Submission No 19

INQUIRY INTO LONG TERM SUSTAINABILITY AND FUTURE OF THE TIMBER AND FOREST PRODUCTS INDUSTRY

Organisation: NSW Government

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NSW Government Submission to the Portfolio Committee No. 4 – Inquiry into the long-term sustainability and future of the timber and forest products industry

PREPARED BY THE NSW GOVERNMENT

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NSW GOVERNMENT

Introduction

The NSW Government welcomes the Portfolio Committee No. 4 Industry review into the long-term sustainability and future of the timber and forest products industry, and the role of the Forestry Corporation of NSW (Forestry Corporation) and other government agencies in supporting the industry.

This submission sets out the range of actions that the NSW Government is taking to ensure that NSW has a sustainably managed forest estate that underpins a dynamic, economically efficient forestry industry, which continues to support regional economies and delivers social and environmental benefits. This includes the specific actions it is taking in relation to the industry and the environment following the 2019/20 bushfires. In addition, it sets out the roles and efforts of Forestry Corporation and the relevant government agencies to deliver the forest management frameworks of NSW.

The Submission is structured as:

1. Governance and regulatory arrangements
2. Sustainable forestry data and research
3. Timber supply
4. Government support for the forestry industry

The Submission provides links to publicly available information where they exist and provides either links or references to supporting data and research.

Governance and regulatory arrangements

Legislative requirements and regulatory settings

Forestry and forests in NSW are administered by a number of State Government agencies and authorities and applies to both public and private land tenures. The key NSW laws that relate to forest management in NSW are the:

- *Forestry Act 2012* which provides for regulation of forestry operations on State forests and other Crown-timber lands and the delivery of ecologically sustainable forest management (ESFM). The Act also prescribes the Forestry Corporation as the land manager of Crown-timber land and allows for the dedication of flora reserves in State forests.
- *Biodiversity Conservation Act 2016* which provides for the maintenance of a healthy, productive and resilient environment, consistent with the principles of ecologically sustainable development, and includes the listing of threatened species (flora and fauna), threatened ecological communities, and threatening processes, and voluntary conservation measures for private land. It also provides the Environment Protection Authority (EPA)'s enforcement powers and compliance tools to regulate public and private native forestry. Defences for harming animals and damaging plants and habitat are provided where forestry operations have been carried out, and are compliant with, an Integrated Forestry Operations Approval (IFOA) or a Private Native Forestry (PNF) Plan and PNF Code of Practice.
- *Protection of the Environment Operations Act 1997* aims to protect, restore and enhance the quality of the environment of NSW and prevent the degradation of the environment. Its companion administrative Act establishes statutory responsibilities for the EPA to deliver on these objectives. A defence for polluting waters is provided where forestry operations have been carried out, and are complaint with, an IFOA or a PNF Plan and PNF Code of Practice.
- *National Parks and Wildlife Act 1974* which prescribes management requirements for the majority of the NSW public reserve system and the protection and management of Aboriginal heritage.
- *Plantations and Reafforestation Act 1999* and Plantations and Reafforestation (Code) Regulation 2001, which together provide for the authorisation and regulation of plantations and plantation operations on public or private land.
- *Local Land Services Act 2013* which provides for the regulation of native vegetation management on private land and the authorisation and regulation of private native forestry operations. This includes the delivery of ESFM on private forests.

Forestry management in NSW has, at its core, four primary elements:

1. A Comprehensive, Adequate and Representative (CAR) reserve system that securely protects forest environment and heritage values on public and private land
2. A system for managing and regulating native forestry on public and private land
3. A system for authorising and regulating plantation operations on public and private land

4. A system for managing forests outside reserves in a manner that contributes to sustainable environmental, social and economic outcomes.

Detailed information about forest management in NSW can be found in the NSW Forest Management Framework, available at https://www.dpi.nsw.gov.au/forestry/regional-framework.

National Forest Policy Statement

NSW is signatory to the policy statement, which commits to the sustainable management of all Australian forests, whether the forest is on public or private land, or reserved or available for production. This includes:

- The unique character of the Australian forested landscape and the integrity and biological diversity of its associated environment is retained.
- The total area of forest is increased.
- There is a 'holistic' approach to managing forests for all their values and uses so as to optimise benefits to the community.
- Private forests are managed in an ecologically sustainable manner and in close cooperation with public forest managers, to complement the conservation and commercial objectives of public forests.
- A range of sustainable forest-based industries, founded on excellence and innovation, will be expanding to contribute further to regional and national economic and employment growth.
- Forests and their resources are used in an efficient, environmentally sensitive and sustainable manner.
- Forest management is effective and responsive to the community.
- The Australian community will have a sound understanding of the values of forests and sustainable forest management and will participate in decision-making processes relating to forest use and management.

Further information on the National Forest Policy Statement is at https://www.agriculture.gov.au/forestry/policies/forest-policy-statement

NSW Regional Forest Agreements (RFAs)

RFAs are long-term agreements between the Australian and NSW Governments for the sustainable management and conservation of Australia's native forests and to provide for the long-term stability of forests and forest industries.

The RFAs seek to balance economic, social and environmental demands on forests by setting obligations and commitments for forest management that deliver:

- certainty of resource access and supply to industry – building investment confidence
- ecologically sustainable forest management – ensuring forests are appropriately managed and regenerated

- an expanded and permanent forest conservation estate – to provide for the protection of Australia's unique forest biodiversity.

The NSW and Commonwealth Governments signed RFAs for the Eden, North East and Southern regions of NSW, on 26 August 1999, 31 March 2000 and 24 April 2001 respectively. The NSW RFAs were renewed and extended on 28 November 2018 following assessment, public consultation, independent review and consideration. The RFAs will now go through a comprehensive statutory review every 5 years with all relevant agencies involved.

Further information on the RFAs is available at https://www.dpi.nsw.gov.au/forestry/regional-framework

Further information about NSW Government agency responsibilities for forest management and monitoring in RFA regions is available here: https://www.nrc.nsw.gov.au/rfamerplan/accountability-roles

Integrated Forestry Operations Approvals (IFOAs)

IFOAs set the environmental rules for how forestry operations can be carried out on native State forests and Crown-timber lands in NSW. They include rules to protect native plants, animals, important habitat and ecosystems, soils and water in native forestry operations on public land. They also set requirements to achieve ESFM in NSW.

There are four IFOAs in NSW, covering the Coastal, Brigalow Nandewar, Riverina Red Gum and South Western Cypress regions. The IFOAs were made in 2018, 2010, 2011 and 2011 respectively.

More information on the IFOAs is at https://www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals.

Government Agencies

Forestry in NSW can be divided into the following types:

- Native forestry – harvesting native trees from State forests. This is the responsibility of Forestry Corporation of NSW.
- Private Native Forestry (PNF) – harvesting of native timber on private land, and managed by the landowner
- Plantation Forestry – includes both public and private plantations, and both native and exotic species (softwoods and hardwoods). In NSW plantations can only be established on essentially cleared land.

The key NSW Government agencies responsible for forestry are the Department of Primary Industries, Department of Planning, Industry & Environment (including the NSW Environment Protection Authority and Environment, Energy and Science), and Local Land Services. Forestry Corporation is a State-owned corporation that manages State forests.

Department of Primary Industries (DPI) is responsible for:

- Forest industries development
- Plantation approvals and regulation on both public and private land
- Forest science, both plantations and native forestry including biosecurity
- Leading forestry policy advice, both plantations and native forestry
- Strategic policy advice, advocacy and development of Cabinet and parliamentary initiatives

NSW Environment Protection Authority is an independent environmental regulator responsible for:

- Protection of ecological values in native forestry operations on both public and private land
- Monitoring forestry operations and enforcement of Integrated Forestry Operations Approvals (IFOAs) and Private Native Forestry (PNF) approvals
- Regulatory and strategic policy advice, advocacy and development of Cabinet and parliamentary initiatives

Local Land Services is responsible for:

- Industry policy advice where it relates to PNF, including leading reviews of the PNF Codes of Practice
- Extension and support services, to provide landholders a one stop shop for land management advice

Environment, Energy and Science (including National Parks and Wildlife Service, under the Department of Planning, Industry and Environment) forest management responsibilities include:

- Management of the NSW National Park estate, including World Heritage areas and Wetlands of International Significance
- Monitoring and reporting on activities and forest assets within the national reserve system and areas incorporating Matters of National Environmental Significance including outstanding universal values in world heritage properties
- Leads wildlife, biodiversity, ecosystem and conservation policy, research and programs, including through the Saving Our Species Program
- Protect threatened species and communities (including through Saving our Species, the NSW Government threatened species conservation program, which is currently working with State Forests on conservation actions for 26 species at 50 unique sites)
- Assess status of species, communities, populations and habitat, and listing under the *Biodiversity Conservation Act*
- Native vegetation mapping, including the mapping of threatened ecological communities on State Forests
- Provide environmental and economic science and research services

- Maintain and manage NSW BioNet and SEED data portal.

Forestry Corporation is a state-owned corporation, managing native and plantation forests to supply a sustainable source of timber to the State's timber industry. Forestry Corporation has an independent Board of Directors and reports to the shareholder Ministers – the Treasurer and the Minister for Small Business and Finance. Forestry Corporation also report to the Minister for Regional NSW, Industries and Trade as their portfolio Minister.

Forestry Corporation has responsibility for managing 2,164,951 hectares of land, which is primarily State forests with small areas of freehold and private land managed through joint investment partnerships. This land estate includes native forests and hardwood and softwood timber plantations and represents about 10 per cent of the forested land in NSW.

In line with the Forestry Act 2012, Forestry Corporation balances environmental conservation and community recreation with timber production supporting regional jobs and access for other primary industries such as grazing and beekeeping.

As a state-owned corporation Forestry Corporation aims to return a dividend to the NSW Government. The NSW Government contributes approximately $18 million per year in Community Service Obligation funding to Forestry Corporation as a fee for service for land management activities including fire management on non-productive land, management of pests and weeds, tourism and non-commercial public roads across the estate. The total cost of land management is largely offset by revenue from timber production.

Forestry Corporation's forest management is certified to the Australian Standard for Sustainable Forestry Management (AS4708:2013). This standard, known as the Responsible Wood Standard, has been recognised through the international Programme for Endorsement of Certification Scheme (PEFC), which guarantees that timber has been grown and harvested from a sustainable forest.

Sustainable Forestry Data and Research

DPI Forest science research

The Forest Science Unit of DPI is responsible for evidence-based forest research that supports the sustainable use of NSW's native forests and productive plantations. The unit has extensive technical expertise and capability in field-based research, biometrics, spatial modelling, remote sensing, GIS and cost-benefit analysis. Research groups within the Forest Science Unit include:

- Forest Carbon
- Forest Ecology
- Forest Health and Biosecurity
- Forest Resources

The unit's science-based research outcomes play a key role in shaping policy, industry and environment management decisions that share a common aim: ecologically sustainable forest management through active and adaptive management.

Much of the work carried out by the unit is publicly available through peer reviewed scientific publications. For example, a large number of publications on the impact and sustainability of native timber harvesting are available with detailed data on target species in specific regions.

Examples of recent published threatened species research include Hastings River Mouse, Eastern Pygmy Possum and a variety of bat species.[1]

Koala occupancy and activity in forestry areas have been the focus of recent research and Law et al. (2018)[2]. Current research includes GPS tracking individual koalas and estimating koala density before and after harvesting with results soon to be available.

The effectiveness of mitigation measures to reduce harvesting impact (such as browse tree retention for koalas or hollow tree retention for hollow-dependent species) was

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[1] see for example Threlfall C. G., Law B., Colman N. (2021) The effects of harvest frequency on coarse woody debris and its use by fauna. Wildlife Research , -.
Baker A.G., Catterall C., Benkendorff K., Law B. (2021) No room to move: bat response to rainforest expansion into long-unburnt eucalypt forest. Pacific Conservation Biology 27, 13-26.
Law, B., Gonsalves, L., McConville, A. and Tap, P. (2021), Landscape monitoring reveals initial trends in occupancy and activity of bats in multiple-use forests. Austral Ecology, 46: 261-276. https://doi.org/10.1111/aec.12976

[2] Law BS, Brassil T, Gonsalves L, Roe P, Truskinger A, McConville A (2018) Passive acoustics and sound recognition provide new insights on status and resilience of an iconic endangered marsupial (koala Phascolarctos cinereus) to timber harvesting. PLoS ONE 13(10): e0205075. https://doi.org/10.1371/journal.pone.0205075

reviewed by Slade and Law (2016 – Australian Zoologist)[3]. It called for greater emphasis to be placed on landscape monitoring of biodiversity as a means of assessing the changing status of species and combined effectiveness of protections at a landscape scale.

An analysis of the first five years of landscape monitoring in the Pilliga forests has just been published in Austral Ecology[4]. It focused on bat species and found no direct effects of forestry on the monitored species in the trends.

A timely report on fire severity in harvested areas affected by the 2019/20 bushfires is also available on the DPI website at https://www.dpi.nsw.gov.au/forestry/science.

Further recent selected DPI Forest Science publications related to ESFM are listed in **Appendix A**.

EPA forest and science research

The NSW EPA is responsible for evidence-based forest research, programs, data and intelligence to guide the regulation of native forestry, and to improve the identification and protection of our environment.

The EPA has delivered:

- Pilot studies on koala habitat mapping and the delivery of koala occupancy and habitat mapping (in partnership with EES and DPI)Threatened ecological community mapping for the communities most impacted by forestry operations
- Technical reviews of regeneration standards to apply to the Coastal IFOA
- Technology programs to increase public access to forestry data, including an IFOA map viewer that displays GIS information on the environmental protections that apply to forestry operations on State Forest
- Reviews on the environmental impacts posed by the bushfires on the forestry estate.

Further information on EPAs data and research is at https://www.epa.nsw.gov.au/your-environment/native-forestry

A link to the IFOA map viewer is at https://webmap.environment.nsw.gov.au/Html5Viewer291/index.html?viewer=IFOA_viewer

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[3] Slade, C. and Law, B. (2017) The other half of the coastal State Forest estate in New South Wales; the value of informal forest reserves for conservation. Australian Zoologist 39: 359-370.

[4] Law, B., Gonsalves, L., McConville, A. and Tap, P. (2021), Landscape monitoring reveals initial trends in occupancy and activity of bats in multiple-use forests. Austral Ecology, 46: 261-276. https://doi.org/10.1111/aec.12976

Environment, Energy and Science research

The Environment, Energy and Science (EES) group within the Department of Planning, Industry and Environment conducts research across a range of areas relating to the health of the NSW environment. Areas covered include climate change, pollution, land and biodiversity and water. Forest related projects include:

- Growth stage and rainforest mapping
- Classification and mapping of standardised Plant Community Types for monitoring forest extent and improved forest type mapping
- Modelling and mapping of Threatened Ecological Communities (on behalf of the NSW EPA)
- Koala habitat suitability modelling
- Enhanced Remote Piloted Aircraft (RPA) based survey methods for aboreal mammals including Koalas[5]
- Fire Ecological carrying capacity modelling including predicting impacts of climate change
- Terrestrial LiDAR for forest structure/condition monitoring
- Extent and Severity Mapping including spectral recovery of burnt canopies.

Biodiversity Indicator Program

The Biodiversity Indicator Program (BIP) is NSW Government's flagship biodiversity monitoring program. The BIP is a framework to inform strategic data collection, knowledge synthesis and outlook reporting required under the *NSW Biodiversity Conservation Act 2016.* The technical method and suite of indicators is cutting edge science that brings together field monitoring, environmental modelling and remote sensing to assess and report on the status and trends of biodiversity across New South Wales. In May 2020, EES published the first state-wide assessment of NSW biodiversity. The Biodiversity Outlook Report is vital for the future management of the NSW environment, including forested lands, as it will allow us to detect and measure the status and trends of biodiversity in future assessments and in response to environmental events.

An extensive list of EES research and publications is available at https://www.environment.nsw.gov.au/research-and-publications/publications-search

[5] Witt RR, Beranek CT, Howell LG, Ryan SA, Clulow J, et al. (2020) Real-time drone derived thermal imagery outperforms traditional survey methods for an arboreal forest mammal. PLOS ONE 15(11): e0242204. https://doi.org/10.1371/journal.pone.0242204

NRC forest management research and reviews

Koala research

The NSW Government has asked the Natural Resources Commission (NRC) to oversee an independent research program to better understand how koala populations on the North Coast are responding to native forest harvesting. Three research projects are being undertaken that will focus on:

- the nutritional value of koala habitat (led by researchers at the Australian National University),
- koala diet composition and quality (led by researchers at Western Sydney University) and
- koala population density using acoustic sensors and DNA (led by researchers at the DPI Forest Science Unit).

More information on the NRC's research program is available at: https://www.nrc.nsw.gov.au/koala-research.

Through the NSW Koala Strategy, the NSW Government is investing funds for priority koala-focused research delivered under the 10-year NSW Koala Research Plan (OEH 2019). In response to a call for proposals released in early 2019, grants have been awarded to ten projects, with a total value of $1.93 million.

Descriptions of the projects can be found at https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy/nsw-koala-research-plan.

Forest Monitoring and Improvement Program

Independently led by the Natural Resources Commission, the NSW Government Forest Monitoring and Improvement Program will deliver information and evidence to support the strategic and adaptive management of forests and forest practices on both public and private land.

It will provide independent advice to forest managers in NSW on how policies and on-ground management can be improved, through evaluation of forest monitoring data, performance benchmarking and research. This work will also help address state-wide evaluation questions on forest extent, condition and health, including whether timber is harvested from NSW forests in a sustainable manner.

More information about the program is available at: https://www.nrc.nsw.gov.au/fmip

Timber supply

Timber demand and supply data

Demand

Figures from the NSW Forestry Industry Roadmap state that NSW's population will grow by 100,500 people on average each year to 2031. Sydney's population alone is set to increase to 5.86 million by 2031, which means more than 660,000 new homes need to be built.

Overall consumption of forest products in Australia has risen over the past 40 years. Consumption per capita of wood-based panel products has increased by more than 150 per cent, while consumption per capita of paper and paperboard products has increased by about 40 per cent over the same period.

Australia imports more forest products than it exports. With an average annual trade deficit of $2 billion, our local forestry industry is competing with cheaper imports from countries where environmental standards are often inferior.

Lifecycle analysis by Forest and Wood Products Australia shows the production of wood products uses less energy (usually sourced from finite fossil fuels) compared with other building materials that can be used in its place. Further information at Life Cycle Analysis | WoodSolutions. The renewable nature of timber products is expected to strengthen demand in the coming years.

Supply

Timber from NSW State forests is allocated via long term wood supply agreements (WSAs) or timber supply agreements (TSAs). Some timber is sold on shorter term parcel sale agreements. WSAs for native forests are published on Forestry Corporation's website providing transparency of timber allocations. See https://www.forestrycorporation.com.au/about/sales-and-supply TSAs for softwood plantations are not published due to the heightened commercial environment in which softwood is sold. Forestry Corporation is only one of a number of forest managers and timber supply sources in NSW.

An annual plan of operations and harvest plans for native forests are published on the Forestry Corporation website in the Plan Portal at: https://www.forestrycorporation.com.au/operations/harvest-plans Harvest plans include information on expected timber yields.

Timber supply from State forests is reported on annually in Forestry Corporation's Sustainability Report. See https://www.forestrycorporation.com.au/about/pubs/corporate/sustainability-reports

Force majeure

Following the 2019-20 bushfires, Forestry Corporation declared force majeure on its timber supply and harvest and haulage contracts in fire affected areas of both hardwood forests and softwood plantations. However, these force majeure declarations do not relieve Forestry Corporation or the State of NSW of obligations to endeavour to meet these contracts when the force majeure event(s) cease to exist and there is consequently no legal impediment to so doing.

Extent of sustainable forestry

All areas harvested in NSW State forests are re-grown. In addition to natural regeneration of native forests, over 14 million seedlings[6] are replanted in plantations each year.

In native forests, harvesting only takes place in forests which have a history of previously been harvested and re-grown. Harvesting of old growth forests is not permitted in any NSW forest under strict regulations and does not occur.

Under the Regional Forest Agreements, NSW is committed to establishing and maintaining a comprehensive, adequate and representative (CAR) reserve system. To achieve that, more than 80 per cent of public forests are permanently set aside in national parks and reserves. The State forest estate is designated for sustainable timber production while also contributing to the CAR reserve system though a mosaic of reserves and strict regulations protecting important forest features on this tenure. In the 2-million-hectare State forest estate, close to half of the estate is set aside in permanent reserves which cannot be harvested.

Along the coast of NSW, there are approximately 3.6 million hectares of national parks, 1.3 million hectares of native State forests and 18,000 hectares of hardwood plantations. Harvesting operations take place in around 1 per cent of the native State forest estate each year and those operations are distributed across that area in accordance with IFOA requirements. Clear-felling does not take place in native State forests. Once harvesting is completed, retained trees and soil seed reserves enable harvested areas to regenerate, providing long-term wildlife habitat and sustainable timber resources for the future.

[6] From 2021, 14 million seedlings are to be planted each year for 7 years to replenish fire affected plantations as a result of the 2019/20 bushfires

Sustainable yield modelling

The sustainable yield from State forests is regularly calculated to ensure the ongoing sustainability of the forest timber production cycle. Regional Forest Agreements (RFAs) and the IFOAs set out how sustainable yield is to be determined, reviewed and periodically updated in NSW RFA regions. NSW has committed to manage the availability of timber resources for the State forest estate in each RFA region in accordance with ESFM principles and within sustainable yield limits, including to:

- take account of climate risks and adaptation responses
- ensure that the resource model used to determine sustainable yield is maintained and continually improved
- provide periodic reviews of wood product yields (comparing actual volumes harvested against predicted/modelled volumes)
- undertake and make publicly available independent reviews of sustainable yield estimates during each five-yearly review period under the RFAs.

In plantations, large areas are planted with trees of the same age and species and the sustainable yield is calculated using data about the size of the area planted, the age of the trees, management activities and growth rates.

Native forests maintain a natural structure, with trees of different species and ages naturally germinating and growing side by side, some of which are set aside for habitat, biodiversity and waterway protection and others of which are periodically harvested for renewable timber. Different tree species are found in different forests and grow at different rates, so the models reflect:

- the proportion of the overall forest and of each harvest area that is set aside under environmental regulations that protect wildlife habitat, rainforest, old growth, riparian zones and other important ecological features across the landscape
- measurements from thousands of randomly located plots where the size, quality and species of all trees are recorded
- growth rates from trees in special permanent plots which have been re-measured regularly to track their development

- operational data on the volume of timber harvested in the areas set aside.

This data generates detailed models that show how much timber of which types and species can be responsibly harvested in each region each year to ensure that the amount of timber available in the forest does not decline over the long term (100 years). The sustainable yield does not model the number of trees in the forests, rather it models the quality and quantity of timber that can be produced from State forests that are identified for timber production, in compliance with the strict environmental regulations.

Forestry Corporation has undertaken Sustainable Yield modelling for both hardwood forests and softwood plantations in the State forest estate following the 2019/20 bushfires.

Early resource analysis of the fire-affected softwood plantation estate reveals a significant decline in wood supply for an extended period. The total supply will drop from approximately 4 million tonnes per annum (Mtpa) before the fires to 3 Mtpa after the fire salvage period.

A report on the modelling of fire impacts[7] on hardwood production was released in March 2021. The report shows projected reductions between four percent and 30 percent across regions as detailed in the table below.

Annualised sustained yield for first three reporting periods			
RFA region	**Year range**	**High-quality logs (m3)**	**Modelled Reduction due to fire Impacts %**
North East	2020 - 2031	230,000	4%
Eden	2020 - 2034	22,700	13%
South Coast	2020 - 2034	35,000	30%
Tumut	2020 - 2034	25,800	27%

The full report is available at https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/1299388/fcnsw-sustainable-yield-report-2019-20-wildfires.pdf

The modelling process and assumptions were independently reviewed by Professor Cris Brack (Australian National University). See https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0012/1299387/fcnsw-independent-review-of-fire-resources.pdf.

[7] 2019–20 Wildfires NSW Coastal Hardwood Forests Sustainable Yield Review, Forestry Corporation of NSW 2020

Government support for the forestry industry

Forestry Industry Roadmap

In 2016, the NSW Government developed the NSW Forestry Industry Roadmap as its strategic action plan to build a stronger, more competitive and ecologically sustainable forestry industry. The Roadmap remains the current whole of government strategy for the industry. It outlines a triple bottom line approach to achieving social, ecological and economic sustainability through four priority pillars:

1. Regulatory modernisation and environmental sustainability
2. Balancing supply and demand
3. Community understanding and confidence
4. Industry innovation and new markets

A summary of the Government's delivery on commitments under Roadmap is outlined below:

Projects delivered

- Commencement of new Coastal IFOA following NRC review of proposed settings and extensive public consultation
- Streamlined legislation for native forestry on both public and private land, modernising penalties and transferring private native forestry advice and approvals to LLS
- Renewal of three NSW Regional Forestry Agreements
- Funding of $1.2m provided for mapping of the 18 priority Threatened Ecological Communities in Coastal state Forests
- Review of coastal native wood supply agreements
- Investigation of barriers to investment in new softwood and hardwood plantations
- Investigation of potential to expand PNF industry in North Coast
- Robust scientific research, including into the impact of forestry on native forests and koalas
- Investigation of economic opportunities for forest residues on the NSW North Coast
- Capitalising on opportunities for Private Native Forestry, including through new advisory and extension services through Local Land Services

Ongoing projects

- Review of the PNF Code, following consultation on a discussion paper and draft codes
- Statutory review of the *Plantations and Reafforestation Act* and Code
- Review and remake of Forestry Regulation
- Review of the IFOAs for Brigalow-Nandewar and South-west Cypress and Riverina Red Gum (to commence from 2021)
- Working with industry to resolve north coast WSA concerns, including WSA extension
- Funding of $7.2 million for improved forest monitoring, building community trust and supporting rollout of IFOA and RFA reporting

- Funding of $4.6 million for training and certification to improve the environmental performance of forestry contractors
- Research on how koalas respond to native forestry in north coast State forests (part of the NSW Koala Strategy)
- Rollout of the $34 million Forest Industries Innovation Fund (FIIF) loan scheme, providing long-term low-interest loans to projects that contribute to supporting industry innovation and the exploration of new markets for forest products
- Delivering a further $2.2 million program to expand threatened ecological community mapping

Modern and adaptive regulatory framework

The NSW Government is responsible for the regulatory framework that supports the forestry industry. Regular review of the regulatory framework helps ensure that the objectives of legislative instruments continue to be met, in keeping with best practices and stakeholder expectations.

Recent legislative and regulatory reviews have included:

- Regional Forest Agreements (RFAs) remake – November 2018
- Coastal Integrated Forestry Operations Approval – November 2018
- Forestry Legislation Amendment Act – November 2018
- Private Native Forestry (PNF) Code review – on foot
- Development of the NSW Forestry Industry Roadmap – August 2016

Current and upcoming reviews include:

- Remake of the Forestry Regulation – due for staged repeal on 1 September 2021
- Plantations and Reafforestation Act and Code review – commencing May 2021
- Western IFOA reviews – due to commence in 2021
- Natural Resources Commission's independent bushfire recovery review – commenced in 2021 (further detail below)
- 12-month health check of the Coastal IFOA – commencing in mid-2021 (postponed due to the bushfires)

Industry development

The NSW Government is committed to driving sustainable growth across NSW forestry industries and has put in place a number of programs to help promote productivity, best practice and growth in the industry.

Industry advisory groups

Following on from the Forest Industries Taskforce, established in 2012 to advise the Minister responsible for forestry on key strategic issues and opportunities across the forestry sector, the Deputy Premier has installed two advisory groups – the Softwood Industry Advisory Group and the Hardwood Industry Advisory Group – to continue to

provide guidance on the Government's Forestry Industry Roadmap and help ensure the forestry industry remains vibrant and ecologically sustainable.

Forest Industries Innovation Fund loan scheme

In 2018, the Government allocated $34 million over four years to establish a loans scheme to promote innovation, productivity and growth in the forest and forest products industries. Since launching the Scheme in October 2018, seven projects have been approved totalling approximately $11.3 million. Following a recent increase in the loan cap (from $3 million to $5 million), the Scheme remains open and the NSW Government is calling for project proposals.

Contractor training and certification scheme

The NSW Government is committed to a best practice sustainable and renewable forestry industry.

In May 2018, the NSW Government announced $4.6 million over four years to support training and certification, to improve the environmental performance of forestry contractors operating in native and plantation forests in NSW.

The design and development of a Forest Contractor Training and Certification scheme is underway. The Scheme will be industry-led and is being jointly developed by the NSW Government in partnership with the Australian Forest Contractors Association (AFCA), who are responsible for the project management and delivery of the Scheme.

NSW Government bushfire response

Over the last 18 months, bushfires, drought and flooding have had an unprecedented impact on the timber industry, the environment and our regional communities.

More than five million hectares of NSW was affected by fires in the 2019/20 season across national parks, State forests and private property. The affected areas of State forests included:

- 831,000ha (44%) of native forest
- 428,000ha (62%) of harvestable native forest
- 62,000ha (24%) of hardwood and softwood plantations
- 52,000ha (25%) of stocked softwood plantations

Further information on the impact of the bushfires on the State forest estate can be found at https://www.forestrycorporation.com.au/operations/fire-management/fire-impact-of-2019-20.

In addition, the fires affected:

- 38% of NSW National Parks
- 25% of koala habitat in eastern NSW
- 202 sites where threatened animals have been recorded

- 398 sites where threatened plants have been previously recorded

Further information on the impact of the bushfires on the environment can be found at https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Fire/nsw-wildlife-and-conservation-bushfire-recovery-medium-term-response-plan-200478.pdf.

The NSW Government has been taking action to understand the environmental and business impacts of the fires and plan for the future of the timber industry and the recovery of the forests. This includes:

- Reviewing the **sustainable yield of Coastal State Forests** following the 2019-20 bushfires – the sustainable yield report is available at https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/1299388/fcnsw-sustainable-yield-report-2019-20-wildfires.pdf.
- **Mapping the extent and severity of the 2019-20 bushfires** to inform conservation and recovery efforts – more information is available on the SEED portal, at https://datasets.seed.nsw.gov.au/dataset/fire-extent-and-severity-mapping-fesm
- **Assessment of the effects of the 2019-20 bushfires on the NSW environment and communities**, which includes information to guide the government, industries and the community in conservation decisions and on ground actions. More information on this work is available at https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/fire/park-recovery-and-rehabilitation/recovering-from-2019-20-fires/understanding-the-impact-of-the-2019-20-fires

In February 2021, the NSW Government released the *NSW Wildlife and Conservation Bushfire Recovery: Medium-term response plan*. The plan outlines actions that will be taken over the next five years to support the recovery of biodiversity in New South Wales following the 2019–20 fires. It includes updated data and assessments and is the most up-to date document about our response to the 2019–20 fires.

The plan also sets out specific actions to prioritise recovery and intervention actions, improve the trajectory of at-risk species and communities, and build greater social, economic and environmental resilience in all future bushfire recovery and response actions. The plan includes actions to identify and temporarily protect priority ecological refuge areas of unburnt vegetation critical for repopulating burnt areas so species can persist and repopulate the recovering landscape. This includes protection from extreme events and buffering from additional disturbance, which will be most effective when refuges are managed as part of a connected landscape.

The response plan is available at https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Parks-reserves-and-protected-areas/Fire/nsw-wildlife-and-conservation-bushfire-recovery-medium-term-response-plan-200478.pdf

Bushfire Recovery Program

Supported by the Australian Government's $200 million Bushfire Recovery Program for wildlife and their habitat, EES will deliver $24 million in programs to support wildlife and

habitat bushfire recovery. Activities include Traditional Owner led healing of Country, herbivore and predator animal control, vegetation restoration and weed control, fire management and species-specific interventions.

Recovery programs will be delivered in regions located in the rainforests of the NSW north coast and tablelands, the Greater Blue Mountains and World Heritage Area, forests of the NSW south coast and in the NSW area of Australia's alpine environments.

More information about the program can be found here:
https://www.environment.gov.au/biodiversity/bushfire-recovery

Salvage harvesting in softwood plantations

While pine trees are less fire tolerant than many native Australian species, pine trees that have been affected by fire can still be harvested and processed into timber products in much the same way as unburnt trees. Once the outer bark is removed, the timber underneath is still strong and suitable for a range of uses including landscaping and structural timber.

Pine trees can be salvaged for around 18 months after a fire before the timber degrades to a point that it is un-useable. Salvage operations in State forest softwood plantations by Forestry Corporation have harvested over 4 million tonnes of timber since the 2019-20 bushfires, about twice the usual rate of harvesting. While the window is closing, Forestry Corporation hope to continue harvesting some of the remainder of these burnt trees over the next few months before the timber degrades further and can no longer be used.

The majority of fire-affected plantation timber has been supplied to domestic sawmills and Forestry Corporation continues to work with customers to move timber around the state to meet varying demand. More information on Forestry Corporation's softwood salvaging operations is available at https://www.forestrycorporation.com.au/operations/fire-management/2020-bushfire-recovery.

Re-establishing plantations and expanding production nurseries

The above salvage harvesting efforts have been complemented by the NSW Government's $46 million equity injection to Forestry Corporation to support re-establishing plantations, expanding production nurseries to increase seedling production and repairing infrastructure and roads damaged by fires.

Forestry Corporation's two production nurseries at Blowering (Tumut) and Grafton have both been expanded to increase capacity for growing seedlings to re-stock plantations affected by fire and hardwood plantations impacted by accelerated harvesting rates in plantations over the past 18 months. Capacity across the two nurseries has been increased by 3 million seedlings per year. The planting program to restock fire-affected pine plantations began in 2020 and will be undertaken over the next 7 years. In 2021 12,000ha of pine plantations will be stocked with 14 million seedlings (from a previous average 8,000ha with 10 million seedlings). This includes grown and purchased seedlings.

Infrastructure repair

As noted above, the $46 million equity injection to Forestry Corporation includes the investment of around $18 million towards the repair infrastructure such as roads and bridges across the two-million-hectare State forest estate, which includes both plantations and native forests.

Public native forestry – operations in post fire environment

Following the 2019-20 bushfires, forestry operations proceeded under special conditions issued by the EPA in selected areas of fire-affected native State forests to assist in bushfire recovery efforts for fire-affected regional communities.

In the immediate aftermath of the bushfires, not all the conditions of the Coastal IFOA could be met. The EPA issued Forestry Corporation with a set of supplementary site-specific operating conditions to be applied to these harvest operations. The conditions were issued on a case by case basis, only where it was determined that the environmental risk associated with harvesting operations could be reasonably mitigated.

These additional conditions aimed to mitigate the specific environmental risks caused by the bushfires at each site, and were tailored for the specific impacts on plants, animals and their habitats, soils and waterways at each site. The additional conditions maximised the protection of unburnt or lightly burnt forest and limited harvesting intensity to assist with wildlife and biodiversity recovery efforts.

Further information on the actions taken to ensure forestry operations could safely occur in fire-affected forests is available at https://www.epa.nsw.gov.au/your-environment/native-forestry/bushfire-affected-forestry-operations and at https://www.forestrycorporation.com.au/operations/fire-management/2020-bushfire-recovery.

Forestry Corporation also concentrated efforts in harvesting in hardwood plantations over native forests while these forests regenerated from the fires, in order to alleviate impacts in burnt native State forest areas and to help keep timber supply flowing.

Forestry Corporation has returned to harvesting in fire-affected forests under the standard conditions of the IFOA on the south coast and Eden, and is applying additional environmental safeguards to these operations.

Public native forestry – Natural Resources Commission review

The NSW Government has commissioned an independent review by the Natural Resources Commission (NRC) to assist government in determining the longer-term approach to managing the impacts of the bushfires on the State forest estate. The review will provide independent, evidence-based advice on forestry operations under the Coastal IFOA. While the review is being undertaken in confidence to ensure the independence of the findings, the NRC is consulting with relevant NSW Government agencies and subject matter experts. More information is available at https://www.nrc.nsw.gov.au/ifoa.

Bushfire Industry Recovery Package

The $140 million Bushfire industry Recovery Package (BIRP) was established in April 2020 to provide immediate financial assistance targeted to support six driver industries - dairy, viticulture, aquaculture, apiculture, horticulture and forestry, which suffered significant damage as a result of the NSW bushfires in 2019-20.

The package was developed and delivered in consultation with industry and had two program elements:

1. **Supply Chain Support Grants** ($65.8 million) which provided funding for short term recovery needs. Specific to the forestry industry this included burnt timber haulage and storage, nursery expansion and measures to improve soil stabilisation, road construction and groundcover recovery in fire impacted PNF areas; and
2. **Sector Development Grants** ($72.3 million) focussing on larger projects delivered in the medium to long-term to aid industry-wide recovery and rebuilding, with a focus on job creation via projects to increase value-add production, support supply-chain efficiencies, product diversification and market expansion.

Under the Sector Development Grants, 49 of 51 projects are co-funded with the Commonwealth Government under the Bushfire Local Economic Recovery Package. Funding for the Supply Chain Support Grants that is specific to the forestry sector is co-funded by the Commonwealth Government through the National Partnership Agreement for the salvage transport and salvage log storage assistance.

To date, 60 forestry projects have received funding under the package, at a total value of more than $65.5 million. The funds have helped facilitate industry recovery, strengthen supply chains and retain and grow jobs to help businesses get back on their feet in the short, medium and long term. It is estimated that the package will support the retention and creation of up to 15,000 jobs in the forestry industry.

Through the Supply Chain Support Grants, PNF Plan holders and businesses that have been impacted by can apply for haulage of burnt timber (unprocessed). Applications for burnt timber haulage are open until 19 May 2021 or until funding is fully allocated. The submission of claims for haulage activities has been extended from 19 June 2021 until 17 June 2022.

Further information on the package and the grant outcomes is available on the Regional NSW website at https://www.nsw.gov.au/regional-nsw/regional-recovery-programs.

Recent selected DPI Forest Science publications related to ESFM

Threlfall C. G., Law B., Colman N. (2021) The effects of harvest frequency on coarse woody debris and its use by fauna. *Wildlife Research* (in press).

Law, B., Gonsalves, L., McConville, A. and Tap, P. (2021) Landscape monitoring reveals initial trends in occupancy and activity of bats in multiple-use forests. *Austral Ecology*, 46: 261-276. https://doi.org/10.1111/aec.12976

Law, B., Chidel, M., Law, P. (2020) Multi-year population dynamics of a specialist trawling bat at streams with contrasting disturbance. *Journal of Mammalogy* 101: 433-47. gyz210, https://doi.org/10.1093/jmammal/gyz210

Ximenes, F. (2020) Forestry, bioenergy and climate – a way forward in Australia. *Australian Forestry* 84: 1-3.

Carnegie, A.J. and Nahrung, H.E. (2019) Post-border forest biosecurity in Australia: Response to recent exotic detections, current surveillance and ongoing needs. *Forests* 10: Article 336.

Law, B., Gonsalves, L., Bilney, R., Peterie, J., Pietsch, R., Roe, P. and Truskinger, A. (2019) Using passive acoustic recording and automated call identification to survey koalas in the southern forests of New South Wales. *Australian Zoologist* 40: 477-486.

Law, B., Kathuria, A., Chidel, M. and Brassil, T. (2019), Long-term effects of repeated fuel-reduction burning and logging on bats in south-eastern Australia. *Austral Ecology* 44: 1013-1024. doi:10.1111/aec.12768

Threlfall, C. G., Law, B. S. and Peacock, R. J. (2019), Benchmarks and predictors of coarse woody debris in native forests of eastern Australia. *Austral Ecology* 44: 138-50. doi:10.1111/aec.12661

Carnegie, A.J. and Pegg, G.S. (2018) Lessons from the incursion of Myrtle Rust in Australia. *Annual Review of Phytopathology* 56: 457-478.

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Rueegger N, Law B, Goldingay R (2018) Interspecific differences and commonalities in maternity roosting by tree cavity-roosting bats over a maternity season in a timber production landscape. *PLoS ONE* 13(3): e0194429. https://doi.org/10.1371/journal.pone.0194429

Law BS, Chidel M, Law PR (2018) Forest bat population dynamics over 14 years at a climate refuge: Effects of timber harvesting and weather extremes. *PLoS ONE* 13(2): e0191471. https://doi.org/10.1371/journal.pone.0191471

Gonsalves, L.; Law, B.; Brassil, T.; Waters, C.; Toole, I.; Tap, P. (2018) Ecological outcomes for multiple taxa from silvicultural thinning of regrowth forest. *Forest Ecology & Management* 425: 177–188.

Ximenes, F.; Kathuria, A. McLean, M., Coburn, R. et al. (2018) Carbon in mature native forests in Australia: the role of direct weighing in the derivation of allometric equations. *Forests* 9: Article 60.

Law B, Caccamo G, Roe P, et al. (2017) Development and field validation of a regional, management-scale habitat model: A koala *Phascolarctos cinereus* case study. *Ecology and Evolution* 7: 7475–7489. https://doi.org/10.1002/ece3.3300

Law, B.S., Chidel, M., Brassil, T., Turner, G. and Gonsalves, L. (2017) Winners and losers among mammals and nocturnal birds over 17 years in response to large-scale eucalypt plantation establishment on farmland. *Forest Ecology and Management* 399: 108-119.

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Law, B., Chidel, M., Britton, A. and Brassil, T. (2013) Response of eastern pygmy possums, *Cercartetus nanus*, to selective logging in New South Wales: home range, habitat selection and den use. *Wildlife Research* 40: 470–481.