiene protocols to prevent weed spread, and the protection of sensitive ecological areas.

IPM in the plantation landscape combines regular monitoring, risk-based prioritisation, and evidence-based control methods to protect both biodiversity values and plantation productivity.

### **Pine wildling control**

Pine wildlings have the potential to invade areas of native vegetation adjacent to mature plantations. For this reason, pine wildlings are listed in the ACT Biosecurity Strategy as a species that must be contained.

Wildlings can compromise natural ecosystems and biodiversity and have an adverse visual impact. Pine wildlings are controlled using a range of methods including the use of prescribed fire, commercial harvesting, manual removal and chemical herbicide application. Manual removal is considered the easiest and most effective method of control and if carried out before trees set seed, has the least environmental impact. All pine wildling control programs undertaken by PCS Forest Management staff and contractors is done within the overall context of the ACT Biosecurity Strategy and Australian Weeds Strategy.

Pine wildlings do occur in areas where the government has made the decision to cease commercial plantation management and revert the land to a natural landscape. Strategic management of these areas is considered in various Reserve Management Plans and is not to be confused with routine pine wildling control.

### **Fire management**

Plantation managers are aware of the impact of fire. As well as damage to the valuable commercial timber resource, fire reduces native vegetation cover and habitat, removes nutrients and can change the chemical properties of soil. Increased overland flows following intense bushfires, particularly after storm events accelerate erosion and can result in large quantities of ash, sediment and nutrients being deposited into streams and rivers.

PCS land managers work under the existing bushfire management framework and are committed to protecting life, property, the commercial timber resource, biodiversity and cultural values from high-intensity unplanned fire. The Strategic Bushfire Management Plan (SBMP) sets the high-level bushfire standards in the ACT, and the Bushfire Operations Plan (BOP) is the annual program of works based on risk reduction.

Plantation fuel management zones are additional to the SBMP and are established by PCS Forest Management specifically to protect its timber production assets from unplanned fire. These zones reduce crown fire potential by breaking the fuel ladder. Timely thinning, high pruning and strategic chopper rolling in clear fall operations prior to the declared fire season is consciously undertaken within these identified zones. These zones are mapped and stored in PCS GIS databases and all work is scheduled through the BOP.

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Figure 7: Fire tower in Kowen Forest

**BIODIVERSITY**

**Management considerations:**

PCS Forest Management staff are committed to maintaining **biodiversity values** through:

- Maintaining and consulting a GIS data layer that records the locations of threatened and vulnerable species in and around the plantation estate.
- In consultation with district staff, identify areas of habitat where we have no active management plan in place. Survey values and prioritise areas for treatment.
- Implementing any operational control that is outlined in ACT Code of Forest Practice.
- Undertaking an environmental risk assessment prior to all operations.
- Monitoring, audit and reporting to ensure continuous improvement.

When managing **pest animals** PCS Forest Management staff will:

- Map and report all sightings of pest animals to relevant staff.
- Work with rural and district staff to set priorities for pest animal control in relation to plantation management within the overall PCS strategic framework.
- Monitor, audit and report outcomes to ensure continuous improvement.

When managing **listed weeds** PCS Forest Management staff will:

- Map and report locations ACT listed weeds to relevant staff by referring to the ACT Advisory list of naturalised alien plants – species assessment.
- Work with relevant staff to set priorities for listed weed control in relation to plantation management within the overall PCS strategic framework.
- Provide annual funding for listed weed control within the plantation gross area.
- Monitor, audit and report outcomes to ensure continuous improvement.

When managing **pine wildlings** PCS Forest Management staff will:

- Map the extent of existing pine wildlings in the ACT.
- Work with rural and district staff to set priorities for pine wildling control within the overall PCS strategic framework.
- Provide annual funding to undertake pine wildling control within the Defined Forest Area.
- Monitor, audit and report outcomes to ensure continuous improvement.

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When managing for **bushfires** PCS Forest Management staff will:

- Work with the PCS Fire Management Planning staff to determine and map fuel reduction zones within the Defined Forest Area.
- Work with Fire Management and District staff to set priorities for the BOP within the overall PCS strategic framework.
- Carry out agreed works (listed in BOP) in timely manner.
- Participate in PCS fire suppression and preparedness activities as required.
- Monitor, audit and report outcomes to ensure continuous improvement.

### Soil and water

#### **Objective - maintain functioning streams and riparian zones and ensure sustainability of aquatic ecosystems within plantation areas.**

As with many PCS land management activities, plantation forestry operations have the potential to impact soil and water values.

#### **Water quantity**

All vegetation types have an impact on water quantity (yield) through reducing runoff and infiltration. Grasslands yield the greatest amount of water while a similar yield can be expected between catchments planted to pines and native forests. However, water yield does increase after thinning and clear fall of plantations, therefore over the longer-term plantations yield slightly more water than native forests.

Within plantations, the greatest change in stream flow occurs after clearing and re-establishment (new growth stage). Stream flow is determined by the type, size and location of plantation operation creating the disturbance. Spreading out the age class of plantations throughout the catchment limits the risk of water quantity variations.

The Murray-Darling Basin Plan (2012) provides a coordinated approach to water use across relevant States and the ACT. Each State has set limits on the volume of surface water that can be diverted from the river systems, which is called Sustainable Diversion Limit (SDL). The net uptake of water from commercial plantations in the ACT is capped at 11 GL per year, which equates to approximately 12,000 hectares of plantation.

Unlike other states, the ACT calculates water use based on 'net' abstractions because it returns more than half of its extracted water to the Murray-Darling Basin system. This means the ACT's SDL accounts for both water taken, and water returned to the river, rather than just the total taken. For example, if the ACT extracts 50 GL but returns 30 GL to the Murrumbidgee River after treatment at the Lower Molonglo Water Treatment Plant, its net abstraction is 20 GL.

#### **Soil and water quality**

Studies<sup>4</sup> on the long-term changes in water quality between intensively managed *Pinus radiata* and native forest paired catchments have been undertaken in Victoria and New South Wales. With well-maintained riparian buffers only minor differences in water quality between the two land uses were observed. However, in-stream sediment loads are affected by more than surface vegetation.

Existing gully networks and roads are typically the major sediment sources in catchments and dominate the in-stream sediment loads. To limit this risk, ACT Forests decommissioned many kilometers of poorly located roads after the 2003 bushfires. PCS Forest Management has continued this practice whenever possible and has operational controls in place to manage current plantation activities to limit risks to water quality. These include exclusion buffers, road closures and suspension of harvesting activities when soil is saturated or deemed too wet.

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<sup>4</sup> Holman's P and Bren LJ (2007). Long-term changes in water quality and solute exports in headwater streams of intensively managed radiata pine and natural eucalypt forest catchments in south-eastern Australia. *Forest Ecology and Management* 253: 244 – 261.

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**Soil and water values**

Water quality and quantity are fundamental for river and stream health. Water sustains ecological processes that support native fish, vegetation, wetlands and birdlife. Similarly, many of our own uses depend on suitable water quality for drinking, irrigation, watering stock and recreation.

SOIL AND WATER
<p><b>Management considerations:</b></p> <p>When managing water <b>quantity</b> PCS Forest Management staff will:</p> <ul style="list-style-type: none"> <li>• Prioritise the plantation age class dispersal across the landscape and estate to limit variability in water yield.</li> <li>• Implement operational controls outlined in ACT Code of Forest Practice.</li> </ul> <p>When managing soil and water <b>quality</b> PCS Forest Management staff will:</p> <ul style="list-style-type: none"> <li>• Comply with EPA Authorisation 0288 that allows for timber harvesting.</li> <li>• Implement operational controls outlined in ACT Code of Forest Practice.</li> <li>• Design and maintain road networks and harvesting activities to limit crossings and minimise sediment input into drainage lines.</li> <li>• Rigorously apply wet weather controls and seasonality restrictions on forest operations.</li> <li>• Monitor, audit and report outcomes to ensure continuous improvement.</li> </ul>

**Carbon cycle**

**Objective - maximise carbon stocks within ACT plantations and ensure clear felled areas are re-established as plantations, continuing the cycle of carbon sequestration.**

Trees remove carbon dioxide from the atmosphere and store it in their branches, stems and roots. Approximately half the dry weight of a tree’s biomass is carbon. Carbon sequestration is maximised in forests as trees grow from the age of 10-30 years (approximately). After this time, the rate of sequestration slows until a forest has reached maturity, unless it is harvested.

Timber captures more carbon than is used in the production process (e.g. fuel emissions from site preparation, harvesting and transportation). Plantations are therefore carbon positive, and successive rotations will incrementally increase carbon stocks as highlighted in Figure 8 below.

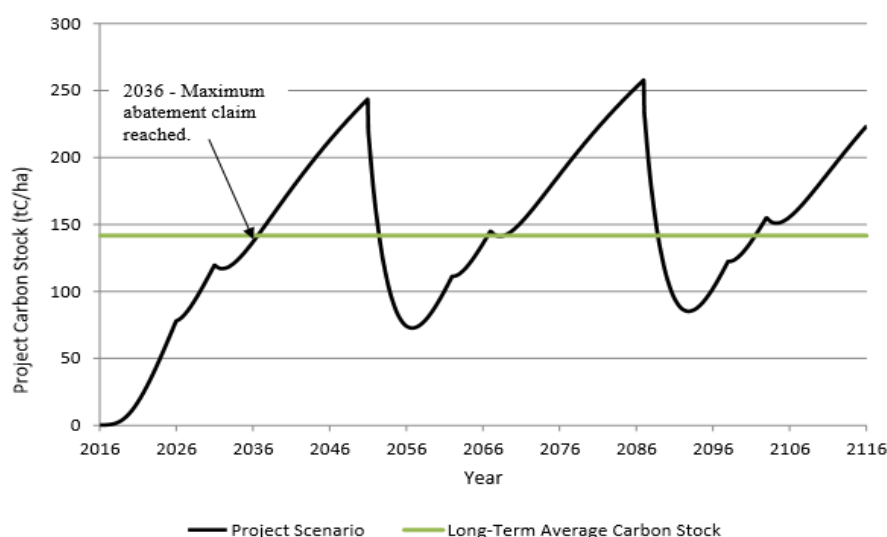


Figure 8: Plantation Carbon Abatement<sup>5</sup>

<sup>5</sup> Department of Environment, Draft Plantation Forestry Carbon Farming Determination, 2017.  
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### Carbon values

- The ACT has a nation-leading target of achieving zero net carbon emissions by 2045. A well-managed and sustainable plantation estate is contributing significantly to this goal.
- Plantations store carbon, during growth and after harvesting in timber with successive rotations incrementally increasing overall carbon stocks. Plantations are valued for their ability to combat climate change.
- The recent carbon farming initiative in Ingledene forest further strengthens this commitment by generating carbon credits and enhancing biodiversity outcomes (see Figure 9). These carbon credits are retired on the market as offsets for ACT emissions.
- Since pine plantations are decreasing – due to land use changes for housing, water catchment, or biodiversity conservation – carbon farming provides a valuable opportunity to compensate for plantation loss by establishing new pine plantations on grasslands or post-grazing areas under this initiative.



Figure 9: Carbon farming initiatives in Ingledene

### CARBON CYCLE

#### Management considerations:

PCS Forest Management recognises the science of climate change and are committed to reducing its damaging trends. When managing for the impacts of **climate change** PCS Forest Management staff will:

- Investigate opportunities for carbon accounting and sales.
- Investigate more opportunities for carbon farming initiatives.
- Maximise timber potential for each plantation through timely silviculture and harvesting.
- Maximise sawlog production for long term carbon storage.

<https://www.environment.gov.au/climate-change/emissions-reduction-fund/methods/draft-methods>

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### Social and cultural values

#### Cultural heritage

**Objective - ensure Aboriginal and other cultural heritage values are included, understood and protected in all aspects of plantation management. Plantation operations will comply with all relevant legislation and requirements to safeguard cultural heritage sites and values.**

Culture is the basis of social identity and cultural heritage is a legacy that each generation receives and passes onto future generations. PCS Forest Management recognises the need to protect cultural heritage in partnership with Government, stakeholders and community groups.

#### Aboriginal heritage

First Nations peoples have lived in the Canberra region for over 20,000 years, dating back to the Ice Age. Under the **Heritage Act 2004**, all Aboriginal heritage includes physical and spiritual sites, places, objects plus native flora and fauna are protected. Under the Act, anyone finding an Aboriginal place or object has an obligation to report it to the ACT Heritage Council via ACT Heritage within five working days. There are also penalties for damaging any Aboriginal place or object.

The ACT is home to a wide range of Aboriginal heritage sites, many of which are discreet yet abundant and not always easy to identify. Thousands of sites have been recorded, with many listed on the ACT Heritage Register. The most common are artefact scatters from open campsites, which often include stone tools, charcoal, animal bones, and ochre. Other types of sites found in the region include scarred trees, rock art, burials, grinding grooves, stone and ochre quarries, wooden artefacts, and sacred landscapes. These places provide valuable insight into the cultural practices and traditions of Aboriginal people.

#### Other cultural heritage

European heritage items and places are those with heritage significance that the community wishes to keep for future generations. European culture heritage is also administered by the ACT Heritage Council via ACT Heritage.

Aboriginal and other cultural heritage sites listed on the ACT Heritage Register are scattered throughout the plantation forests, including areas such as Kowen, Pierces Creek, Uriarra, Ingledene, Miowera, and Gibraltar. Therefore, PCS Forest Management embeds cultural heritage protection into sustainable forestry practice by ensuring Aboriginal and other cultural heritage sites and values are identified and protected in roading, establishment, and harvesting activities.

#### Cultural heritage values

- Cultural heritage is a legacy passed from one generation to the next and forms the basis of social identity.
- Holds strong meaning for a community or cultural group, including First Nations spiritual or ceremonial ties.

#### CULTURAL HERITAGE

##### Management considerations:

PCS Forest Management are committed to the understanding and protection of cultural heritage. When managing **cultural heritage** PCS Forest Management will:

- Request for heritage referral from ACT Heritage prior to any forestry operations.
- Report unregistered cultural heritage places or objects to the ACT Heritage Council via ACT Heritage by referring to Unexpected Finds Procedures.
- Support First Nations staff and work and consult with them to increase awareness of Aboriginal cultural heritage.
- Implement operational controls outlined in ACT Code of Forest Practice, including prescriptions within Works Plans and heritage referral from ACT Heritage.
- Undertake a desktop analysis and risk assessment prior to all operations.
- Monitor, audit and report outcomes to ensure continuous improvement.

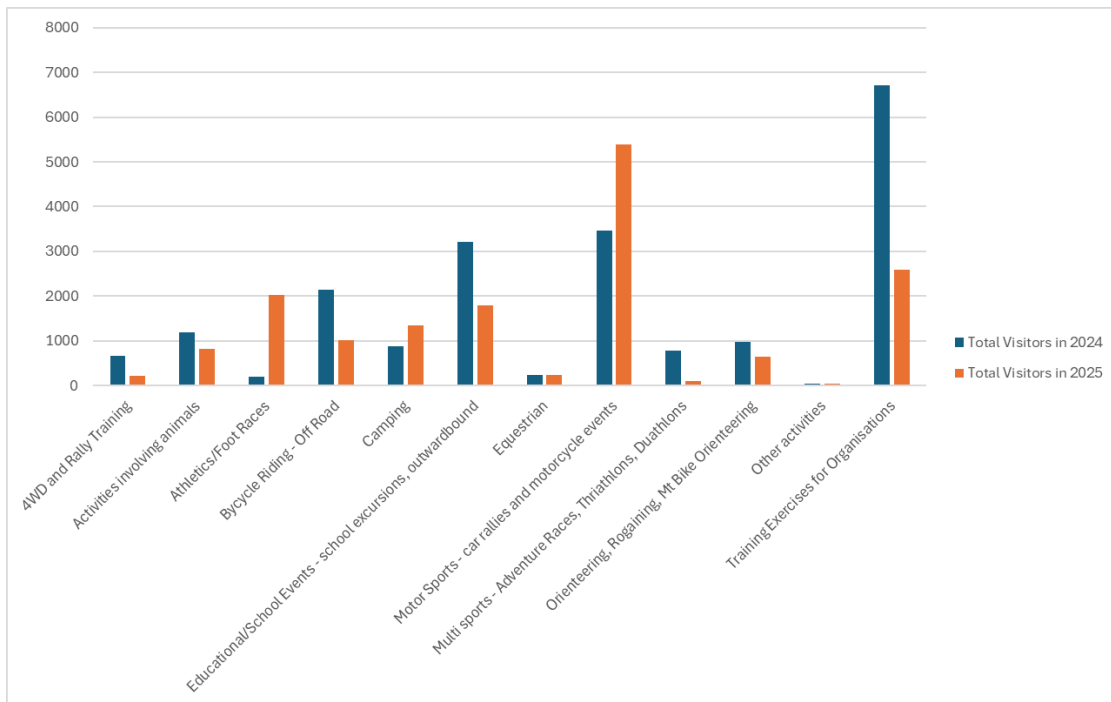
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**Recreation**

**Objective - provide a safe and welcoming environment for a variety of recreation activities and events that support sustainable forest management, while ensuring these uses do not adversely impact the economic viability of forestry investments.**

ACT plantations are extensively used and managed for recreational activities including walking, jogging, horse riding, cycling, motorcycling, dog-sled racing, camping, picnicking, fishing, musical events and car rallies. The number of events and participant usage in plantations is significant and removes high impact activities from the more sensitive native forest areas. This enables PCS Forest Management to balance community needs for recreation with conservation of more natural native landscapes.

Permits are used to facilitate formal recreation activities in the ACT and are issued to both not-for-profit groups and commercial entities. They can be issued for a single day or for longer periods of time. Permits are managed by CED Licencing & Compliance (Public Land Use Permit Team) with input from PCS Forest Management and District staff. However, incidental usage – day use that does not require a permit and occurs within plantations – is difficult to quantify. Figure 10 shows the recreational activities and visitor numbers in ACT plantations recorded in 2024 and 2025.



*Figure 10: Recreational activities and visitor numbers in 2024 and 2025 (Not including lease numbers, i.e. paintball in Fairbairn or Tuggeranong)*

ACT plantations clearly provide high levels of non-market social benefit to the ACT community. This non-market social benefit is difficult to calculate in terms of financial return on investment to the ACT Government; however various studies have been carried out elsewhere to compare the financial value of recreation use in plantations versus the annual return from timber sales. A study<sup>6</sup> in a *radiata pine* plantation close to Adelaide, South Australia, found that recreational benefits from the Mount Lofty Ranges plantations were worth 30 percent of annual timber sales. A similar study<sup>7</sup> in New Zealand found that social benefit delivered a higher financial return in the multi-use Whakarewarewa forest close to the urban interface of Rotorua. In this study, the multi-use plantation of 5,600 hectares is part of a larger 55,000-hectare Whakarewarewa timberland area. These studies found that the majority of plantation recreational use was from the local community rather than

<sup>6</sup> Smailes, P. J. & Smith, D.L. 2001. The growing recreational use of state forest lands in the Adelaide hills. *Land Use Policy*, 18(2): 137–152.

<sup>7</sup> Turner, J.A., Bhubaneswor, D., Yao, R., Barnard, T. & Maunder, C. 2011. Non-timber values from planted forests: Recreation in Whakarewarewa forest. *New Zealand Journal of Forestry*, 55(4): 24–31.

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## SOCIAL AND CULTURAL VALUES

tourists or inter-state visitors. Just like Whakarewarewa forest and the Mount Lofty Ranges forests the ACT plantations adopt a multi-use model where the entire forest is managed concurrently for timber and non-timber values. Plantation forests can also be exclusive to recreational use and Canberra has several examples.

The ACT Government has long recognised the non-market social benefits provided by the former multi-use plantation estate, demonstrated through the development of Mount Stromlo Forest Park, the National Arboretum Canberra and the Majura Pines recreation area. During implementation of this Plan, PCS Forest Management will continue to review recreation policy to ensure that community needs are met and that public investment in recreational infrastructure is well targeted. This includes identifying opportunities to optimise the combined benefits of commercial plantation management—delivered through long-term wood supply agreements—and the non-market social, cultural and recreational values supported by plantation landscapes.

In addition, this policy direction is supported by insights from the visitor experience surveys conducted annually by PCS Visitor and Volunteer Experience Team. The aim of the surveys is to understand visitor profiles, motivations, experiences, and satisfaction across ACT parks, reserves, and plantations. Notably, recent surveys in 2025 found that 91% of visitors agreed or strongly agreed that ACT parks, reserves and plantations meet their need for better health and wellbeing. Furthermore, more than 80% of visitors rated their satisfaction with ease of access, recreation trails, maintenance and cleanliness, and parking as good or very good. Building on these insights, PCS Forest Management will continue collaborating with the Visitor and Volunteer Experience to ensure visitor feedback informs future strategies, balancing recreation and production forestry for the ACT community's long-term benefit.

### Recreation values

- Plantations allow the ACT government to accommodate legitimate high impact activities that are not necessarily compatible with other land tenures across the ACT.
- Recreation creates jobs and benefits the local community through increased tourism.
- Recreation increases personal health and wellbeing.



*Figure 11: Old Kowen Homestead Camping Ground*

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### RECREATION

#### Management considerations:

PCS Forest Management is committed to providing safe places for recreation. When managing non-market social benefit and **recreation** PCS Forest Management staff will:

- Engage with the PCS Visitor and Volunteer Experience Team to enhance recreation opportunities on plantations, visitor information and signage services, and managing commercial tourism.
- Liaise regularly with the PCS District staff to ensure a PCS wide view on recreational activities.
- Respond in a timely manner to all recreation permit requests.
- Ensure all recreation activities and associated infrastructure are planned and managed with consideration for heritage and environmental values, including protection of HCVs, threatened species, riparian zones, soil stability and plantation health.
- Incorporate environmental risk assessments into recreation planning, ensuring seasonal constraints, fire danger periods, wet-weather controls, and sensitive habitat areas are considered before approving or scheduling activities.
- Maintain ongoing communication with all legitimate forest recreational user groups, consulting with them when planning operations and formalising Memorandum of Understanding where appropriate.

### Employment

**Objective – create and maintain local and secure employment opportunities across the forestry value chain – from establishment and silvicultural management to harvesting, haulage, processing, and associated services. By fostering a stable workforce and partnering with regional business, plantations help strengthen the local economy, build skills in sustainable forestry practices, and ensure long-term community benefits.**

Plantations within the ACT region provide significant employment opportunities for local businesses and individuals, supporting a diverse range of activities across the forestry value chain. These include land and forest management, road construction and maintenance, silvicultural operations such as weed control, planting, fertilising, and site preparation, as well as harvesting and transport services. Downstream activities such as sawmilling, wood processing, and mechanical trades further extend the employment footprint of plantation forestry.

According to ABARES' *State of the Forests Report*, Australia's forestry sector directly employs over 51,000 people in forestry and logging, support services, and wood product manufacturing. The Australian Forest Products Association (AFPA) estimates that the broader industry supports 80,000 direct jobs and an additional 100,000 indirect jobs, including contractors, transport operators, and regional service providers. These figures highlight the critical role plantations play in sustaining regional economies and providing secure, long-term employment opportunities.

Plantation operations in the ACT not only create jobs but also fosters skills development in sustainable forest management, mechanical trades, and logistics. By engaging local contractors and businesses, plantations help retain a skilled workforce within the region, reducing reliance on external labour and strengthening community resilience. Employment opportunities span seasonal and ongoing roles, offering pathways for training and career progression in forestry and allied industries.

The ethical treatment of workers is assured through compliance with the Secure Local Jobs Code, which governs procurement and contract management processes in the ACT. This framework ensures that contractors meet high standards of workplace safety, fair wages, and employment conditions, reinforcing the commitment to responsible and sustainable forestry practices.

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**EMPLOYMENT**

**Management considerations:**

PCS Forest Management are committed in providing **employment**. PCS Forest Management staff will:

- Continue creating local jobs by prioritising engagement of ACT-based contractors and service providers for plantation establishment, silviculture operations, roading, harvesting and haulage.
- Support workforce stability and promote skills development in sustainable forestry practices.
- Ensure ethical employment practices by complying with the ACT Secure Local Jobs Code, guaranteeing fair wages, safe working conditions, and responsible procurement processes.
- Encourage diversity in employment by supporting seasonal and ongoing roles across the forestry value chain.
- Strengthen community resilience by retaining skilled workers within the region and contributing to the local economy through sustainable forestry operations.
- Monitor and report on direct employment outcomes to demonstrate the social and economic benefits of plantation forestry and maintain transparency in workforce engagement.
- Recognise and support indirect employment outcomes including opportunities for small businesses through the public land permit system to undertake their activities in the plantation estate.

**Stakeholder engagement**

**Objective - facilitate meaningful engagement with internal and external stakeholders and incorporate their views into plantation management where appropriate. Ensure proactive and respectful engagement with First Nations, recognising cultural heritage values, traditional knowledge, and rights, and integrating these perspectives into decision-making processes to support sustainable and inclusive forest plantation management.**

PCS Forest Management stakeholders include Government directorates, contractors, timber customers, certification auditors, First Nations people, community groups, neighbours, forest users, non-government businesses, research and education partners, and the ACT community. The complete list of stakeholders is recorded and continuously updated in the ACT Forest Management Stakeholders Register, which serves as the central reference for engagement planning and compliance.

The PCS Forest Management acknowledges the positive contribution stakeholders make to forest management. PCS Forest Management staff are committed to facilitating and encouraging meaningful engagement with all stakeholders, including First Nations. This is achieved by providing opportunities for stakeholders to make their views known and by considering and where possible incorporating their ideas into planning processes.

The PCS Forest Management staff engage stakeholders on three levels:

- Formal meetings such as those outlined in the Communications Plan.
- Issues-specific engagement with relevant stakeholder groups.
- Day-to-day interactions, taking appropriate steps to address concerns or issues as they arise during forestry operations.

**First Nations engagement**

First Nations peoples have cared for land, water, and air for tens of thousands of years through Caring for Country, a holistic approach that connects culture, heritage, and ecology. It encompasses relationships with land, water, plants, animals, ancestors, and traditions, ensuring both environmental and cultural health. Working on Country strengthens identity and wellbeing, passing down knowledge through stories and language. In the ACT, Ngunnawal Traditional Custodians actively protect sacred sites and landscapes, keeping cultural values alive for future generations.

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## SOCIAL AND CULTURAL VALUES

PCS Forest Management will continue working with the Traditional Custodian Engagement Team to explore appropriate and meaningful First Nations engagement in forest plantation planning and operations. This includes identifying suitable engagement pathways for plantation activities, considering cultural heritage requirements, exploring opportunities to incorporate cultural knowledge where appropriate, and identifying mechanisms for consultation, collaboration, or partnership that are consistent with ACT Government policies and cultural protocols.

PCS Forest Management also recognises the cultural significance of forests and is committed to respectful and meaningful engagement with First Nations peoples. This commitment is underpinned by the Memorandum of Understanding (MoU) with ACT Natural Resource Management, which provides a framework for collaboration and access to the First Nations Conservation Training Program. The ACT Natural Resource Management aims to foster the engagement and development of Aboriginal and Torres Strait Islander communities through various initiatives. Its key objectives include:

- Ensuring Aboriginal and Torres Strait Islander youth are engaged in employment or education, fostering their growth.
- Promoting strong economic participation and development within these communities to enhance their independence and prosperity.
- Supporting Aboriginal and Torres Strait Islander people in maintaining their cultural, spiritual, physical, and economic relationship with their land and waters.

### STAKEHOLDER ENGAGEMENT

#### Management considerations:

PCS Forest Management are committed to active engagement with **stakeholders** including **First Nations**.

PCS Forest Management staff will:

- Continue to build mechanisms for continued liaison with relevant stakeholders to further develop cooperative working arrangements on matters of mutual concern. These issues include, but are not confined to, recreation, fire management, weed control and stock grazing.
- Provide the opportunity for stakeholders to be involved in monitoring management activities that affect them.
- Maintain transparent communication channels and document stakeholder input for continuous improvement.
- Ensure the PCS Forest Management Stakeholders Register remains current and accessible for planning and audit purposes.
- Continue working with the Traditional Custodian Engagement Team to explore appropriate and meaningful First Nations engagement in forest plantation planning and operations.
- Actively engage First Nations people through the framework established by the MoU with ACT Natural Resource Management, while remaining open to evolving methods of engagement that reflect community preferences and emerging best practices.

### Research and education

#### **Objective - utilise applied research at every opportunity and engage and encourage learning institutions to utilise ACT plantations for research and education purposes.**

Without research, the capacity to advance our knowledge on forest management—including commercial plantations and areas with HCVs—is limited. Research underpins best management practices that safeguard biodiversity, maintain ecosystem services such as water regulation and carbon storage, and support cultural and social values. Without this evidence base, management decisions risk being reactive rather than proactive, leading to poor commercial performance, degraded environmental outcomes, and diminished social benefits for communities that depend on forests.

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## SOCIAL AND CULTURAL VALUES

PCS Forest Management actively support various not-for-profit groups involved in forestry research and development, including:

- Forest and Wood Products Australia (FWPA). The FWPA supports forestry research and development that promotes internationally competitive and environmentally sustainable practice.
- Forestry and Forest Products Committee (FFPC), which consists of government officials from Australian, State, Territory and New Zealand agencies responsible for forestry and/or forest products.
- The Australian Plantation Forest Industry Herbicide Research Consortium, which focuses on sourcing and trialing alternative herbicide products.
- National Sirex Coordination Committee – shares information and provides results of the latest research.
- The Australian National University – research on wood value chains, HCVs, organic fertilisers, etc.

### RESEARCH AND EDUCATION

#### **Management considerations:**

PCS Forest Management are committed to advancing the knowledge and innovation of forests through **research and education**. PCS Forest Management staff will:

- Actively contribute to various not-for-profit groups that focus on forestry research and development.
- Develop and provide education institutions with access to ACT plantations and be available to host forest tours and information sessions.
- Facilitate applied research to improve forest management outcomes.

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## Planning and implementation

Most plantation operations in the ACT are delivered through contract arrangements. Operational control is designed to ensure that day-to-day plantation activities are performed in a manner consistent with the objectives set out in this Plan and in line with Government and community expectations. Regular review of contract performance against Key Performance Indicators (KPIs) in conjunction with suppliers is an essential mechanism for maintaining performance against contractual requirements. Corrective action is taken where performance does not meet standards. This corrective action is not restricted to, but may involve, the provision of additional resources to undertake the task, further training, motivation, and discipline, in the form of an operator stand-down or termination of the contract.

A series of Authorisations, Codes, and Plans is in place to ensure compliance with legislation and the objectives stated in this Plan. These are listed below and must be read in conjunction with this Plan.

- Environmental Authorisation No. 0288 for Forestry Operations, V. 2025
- Environmental Authorisation No. 0002 for Motor Racing Events, V. 2025
- Environmental Authorisation No. 0011 for Chemical Use for Agricultural and Veterinary, V. 2017
- Environmental Authorisation No. 0412 for Hazard Reduction Burning, V 2018
- Plantation Environmental Management Plan (EMP), Version 4, 2023
- ACT Code of Forest Practice
- PCS Forest Management Works Plans

## Annual schedules

In addition to the Code of Forest Practice, PCS Forest Management staff prepare operational schedules of work for planning and budget purposes. These include:

- **Harvesting:** Harvesting schedules are prepared for various planning needs. These include contract agreements, customer (mill) requirements, weather-related constraints and planned recreation events. Harvesting schedules are prepared over various lengths of time.
  - Seventy-year sustainable yield modeling, two rotation lengths.
  - Five-year strategic and tactical planning, in line with timber sales agreements.
  - One-year annual scheduling of harvesting operations.
- **Road maintenance:** Roads required for harvesting are closely aligned with the strategic and annual harvesting schedule. Other non-harvest related road maintenance will be undertaken where the potential for environmental harm or road safety hazards is identified.
- **Fire and fuel management:** Annual schedule of fuel management works is entered in the Bushfire Operations Plan (BOP). The schedule of works is influenced by the need for asset protection within and near the plantation estate and for ecosystem management.
- **Plantation establishment:** An annual schedule is prepared and considers fallow areas, failed plantation areas and budget constraints.
- **Integrated pest control:** The annual schedule considers any issues raised by PCS district staff and outlines priorities within the mapped gross area of plantations. Weed control works fall under the strategic PCS Annual Weeds Operation Plan.

## Data management

PCS Forest Management accesses data for tactical planning, annual scheduling and preparation of works plans. During these planning phases, PCS Forest Management staff identify whether further information is required to assess the impacts of plantation operations. This enables PCS Forest Management staff to implement additional controls to limit site-specific risk.

Specialist plantation management software is used to store and link stand data with GIS spatial data. This provides a powerful tool for planning, analysis and reporting on plantation forest management outcomes. This software is utilised to calculate ACT's sustainable wood flow and inform the annual forest valuation.

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### Works plans

Most work undertaken by PCS Forest Management requires the development of a specific works plan in accordance with the Code of Forest Practice. This includes plantation operations such as timber harvesting, silviculture treatment, roading and bushfire fuel reduction. The works plan is a means of managing risk and providing formal and documented instruction to contract operators and PCS employees.

Each PCS Forest Management works plan includes a GIS-generated operational map that identifies:

- Location, extent and boundaries of the operation.
- Topographic features such as contours and drainage.
- Excluded areas and the reason for the exclusion.
- Haulage roads and tracks.

The written section of the works plan outlines operational objectives, scope of works, area description, operating conditions and relevant approvals. Importantly a risk assessment is performed for each activity, ensuring all environmental, cultural and social aspects of the proposed activity are considered.

Before any operations commence, the relevant forester briefs contractors and their employees on the contents of the works plan. This ensures a common understanding of processes and expected outcomes. In most cases control of the site is then temporarily assigned to the contractor who is then responsible for their own crew and safety management of those who enter the site.

If unexpected items of environmental, heritage, cultural or potential contamination significance are discovered during plantation operations, works must stop immediately and the unexpected finds procedure must be followed. This includes securing the area, notifying the relevant PCS manager, and consulting with the appropriate authority (e.g., ACT Heritage, OCFF, ONC) for directions.

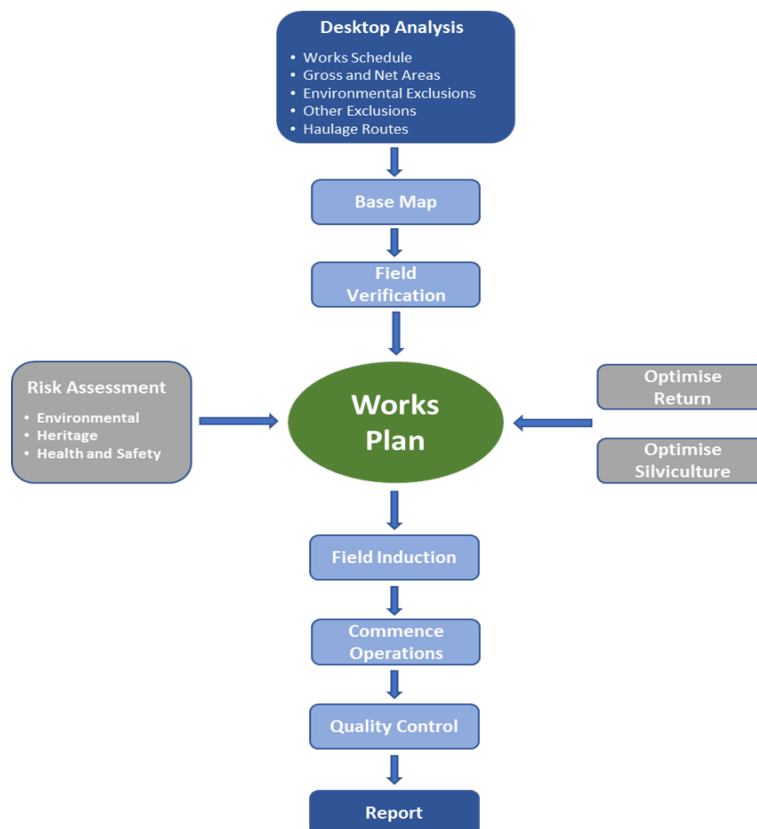


Figure 12: Process undertaken to produce a forestry related Works Plan

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### Monitoring, audit and reporting

Monitoring, audit and reporting are integral to the continuous improvement process and ensuring plantation management objectives are met. The absence of systematic monitoring means when problems arise it is often too late to make meaningful changes.

#### Monitoring

Monitoring refers to the comparison of actual performance against a specified target. The aim of monitoring and reporting on progress is to:

- Control forest operations and assess the performance of suppliers.
- Identify underachievement and non-compliance and determine the course of action required to rectify the situation.
- Identify training or education requirements to ensure suppliers/PCS Forest Management staff are aware of revisions to systems, the Code of Forest Practice, or work plans.
- Record achievement to allow for continued contractor engagement, support the payment for services delivered, and celebrate success.
- Provide information for future revisions/improvement of this Plan and Code of Forest Practice.

Routine or day-to-day monitoring is applied to closely control forest operations, enabling a frequent comparison between work plans and actual outputs. Monitoring guidelines for plantations are set out in operational documents including quality control manuals and standard operating procedures.

PCS Forest Management implements an internal audit program for timber harvesting, log transportation, road construction/maintenance, site preparation, and silviculture activities that assess overall compliance with system requirements and standard operating procedures. This is additional to contractor audits and quality control that the PCS Forest Management staff expects to be carried out by the contractor. Three levels of audit are performed on PCS timber harvesting operations.

- Level 1 – Principal contractor, two-weekly inspection
- Level 2 – PCS monthly inspection
- Level 3 – Third-party inspections with notice, i.e. EPA or safety audits

Under the Environmental Authorisation 0288, PCS is required to maintain a system of recording and reporting non-conformance and complaints in relation to pollution events. A simple recording sheet is utilised for this purpose; refer to 'Non-compliance and Compliant Recording Sheet' in the EMP. The same system is adopted for non-environmental or system non-compliance.

Whenever a non-compliance is identified:

- The incident is recorded and investigated, and the cause of the non-compliance is established.
- Corrective actions are implemented where appropriate.
- Improvements are made to systems to prevent re-occurrence. Provision of additional resources, further training, or adjustments to annual schedules may be necessary.

#### Annual reporting

The PCS Forest Management will annually review its performance against the strategic objectives described in this Plan. The annual report will inform ongoing business planning, budgets, staffing levels, schedule of work and planning updates.

The annual plantation report will provide details on:

- Achievement against annual work schedules.
- Area descriptions, changes to net and gross area.
- Summary of commercial activities such as harvesting and silviculture.
- Summary of environmental activities such as HCV monitoring, pine wildling control and completion of BOP works.
- Summary of social activities, such as recreation usage.
- System improvements are made as part of the planning framework and continuous improvement requirements.

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## Appendix 1 – forestry terms and acronyms

### Forestry Terms

<b>Basal area</b>	Sum of the stem cross sectional area at breast height over bark of all trees growing on one hectare. A parameter used in inventory. Growth and yield estimation expressed in square meters per hectare.
<b>Breast height</b>	Refers to the usual point of measurement of standing tree or stem diameter (1.3 m in Australia) above ground on the uphill side of the tree.
<b>Butt log</b>	The log directly above the stump. This is the biggest diameter log and usually has the greatest unit value of all the logs in a tree.
<b>Chopper roll</b>	A chopper roller is used during site preparation to knock down and chop harvesting debris. Rolling also assists with decomposition and nutrient recycling.
<b>Clear fell</b>	The practice of felling all the trees in each area.
<b>Compartment</b>	A generally contiguous area within a forest defined or recorded on a map. Used as the basic unit of forest record or description.
<b>DBH</b>	Diameter at breast height over bark, commonly used in acronym form. Usually expressed over bark, hence DBH and DBHOB are commonly equivalent terms.
<b>Final crop tree</b>	A tree expected to remain in the stand until the stand is clear felled.
<b>Harvesting</b>	The processes of felling, in-forest processing, and transport of logs to either a skid site or any extend to the loading and cartage of logs to any site outside the forest: also, called logging.
<b>Landing/dump</b>	An area of land in the forest, often specially prepared and surfaced, where logs or tree lengths extracted from the forest are accumulated and further processed by trimming, cutting to length, sorting, marking and stacking, and thereafter loaded onto trucks for removal.
<b>LED</b>	Large end diameter of a log. Usually refers to an under-bark measurement.
<b>Log</b>	Merchantable lengths of the tree stem to be selected at harvesting. Always refers to timber after felling.
<b>Mensuration</b>	The theory and practice of measuring forests, individual trees and logs to determine yields and other parameters.
<b>Merchantable</b>	Defines forest products for which there is a commercial market. A product may be merchantable even if its optimum sales value has not been reached.
<b>Net stocked area</b>	The area of land currently occupied by the tree crop.
<b>Plantation forest</b>	Areas of land predominantly covered in trees grown for cropping and managed for commercial purposes.
<b>Pine wildlings</b>	Pine wildlings are invasive trees growing outside the net stocked area of plantations. Not to be confused with pine regrowth.
<b>Pine regrowth</b>	Regrowth or reforestation is the natural restocking of existing forests from an existing seed bed. Occasionally thinned to plantation stocking to reduce site establishment costs.
<b>Prescription</b>	The specification for the treatment of a growing forest, for example silvicultural or harvesting prescription.
<b>Pruning</b>	The silvicultural practice of removing the lower branches of a tree while the tree is still young to eliminate or prevent the formulation of knots and the deformation of wood. Pruning is also used as bushfire fuel management strategy.
<b>Pulp log</b>	A generally lower grade log used as fibre input to produce pulp and paper or reconstituted wood products.
<b>Residue</b>	The amount of wood left on the ground after harvesting.

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## APPENDIX

<b>Ripping and mounding</b>	A site preparation activity to loosen and elevate soil for tree planting.
<b>Rotation</b>	The length of time a tree is grown before harvesting. Rotation includes the cycle of planting, growing, harvesting, and replanting. The rotation length in the ACT is typically 28-35 years.
<b>Sawlog</b>	A log used in the sawmilling industry to produce a range of products.
<b>SED</b>	Small end diameter of a log. Usually refers to an under-bark measurement.
<b>Seedlings</b>	Small trees grown from seeds in a nursery for planting out to establish a plantation.
<b>Silviculture</b>	The practice of cultivating and tending forest crops is based on the knowledge of forestry. More specifically, managing aspects of plantation establishment and growth.
<b>Site quality</b>	A measure of the productivity of a forest site. It can be expressed in general terms (low, medium, high) or quantified as a Site Index which is the average height of the tallest 50 trees per hectare at 20 years of age.
<b>Scrubbing</b>	Removal of non-plantation trees or shrubs from within the net stock area.
<b>Stand</b>	An area of contiguous trees, generally of the same age and species.
<b>Stem</b>	The major vertical structural member of a tree, the trunk or bole of the tree.
<b>Stocking</b>	Sometime referred to as stems per hectare. Generally, the number of living trees on a hectare of forest.
<b>Stumpage</b>	The value of the timber standing at the stump. Usually expressed in value per cubic meter (or ton).
<b>Thinning</b>	The practice of selecting certain trees for felling and leaving other trees to grow. A thinning 'from below' implies that the smaller trees are removed to enhance growth on the remaining trees.
<b>Windrow</b>	A line of raked harvesting debris laid out to dry and post-harvest burnt.
<b>Woodstock</b>	A proprietary software developed by Remsoft forest modeling.

### List of acronyms used in this Plan

<b>ACT</b>	Australian Capital Territory
<b>AFPA</b>	Australian Forest Products Association
<b>BOP</b>	Bushfire Operations Plan
<b>CED</b>	City and Environment Directorate
<b>EPA</b>	Environment Protection Authority
<b>EMP</b>	Environmental management plan
<b>ESO</b>	Environmental significance opinion
<b>FSC</b>	Forest Stewardship Council
<b>FWPA</b>	Forest and Wood Products Australia
<b>FFPC</b>	Forestry and Forest Products Committee
<b>HCV</b>	High Conservation Values
<b>IMP</b>	Integrated pest management
<b>KPI</b>	Key performance indicators
<b>MoU</b>	Memorandum of understanding
<b>NRM</b>	Natural Resource Management

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<b>OCCF</b>	Office of the Conservator of Flora and Fauna
<b>ONC</b>	Office of Nature Conservation
<b>OOW</b>	Office of Water
<b>PCS</b>	Parks and Conservation Service
<b>PMP</b>	Plantation Management Plan
<b>SBMP</b>	Strategic Bushfire Management Plan
<b>SDL</b>	Sustainable Diversion Limit
<b>TSA</b>	Timber Supply Agreements
<b>TCE</b>	Traditional custodian engagement

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## Appendix 2 – relevant legislation and ACT plans

### Commonwealth legislation

**Environment Protection and Biodiversity Conservation (EPBC) Act 1999** provides for environmental impact assessment for matters of national environmental significance and includes Commonwealth-listed threatened species and ecological communities.

**Fair Work Act 2009** is Australia's national workplace relations law, which established a minimum safety net of entitlements for most employees, including the 11 National Employment Standards (NES) and a national minimum wage.

**National Anti-Corruption Commission Act 2022** establishes the National Anti-Corruption Commission (NACC) to investigate serious or systemic corruption in the Commonwealth public sector. The Act defines what constitutes corrupt conduct, including abusing public office, breaching public trust, or misusing information for personal gain.

**Native Title Act 1993** is a Commonwealth law that recognizes and protects native title for Aboriginal and Torres Strait Islander peoples in Australia. The Act establishes a process for claiming and determining native title rights, aims to balance the rights of Indigenous peoples with those of the non-Indigenous community, and provides for Indigenous Land Use Agreements (ILUAs) to manage interactions on land and water.

**Paid Parental Leave Act 2010** established a national scheme in Australia providing 18 weeks of government-funded Parental Leave Pay (PLP) to eligible primary carers at the national minimum wage, effective from January 1, 2011. The Act's objectives included financial support for carers, improved health outcomes for mothers and children, and promoting workforce participation, work-life balance, and gender equality.

### ACT legislation

**Biosecurity Act 2023** and **Biosecurity Legislation Amendment Bill 2024** are the main legislative frameworks governing biosecurity in the ACT. These laws aim to modernise the management of biosecurity risks, ensuring a flexible and effective system to protect the environment, economy, and community from pests, diseases, industry, and the community to identify and manage biosecurity risks. It also includes reporting requirements, prohibitions on dealing with biosecurity matters, and emergency response procedures.

**Discrimination Act 1991** prohibits discrimination on the basis of certain attributes, such as race, gender, and sexuality.

**Emergencies Act 2004** establishes requirements for fire management in the ACT, including the preparation of the ACT Strategic Bushfire Management Plan.

**Environment Protection Act 1997** provides the regulatory framework to help reduce and eliminate the discharge of pollutants into air, land and water in the ACT. Regulations under the Act determine which water pollutants cause environmental harm to waterways and set water quality standards.

**Government Procurement Act 2001** provides the framework for the procurement of goods and services for the Territory. Secure Local Jobs Code is included in the Act protecting against modern slavery.

**Heavy Vehicle National Law 2012** establishes a national scheme for regulating the use of heavy vehicles that promotes public safety, manages the impact of heavy vehicles, and promotes innovative improvement in productivity of heavy vehicles.

**Heritage Act 2004** establishes a system for the recognition, registration and conservation of natural and cultural heritage places and values.

**Human Rights Act 2004** acknowledges that Aboriginal and Torres Strait Islander peoples hold distinct cultural rights and must not be denied the right to maintain, protect and develop their culture. The Act also recognises their material and economic relationships with the land, waters and other resources.

**Nature Conservation Act 2014** establishes a formal process for the identification and protection of threatened and non-threatened species, and ecological communities. The Act also requires plans of management where the Territory Plan has identified public land. The Act has been reviewed and updated in 2025.

**Pest Plants and Animals Act 2005** lists pest plants and animals and provides for development of pest animal and pest plant management plans.

**Planning Act 2023** allows for the ACT Territory Plan. The Territory Plan is the key statutory planning document in the ACT and provides the policy framework for land administration and planning. The Territory Plan lists development zones and permitted activities within each, however, is not an instrument of approval.

**Planning (Exempt Development) Regulation 2023** includes provisions that exempt plantation forestry operations from requiring Development Approval where they are conducted within an existing plantation, as identified in District Policies and where general exemption criteria are met.

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**Planning and Land Management Act 1988** was proclaimed on 31 January 1989. The Federal Act introduced new arrangements for the planning and development of the Territory. The Act is designed to provide for continuing Commonwealth involvement in the development of the National Capital through self-Government while ensuring the interests of the people of Canberra are fully represented and protected.

**Public Sector Management Act 1994** governs the management of the public sector in the ACT, including the establishment of standards for ACT Government employees.

**Water Resources Act 2007** provides for the sustainable use and management of ACT water resources, the protection of aquatic ecosystems and aquifers from damage and, where practicable, the reversal of past damage.

**Work Health and Safety Act 2011** aim to ensure the health, safety, and welfare of workers in the ACT by establishing standards for workplace health and safety.

**Work Health and Safety Regulation 2011** is a detailed set of rules that supports the Work Health and Safety Act 2011. It applies across Canberra and the ACT and is designed to ensure safe and healthy workplaces by outlining specific duties, procedures, and standards for employers, workers, and other stakeholders.

## ACT planning

**ACT Biosecurity Strategy 2016 -2026** acknowledges that biosecurity is a shared responsibility and sets out recommended strategic directions for all stakeholders in the ACT's biosecurity to work towards over the next ten years. This strategy covers threats to primary industries, the environment, social amenity and human health in both terrestrial and aquatic environments caused by weeds and pest animals, animal pests and diseases, and plant pests and diseases. This strategy does not address chemical issues, food safety, genetically modified organisms, and animal welfare.

**ACT Climate Change Strategy 2019-2025** aims to reduce emissions by 50-60% from 1990 levels by 2025 and achieve net zero emissions by 2045. This strategy outlines a comprehensive approach to addressing climate change, focusing on significant emissions reductions and community resilience. The development of the strategy involved extensive consultation with the community and stakeholders to align with their priorities and expectations.

**ACT Environmental Offsets Policy 2015** outlines the ACT Government's approach to the use of environmental offsets for matters of national environmental significance under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and for ACT protected matters.

**ACT Invasive Plants Operations Plan 2020-2025** aims to identify the invasive plants that cause the most environmental, economic and social damage; stop or slow the spread of these invasive plants; prioritise the protection of the assets that are under immediate threat; undertake control measures that are cost-effective; and evaluate outcomes of control measures.

**ACT Nature Conservation Strategy 2013 – 2023<sup>8</sup>** provides guidance on priorities for investment in management and restoration of natural areas and biodiversity. The strategy states that the Lower Cotter Catchment is a priority for native vegetation restoration. The strategy also states that plantation forests are managed both for timber production and to stabilise large areas of water catchment that were burnt in the 2003 fires (page 13, ACT Nature Conservation Strategy 2013-2023).

Action plans for threatened species/ecological communities under the Nature Conservation Act 2014.

- **Action Plan No. 27:** Woodlands for Wildlife, ACT Lowland Woodland Conservation Strategy. This strategy focuses on lowland woodland in the approximate altitudinal range 600–1000 meters. It includes the threatened Yellow Box–Red Gum Grassy Woodland and threatened species associated with woodland habitat.
- **Action Plan No. 28:** A Vision Splendid of the Grassy Plains Extended, ACT Lowland Native Grassland Conservation Strategy. This strategy focuses on lowland native grassland, generally occurring at altitudes below 625 meters where tree growth is limited by cold air drainage.
- **Action Plan No. 29:** Ribbons of Life: ACT Aquatic Species and Riparian Zone Conservation Strategy. This strategy focuses on aquatic and riparian corridors species in the ACT.

**ACT and NSW Memorandum of Understanding for Regional Collaboration 2023** build on the collaboration between the two jurisdictions including inaugural Memorandum of Understanding (MoU) signed by the respective Ministers in 2011 and resigned in 2016 and 2020. It applies to the ACT and the South East NSW

<sup>8</sup> The ACT Government is preparing for the next Nature Conservation Strategy, which will be in effect from 2026 to 2036. This strategy aims to address the deteriorating grassy ecosystems and the threats posed by urban sprawl. It will include measures to protect high-value areas, restore degraded ecosystems, and ensure that grassy ecosystems are retained. The draft strategy will be open for public comment in early 2026, allowing the community to participate in shaping the future of Canberra's natural environment.

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Region, which referred to as the Canberra Region. This MoU sets out the overall framework within which the ACT and NSW will work together in the delivery of targeted services, economic outcomes and the implementation of policy to cross-border communities.

**ACT Pest Animal Management Strategy 2012–2022** sets out the key principles, objectives and strategic actions for reducing the damage caused by pest animals in the ACT.

**ACT Strategic Bushfire Management Plan 2025-2030** is the document which sets out how bushfire risk is managed in the ACT. The SBMP is a requirement of the Emergency Services Act 2004. It is the overarching document that sets the tone and directs bushfire management throughout the ACT.

**ACT Territory Wide Risk Assessment 2017** is to provide an updated assessment of the emergency risks that the ACT faces both now and into the future. Understanding the current emergency risk profile in the ACT is essential before the priorities for treatment can be determined.

**ACT Water Strategy 2014-2044** guides management of water supply and catchment management. The Strategy has an 11GL per year water allocation for commercial plantations (based on a net stocked area of 12,000ha).

### ACT Code of Forest Practice

The ACT Code of Forest Practice 2005 is currently under review to create a new, fully integrated framework for forest operations within the ACT pine plantation estate. The revised Code will consolidate all operational guidelines – covering roading, silviculture, harvesting, and quality control measures to ensure compliance and continues improvement. This Code provides a set of guidelines and standards designed to maximise the value of the plantation crop while safeguarding key environmental and social and cultural values.

### Relevant plans of management

**Lower Cotter Catchment Reserve Management Plan 2018** has superseded LCC RMP 2007. This plan provides statutory direction under the Nature Conservation Act 2014, which focuses on long-term ecological restoration, water quality protection, cultural heritage, and low-impact recreation. This plan has developed with community consultation and aligned with national ecological restoration standards. Under the Lower Cotter Catchment Reserve Management Plan 2018, forestry operations are subject to strict conditions due to the area's designation as a water supply catchment and its ecological restoration goals.

**Majura Pines Recreation Concept Master Plan 2014** provides a strategic framework for improving and managing the Majura Pines recreation area in response to impacts from Majura Parkway construction, aiming to protect and enhance the site for future use. It incorporates extensive community consultation involving more than 680 participants, who prioritised new trails with varying difficulty, better signage, drinking water points, seating, toilets, and improved parking. The plan proposes constructing a central trunk loop trail, developing downhill mountain bike trails, and installing water facilities and informal rest areas to create a high-quality, multi-use recreation space informed by community needs and environmental considerations.

**Isaacs Ridge Trails Management Plan 2015** was developed to formalise and improve the trail network at Isaacs Ridge in response to safety concerns, unmanaged recreational use, and increasing demand for designated mountain bike facilities; the plan addresses the existence of more than five kilometres of unofficial and unsafe public-built trails, proposes a structured approach to trail development to enhance safety and environmental protection, outlines objectives for managing use and meeting community needs, and builds on earlier community engagement and concept planning undertaken in 2014.

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## Appendix 3 – High Conservation Value areas

The ACT HCV Management Plan<sup>9</sup> outlines how PCS Forest Management identifies, manages, and monitors HCVs within its plantation estate and adjacent to the plantation to meet FSC standards requirements. The FSC definition of HCVs differs to local interpretations so care is required to communicate about HCVs effectively. In summary, HCVs are identified through extensive desktop searches for best available data sets combined with field assessments under the guidance of an FSC-HCV expert in collaboration with ACT ecology, heritage and cultural experts.

### HCV assessment

#### Objectives of assessment

The objectives of this assessment are:

- To identify HCV that occur within or are adjacent to the plantation estate in accordance with the FSC National Forest Stewardship Standard of Australia.
- To include areas of HCV into the Forest Management section's GIS database.
- To establish management and monitoring strategies for identified HCVs.

#### Desktop assessment

The below table represents the desktop assessment results for potential HCV's within or adjacent to each property.

Property	HCV 1	HCV 2	HCV 3	HCV 4	HCV 5	HCV 6
Fairbairn	x	x	x	x	x	✓
Gibraltar	x	x	x	x	x	✓
Ingledene	x	x	x	x	x	✓
Isaacs	x	x	x	x	x	✓
Kowen	x	x	✓	x	x	✓
Majura	x	x	x	x	x	✓
Miowera	x	x	x	x	x	✓
Pierces Creek	✓	x	x	x	x	✓
Stromlo	x	x	x	x	x	✓
Tuggeranong	x	x	x	x	x	✓
Uriarra	x	x	✓	x	x	✓
Uriarra (LCC)	x	x	x	✓	x	x

#### HCV 1 Species diversity

- *Bossiaea grayi* habitat in Pierces Creek Forest
- Orchids habitat in native patches in Kowen Forest

#### HCV 2 Landscape-level ecosystem

- None identified; estate is not large enough to qualify

#### HCV 3 Ecosystems and habitats

- Critically endangered Box-Gum Grassy Woodland in Kowen Forest
- Threatened Natural Temperate Grassland in Sherwood, Uriarra Forest

#### HCV 4 Critical ecosystem services

- Lower Cotter Catchment in Uriarra Forest

#### HCV 5 Community needs

- None identified

#### HCV 6 Cultural values

- Recreational values throughout plantations in ACT, except for LCC Uriarra Forest
- Aboriginal and historic heritage sites require protection.

<sup>9</sup> The ACT HCV Management Plan is available upon request by emailing [ForestEnquiry@act.gov.au](mailto:ForestEnquiry@act.gov.au)

## Field assessment

### General field assessments

Initial Field Assessments have consisted of verification of some threatened vegetation communities, threatened flora records and Aboriginal Heritage Sites. General field assessments are also intended to identify if targeted surveys are required, for example to apply a deliberate, precautionary process of checking for the presence of conservation values that have not yet been identified, mapped or assessed.

### Targeted surveys and/or habitat evaluations

Targeted surveys and/or habitat evaluations will be used where specialist skills are required and unable to be provided by current staff. Where specialist skills are required, these will be performed by qualified experts and/or other suitably trained individuals in accordance with scientifically rigorous methods. These surveys will be undertaken in order to identify any unknown values, calibrate desktop assessments, inform landscape planning, apply the precautionary principle, inform operational management responses and monitor the effectiveness of management measures.

### HCV monitoring plots

Orchids in Kowen Forest, threatened Natural Temperate Grassland in Uriarra, *Bossiaea grayi* in Pieces Creek

## HCV management strategies

### General HCV management strategies

The precautionary principle is explicitly and centrally embedded in the FSC HCV process. General HCV protection, maintenance and/or enhancement management strategies include:

- Identify these values as exclusion zones on operational maps.
- Flag the presence of these values and protective functions in the operational plans.
- Flag the presence of these values and protective functions in site specific risk assessments.
- Where necessary, mark these on the ground with paint or flagging tape.
- Management prescriptions included within operational plans and are communicated effectively to all operational staff and contractors by showing them these values and outlining protective functions.
- Prescriptions shall be consistent with those specified in recovery/action plans developed under Commonwealth and State legislative procedures.
- Contractor induction to operational plans requires sign off that they understand all the requirements and conditions contained within the operational plans.
- Reserves, exclusion zones and areas of HCV have been mapped accurately on Forest Management section's internal maps to ensure protection during forest operations.
- Monitor the implementation of management prescriptions whilst undertaking routine monitoring and periodic auditing of forest operations.
- Recommendations from ecological specialists regarding biodiversity enhancement and monitoring are formally integrated into HCV management strategies and progressively applied in the plantation estate.
- Areas containing hollow bearing trees will be monitored and retained for the presence of threatened species.
- Livestock will generally be excluded from all HCV areas to protect from damage and allow natural regeneration unless recommended for ecological reasons to support HCV management.
- Areas will be monitored for illegal firewood harvesting and human interference.
- All dead and live nesting trees and hollow bearing trees to be retained and protected.
- Any revegetation works should include species natural to the area.
- Areas of HCV will be monitored for the presence of ACT listed weeds and managed accordingly.
- Control of pest animals.

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Protective measures can include (but is not restricted to) any of the following:

Protective Measure	Protecting what	Operational Activity
Increased operational buffers	Known sites and habitat; Aboriginal and non-Aboriginal values	Chemical application; timber harvesting; road construction; site preparation; quarrying
Altered truck routes	Breeding locations during breeding season; foraging locations	Timber harvesting; road construction
Use of alternate chemical types	Known sites and habitat	Chemical application
Machinery exclusion zones	Known sites and habitat; Aboriginal and non-Aboriginal values; soil and water values	Timber harvesting; road construction; site preparation; quarrying
Spraying exclusion zones	Known sites and habitat	Chemical application
Changed time of year for activities	Breeding locations; foraging locations	Timber harvesting; road construction
Increased time between adjacent operational activities	Breeding locations; foraging locations; migration patterns	Timber harvesting
Machinery washdown	Known sites and habitat; breeding locations; hygiene	Timber harvesting; road construction and/or maintenance; site preparation; quarrying
Altered directional felling	Known sites and habitat; breeding locations; foraging locations; Aboriginal and non-Aboriginal values; soil and water values	Timber harvesting
Properly constructed and/or designated crossings for forwarding	Known sites and habitat; breeding locations; migration patterns; soil and water values	Timber harvesting
Altered road location	Known sites and habitat; breeding locations; Aboriginal and non-Aboriginal values; soil and water values	Road construction
Altered crossing type or size	Known sites and habitat; breeding locations; migration patterns; Aboriginal and non-Aboriginal values, soil and water values	Road construction

**Biodiversity, HCV and native vegetation enhancement**

PCS Forest Management will identify opportunities for enhancement of biodiversity, HCV and native vegetation values throughout either operational planning or through the monitoring of biodiversity, HCV and native vegetation program. Enhancement can take the form of any of the following under appropriate guidance:

- Environmental plantings
- Weed control
- Ecological burning, ground disturbance or seed sowing
- Pine wildling removal
- Erosion control works
- Depositing course woody debris
- Pest/vermin control
- Riparian/swamp rehabilitation
- Cultural burning
- Exclusion works
- Hollow creation
- Habitat creation

Enhancement works will be managed within operational plans and prescriptions, to ensure that these works are managed carefully and do not have a deleterious impact on the values being managed/enhanced.

An example of appropriate guidance to enhance biodiversity values is the *Nature Conservation (Protection of Burrowing Animals During Development) Conservator Guidelines 2025*. The guideline protects all native burrowing species and is available from the [ACT Legislation Register – N12025-83](#).

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