Environment Protection Authority

NSW Forestry Snapshot Report 2020–2021

Implementation of NSW Forest Agreements
and Integrated Forestry Operations Approvals

Cover: View up to tree canopy, blue sky. Brent Mail Photography/EPA

Page 10: Straight red gums captured with forest floor in background. Brent Mail Photography/EPA

Page 41: Workers measure trunk, looking up. Brent Mail Photography/EPA

Acknowledgement of Country

The NSW Environment Protection Authority (EPA) acknowledges the traditional custodians of the waters and land on which we live and work, and we pay our respects to Elders past, present and emerging.

We recognise the connection to their land, their waters and surrounding communities and acknowledge their history here on this land.

We also acknowledge our Aboriginal and Torres Strait Islander employees who are an integral part of our diverse workforce and recognise the knowledge embedded forever in Aboriginal and Torres Strait Islander custodianship of Country and culture.

Dharawal Country, Royal National Park, NSW

Contents

Overview

This is the 22nd annual report on NSW Forest Agreements (FAs) and integrated forestry operations approvals (IFOAs) prepared under section 69H of the *Forestry Act 2012* (Forestry Act). It provides a snapshot for 2020–21 of performance against the principles of ecologically sustainable forest management (ESFM) in NSW forest regions and compliance with IFOAs. As the report is for 2020–21 it relates to a period that fell under the government of that time.

Three of the four FAs lapsed in early 2019 and the remaining forest agreement, the Southern Region FA, lapsed in May 2022.

This report includes information on ESFM monitoring, research, harvesting and timber volumes, regeneration, protection of biodiversity and climate change resilience.

By July 2019 most milestones and undertakings set for coastal and western forestry regions in agreements and IFOAs had been completed. These are recorded in detail in the *NSW Forestry Snapshot Report 2018–19* and previous snapshot reports. The relatively small number remaining for the coastal regions were rolled into other regulatory mechanisms, including the making of the Coastal IFOA in November 2018. In the western regions some are ongoing and will be considered as part of the upcoming review of Western IFOAs.

The reporting period included a series of profound environmental, economic and social challenges. It followed periods of drought, extreme weather, widespread devastating bushfires, severe storms and floods. Comments on the impacts of, and the responses to, these events are included in key relevant sections of the report. The work and activities of agencies and other groups involved in forestry management were further impacted, often delayed, due to the COVID-19 pandemic.

Forestry Corporation timber harvesting quantities for 2020–21 complied with permissible volumes and quantities approved under the IFOAs. Their regeneration surveys in areas harvested found 85% of survey plots in native forests were successfully regenerated with commercial species. This is above the 65% regeneration threshold Forestry Corporation considers adequate for commercial species.

The NSW Environment Protection Authority's (EPA) regulatory work continued to focus on high-risk operations. This focus included assessing compliance with the protection of hollow-bearing and recruitment trees, streams, soil, forest structure and exclusion zones to protect koala habitat, threatened species and ecological communities.

The EPA visited 43 operations in State forests, which resulted in Forestry Corporation being issued:

- official cautions for six operations
- warning letters for one operation
- advisory letters for six operations
- a clean-up notice for one operation
- penalty notices for five operations
- stop work orders for two operations.

The *NSW Forestry Industry Roadmap* (the Roadmap), launched in 2016, set out actions to build a stronger, more competitive and ecologically sustainable forestry industry. Most of the reform actions were completed and reported on in previous snapshot reports. Those that continued in 2020–21 are summarised in this report.

NPWS agreements with Aboriginal communities in 2020–21 saw 149 parks and reserves covering almost a third of the national parks estate jointly managed. Forestry Corporation continued to provide access and co-management arrangements with Aboriginal communities under Indigenous Land Use Agreements (ILUAs) and through arrangements with communities across the state to manage areas of State forest for camping, teaching and practising culture.

Biodiversity conservation highlights this year included the transfer of 225,873 hectares (ha) of land to the national parks system in NSW. This brings the national parks estate to 7.45 million hectares (DPIE 2021a).

Research, monitoring and reporting to monitor and evaluate ESFM continued under the statewide, cross-tenure NSW Forest Monitoring and Improvement Program (FMIP). The program is independently overseen by the NRC. In 2020–21, as part of its suite of programs, the NRC provided advice to NSW Government agencies on the impact of the 2019–20 bushfires on State Forests, and pathways to ensure IFOAs continue to achieve ESFM.

Introduction

This is the 22nd annual report on the implementation of the NSW Forest Agreements (FAs) and integrated forestry operations approvals (IFOAs). It is prepared under the *Forestry Act 2012* (Forestry Act), section 69H.

This forestry snapshot report covers the period 1 July 2020 to 30 June 2021 and reports on:

- activities to promote ecologically sustainable forest management (ESFM) in relevant NSW forestry regions
- compliance with the integrated forestry operations approvals in the coastal region (Coastal IFOA) and the Riverina Red Gum, Brigalow–Nandewar and South Western Cypress regions (Western IFOAs)
- management of forests across all tenures including national parks for conservation, recreation, cultural heritage and other values.

FAs and IFOAs have provided a strategic and operational framework to manage public forests in NSW, with the overall objective of achieving forest conservation and ESFM. NSW Regional Forest Agreements (RFAs) between the NSW and Australian governments are another component of the framework.

The implementation of FAs and IFOAs has been a long-term cooperative undertaking between NSW Government departments, agencies and organisations in the clusters below:[1]

- Planning and Environment
  - Department of Planning, Industry and Environment (DPIE)[2]
    - Environment, Energy and Science Group (EES)
    - National Parks and Wildlife Service (NPWS)
  - NSW Environment Protection Authority (EPA) – maintained as an independent authority
  - Natural Resources Commission (NRC) – maintained as an independent body
- Regional NSW
  - Department of Regional NSW (DRNSW)
    - Department of Primary Industries (DPI), including Forestry, Fisheries and Biosecurity NSW
  - Local Land Services (LLS)
  - Forestry Corporation of NSW (FCNSW) – maintained as a state-owned corporation.

Guide to sections in this report

Section 1 provides a summary of action against ESFM criteria and indicators for native forests of all tenures in NSW coastal regions, including timber supply in coastal and western IFOA regions.

The report adopts the principles of ESFM as set out in section 69L(2) of the Forestry Act to inform its structure. These principles are in accord with those agreed between the NSW and Australian governments in the three NSW RFAs (as amended November 2018). See Appendix A for the list of ESFM principles.

Section 2 outlines compliance with regulatory instruments, including the IFOA's for all regions.

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[1] www.nsw.gov.au/departments-and-agencies provides information on NSW Government clusters

[2] In early 2022, DPIE became the Department of Planning and Environment (DPE) and its EES division became the Environment and Heritage Group (EHG). Agency names in use during the 2020–21 reporting period have been used in this report.

Links to other reporting

This report has been streamlined to link with and introduce, but not duplicate, other data collection and reporting compiled over the same period, including:

- 2020–21 annual reports of relevant NSW agencies
- special reports of relevant NSW agencies and organisations, for example, the annual Forestry Corporation Sustainability Report; reports by agencies on the impact of the 2019–20 bushfires on forests; Natural Resource Commission program and project reports; etc.

It also references other key reports for context including *Australia's State of the Forests Report 2018* (ABARES 2018) referred to in this report as SOFR 2018; the Australian State of the Environment reports and NSW State of the Environment reports; and the *Overview of the New South Wales Forest Management Framework V1.1* (DPI 2021a).

What regions are reported

This snapshot report covers coastal and western forestry regions in NSW.

NSW FAs for the Upper North East (UNE), Lower North East (LNE) and Eden regions lapsed in March 2019 and were not renewed. The Southern Region FA (including the Tumut sub-region) expires in May 2022 (in the next reporting period) and will also not be renewed. These regions previously had separate IFOAs in place, but from November 2018 were replaced by one combined approval, the Coastal IFOA.

When the FAs for the forestry regions lapsed, any outstanding issues, including milestones and undertakings, contained in these FAs were rolled into other mechanisms such as the Coastal IFOA, and the NSW and Australian governments' RFAs.

In November 2018, the North East, Eden and Southern RFAs were varied with extensions until 2039. They each now have a 20-year rolling life; at any point in time they will be between 15 and 20 years from expiring, depending on the satisfactory completion of five-yearly reviews.

There are IFOAs in place for three western NSW inland forestry regions (Western IFOAs) including Brigalow–Nandewar; South Western Cypress; and Riverina Red Gum. These three western forestry regions are not covered by NSW FAs or RFAs.

The Riverina Red Gum region overlaps with the South Western Cypress region but they have separate IFOAs in place for their operations.

Annual reporting requirements for the western forest areas includes compliance with IFOAs, and timber harvesting and products.

The coastal and western forestry regions covered in this report are mapped in Figure 1.
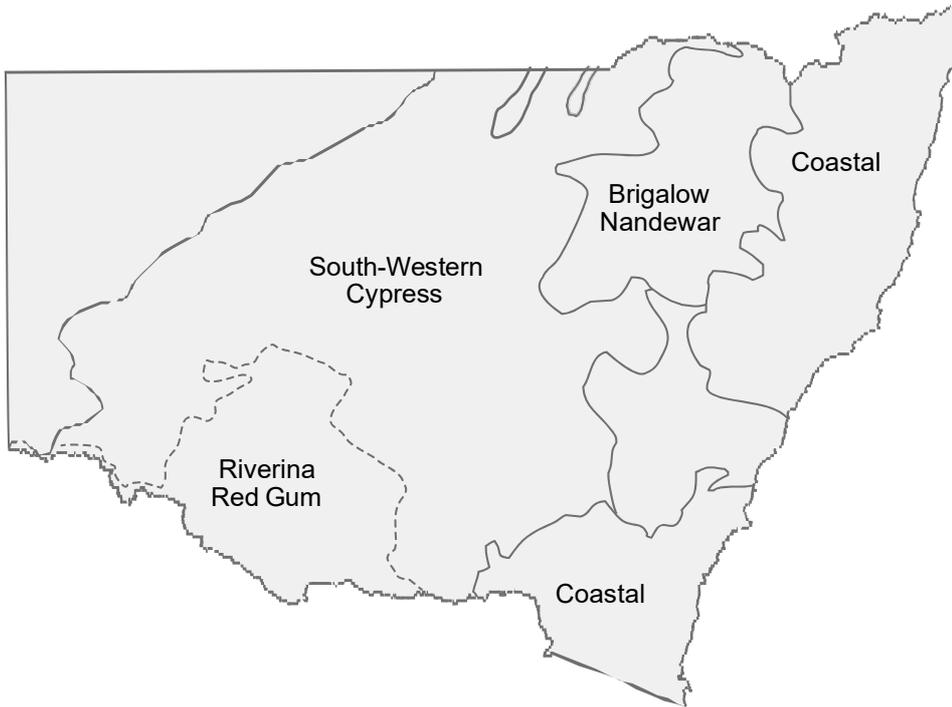
Figure 1   Integrated Forestry Operations Approval (IFOA) regions

More information about the forestry regions is available on the <u>EPA website</u>[3].

Appendix B shows the start and end dates of each NSW FA, IFOA and RFA.

The publication *Overview of the New South Wales Forest Management Framework V1.1* (DPI 2021a) describes the legislative and policy framework for forest management in NSW as at March 2021, and provides an explanation of the interaction between RFAs, FAs and IFOAs.

NSW Forestry Industry Roadmap

The <u>NSW Forestry Industry Roadmap</u>[4] (the Roadmap) was launched in August 2016 as the strategic action plan to build a stronger, more competitive and ecologically sustainable forestry industry in NSW. The Roadmap sets actions under four priority pillars.

1. Regulatory modernisation and environmental sustainability
2. Balancing supply and demand
3. Improving community understanding and confidence
4. Supporting industry innovation and new markets.

Background information and an update on actions during this reporting period is summarised below, with further information on the Roadmap available on the <u>NSW DPI website</u>[5].

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[3] www.epa.nsw.gov.au/your-environment/native-forestry

[4] https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/711851/nsw-forestry-industry-roadmap.pdf

[5] www.dpi.nsw.gov.au/forestry/industry-roadmap

Roadmap implementation 2020–21

Pillar 1 – Regulatory modernisation and environmental sustainability

As of 30 June 2021 all but two of the regulatory modernisation commitments in the Roadmap have been completed.

- reviewing and extending the three RFAs with the Australian Government – *completed*
- reviewing the regulatory arrangements for both public and private native forestry and develop a modern and simple regulatory framework – *completed*
- reviewing and remaking a new Coastal IFOA – *completed*
- reviewing and consulting on the existing Codes of Practice for private native forestry – *started*
- reviewing the Western IFOAs, with public consultation – *not yet started*.

Review and extension of RFAs

Three NSW RFAs between the Australian and NSW governments for the Eden, North East and Southern sub-regions were reviewed and subsequently varied in November 2018[6]. The renewed agreements were set up through the NSW Forest Management Framework as described in the *Overview of the New South Wales Forest Management Framework V1.1* (DPI 2021a).

In place until at least 2039, and with a 5-year rolling review and extend mechanism, the RFAs establish a long-term framework for the management and use of NSW major forested regions to effect improved forest conservation, ESFM and forest industry practices.

Under the varied agreements there is a requirement for an annual meeting between relevant NSW Government and Australian Government agencies to monitor implementation and discuss issues. The second annual meeting was held on 29 October 2020.

Details can be found on the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) website[7].

Review of regulatory arrangements

The *Forestry Legislation Amendment Act 2018* (FLA Act) came into force in November 2018. This legislative package amended the *Forestry Act 2012*, *Local Land Services Act 2013*, *Biodiversity Conservation Act 2016*, the Local Land Services Regulation 2014, and a suite of related legislation.

For native forestry on State forests, the FLA Act amended the Forestry Act to simplify regulatory arrangements including by making IFOAs a single integrated licence which removed the requirement for Forestry Corporation to hold separate licences under different Acts. The amendments introduced the principles of ESFM underpinning IFOAs; clarified the granting of approvals by Ministers; updated the penalties for breaching the IFOAs; and broadened the availability of alternative compliance enforcement tools (DPI 2021a).

For private native forestry, regulatory arrangements were transferred into a single Act for all land management activities, the *Local Land Services Act 2013* (LLS Act). The responsibilities for administration, regulation, compliance and enforcement of private native forestry (PNF) are outlined in Part 5B of the LLS Act.

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[6] www.epa.nsw.gov.au/your-environment/native-forestry/about-public-native-forestry/regional-forest-agreements-assessments

[7] https://www.agriculture.gov.au/agriculture-land/forestry/policies/rfa/regions/nsw (DAFF was previously the Department of Agriculture, Water and the Environment)

The Coastal IFOA

Under the Forestry Act, IFOAs set the rules for how forestry operations must be carried out on NSW State forests and other Crown-timber lands. A single Coastal IFOA replaced four former coastal IFOAs in November 2018. The Coastal IFOA is in place for a period of 20 years, with reviews to be undertaken every five years.

The Coastal IFOA introduced a new structure and outcomes-based regulatory approach with a clear hierarchy of outcomes, conditions and protocols. The Coastal IFOA conditions can only be amended by the Minister for the Environment and Energy and the Minister for Regional NSW, Industry and Trade (Forestry Act s69N). To enable forests to be more adaptively managed, the Act allows for the adoption of protocols, codes, standards or other instruments in force from time to time, including those prepared by the EPA (Forestry Act s69P). The EPA has the function of monitoring forestry operations and enforcing compliance with the requirements of the IFOA and does this uses the regulatory tools and powers in the Biodiversity Conservation Act (Forestry Act 69SB).

Details of the Coastal IFOA are on the EPA website[8].

The 2019–20 Black Summer bushfires happened during the two-year transition period from the previous IFOAs to the new Coastal IFOA and significantly impacted areas of State forests within the Coastal IFOA regions. In response, special conditions called site-specific operating conditions were applied for 12 months to some forestry operations to mitigate possible environmental risks in some affected bushfire areas. Forestry Corporation elected to return to standard operating conditions under the Coastal IFOA by mid-2021. They implemented additional voluntary environmental protection measures however these were not endorsed by the EPA, nor could they be enforced.

The Coastal IFOA is being supported by comprehensive monitoring efforts overseen by the NRC. This includes the NSW Forest Monitoring and Improvement Program (FMIP) 2019–2024, and the Coastal IFOA Monitoring Program which started in March 2020. These programs aim to ensure the Coastal IFOA is delivering on its stated objectives and outcomes, and to inform its continual improvement and relevance. Information on the monitoring programs can be found on the NRC website.[9]

Private Native Forestry (PNF) Review

The PNF Review includes a review of the PNF Codes of Practice, PNF regulatory settings, and training and advice services, in line with broader land management and forestry reforms. PNF Codes apply to the areas of Northern NSW, Southern NSW, Cypress and Western hardwood forests and River Red Gum forests.

A key focus of the PNF Review is the development of streamlined PNF Codes of Practice that are clear, easier to use and support long-term ESFM.

Draft PNF Codes of Practice were released on public exhibition from March to May 2020. During 2020–21, LLS continued to lead the PNF Review in collaboration with DPI and the EPA, including giving consideration to the key issues raised through public consultation.

The draft Codes underwent further revision during this reporting period including amendments, in early 2021, to harmonise with the LLS Act and to ensure better protections for koalas in areas of high value koala habitat and greater certainty for primary producers.

Information about the progress of the PNF Review is provided on the LLS website[10].

Review of Western IFOAs

One of the actions identified under the Roadmap is a comprehensive review of the Western IFOAs, which cover the Riverina Red Gum, South Western Cypress and Brigalow–Nandewar regions of NSW. While an amendment was made to the Riverina Red Gum IFOA in late June 2019 to assist

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[8] www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/coastal-ifoa

[9] www.nrc.nsw.gov.au/

[10] www.lls.nsw.gov.au/help-and-advice/private-native-forestry/private-native-forestry-review

management and supply of timber, the full review of the Western IFOAs had not commenced in the reporting period.

More information on the Western IFOAs is available on the EPA website.[11]

Pillar 2 – Balancing supply and demand

A key aim of the three NSW RFAs, renewed in November 2018, was to strike a long-term sustainable balance between economic, social and environmental demands on NSW forest resources. The RFAs, supported by the IFOAs, assist with forward planning and enhance Forestry Corporation's ability to set up long-term timber supply contracts, providing greater supply security for industry.

Wood Supply Agreements (WSAs) are long-term contracts for the supply of timber from NSW State forests. In the Roadmap, the NSW Government at the time committed to addressing timber supply and demand issues as certainty of wood supply is critical to ongoing business confidence.

The renewed RFAs commit to a sustainable wood supply estimated according to principles and processes described in *Sustainable Yield in New South Wales Regional Forest Agreement Regions* (DPI 2018). The RFAs and the IFOAs set out how sustainable yield is to be determined, reviewed and periodically updated. Under the RFAs, sustainable yield is required to be comprehensively reassessed every five years with the next review due in 2023–24.

The severity and breadth of the 2019–20 bushfires significantly impacted native hardwood forests. Forestry Corporation and NSW Government agencies responded quickly to assess environmental and operational impacts, and implications on timber harvesting and wood supply. Further information is provided in later sections of this report.

Pillar 3 – Improving community understanding and confidence

NSW Forest Industries Taskforces

The former NSW Forest Industries Taskforce was replaced with the Hardwood Industries Advisory Group (HIAG) and Softwood Industry Advisory Group (SIAG) which continue to provide guidance on the Roadmap implementation and industry issues. They are made up of a range of industry organisations and businesses in both the native forestry and the softwood sectors in NSW.

During 2020–21, meetings were held on a semi-regular basis with SIAG and HIAG. Discussion focused on specific issues or challenges facing the industry, for example, post-bushfire recovery, responses to storm flood events, and the impacts of the COVID-19 pandemic.

The advisory groups continue to play an important role in identifying key forestry issues and ways in which the general community can be better informed about efforts to achieve balanced outcomes between a viable forestry industry and environmental protections for the forest resource. They represent key sectors of the forestry industry and aim to provide timely and comprehensive advice to the NSW Government.

Monitoring, research and reporting

The NSW Forest Monitoring and Improvement Program (FMIP) was established in 2019 to improve the evidence base for decision-making and reporting to support ESFM of NSW forests across all tenures. Allocated funding for the program is $9.2 million over four years from 2018–19. The FMIP includes specific programs to monitor the Coastal IFOA and coordinated monitoring for the NSW RFAs.

The program is independently overseen by the Natural Resources Commission (NRC), which chairs the NSW Forest Monitoring Steering Committee comprising relevant NSW Government agencies and independent experts. The NRC works collaboratively with and draws expertise and experience from NSW agencies, universities, the private sector, communities and industry in delivery of the program.

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[11] www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals

During the 2020–21 reporting period the NRC progressed a range of projects aimed at monitoring, evaluating and reporting on NSW forests including the Coastal IFOA Monitoring Program and the NSW RFA Monitoring, Evaluation and Reporting Plan (the RFA MER Plan).

Details of these programs and activities including publications related to various aspects of ESFM and annual reports for the FMIP and CIFOA Monitoring Program can be found on the NRC website.[12]

DPIE, NPWS, DPI and Forestry Corporation all undertake monitoring, research and reporting activities and programs with a view to improving the evidence base for decision-making for forest management.

Pillar 4 – Supporting industry innovation and new markets

The Forestry Industry Innovation Fund loan scheme was set up to support industry innovation and the development of markets for renewable forestry products through long-term low interest loans.

Under the $34 million scheme 16 project proposals have been received with 10 approved in the reporting period totalling $20.3 million in lending. The applications for the program closed on 31 March 2022 or when it became fully subscribed.

Further information is provided on the DPI website[13].

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[12] FMIP: www.nrc.nsw.gov.au/fmip-insight#fmip-ar ; CIFOA: www.nrc.nsw.gov.au/ifoa-mer-reporting#cifoa-ar

[13] www.dpi.nsw.gov.au/forestry/forest-industries-innovation-fund

Section 1: ESFM performance indicators

Snapshot of ecologically sustainable forest management

ESFM is an internationally recognised approach that aims to maintain the broad range of environmental, economic and social values of forests for current and future generations. EFSM was adopted as a basic principle in forest management in NSW in the 1990s. The NSW FAs and RFAs include ESFM principles, criteria and performance indicators that reflect these key values and are underpinned by comprehensive regulatory arrangements to deliver on these commitments.

More information on ESFM and the indicators is available in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement Regions* (EPA 2017) and *Overview of the New South Wales Forest Management Framework V1.1* (DPI 2021a).

This report provides a snapshot of progress in actions to support EFSM in forest regions during 2020–21, including details of sustainable timber harvesting volumes and wood products, and summarises compliance with IFOAs. The structure of this section of the report is based around the principles of ESFM as set out in section 69L of the Forestry Act, which align with the ESFM principles in the NSW RFAs. These are listed in Appendix A.

Comprehensive reporting against ESFM criteria and indicators at a national level occurs every five years as part of the Australian Government's State of the Forests (SOFR) reporting. The most recent report is *State of the Forests 2018* (ABARES 2018), with the next due for release in 2023.

A statewide, cross-tenure NSW Forest Monitoring and Improvement Program (FMIP) was established to monitor and evaluate ESFM. The program is independently overseen by the NRC.

Just before the period that this report covers, NSW experienced one of the worst droughts on record followed by severe bushfires on the eastern seaboard during the summer of 2019–20. This was followed by intermittent damaging storm events and flooding in 2020, cooler and milder weather over the 2020–21 summer, then further storms and flooding in 2021.

These events significantly impacted native forestry areas covered by this snapshot report, particularly in the Coastal IFOA regions, including areas of important natural values, animal habitat, water catchments and timber supply. An immediate response to these events was required of agencies, organisations, researchers, and communities involved in the ecologically sustainable management of NSW forests. In 2020–21 the focus turned to activities to aid the recovery of forest environments, and increased research and monitoring of affected sites.

Maintaining forest values for present and future generations

This principle embodies the idea of intergenerational equity – that in meeting the needs of the present generation, the ability of future generations to meet their needs is not compromised.

Through appropriate planning and operational practices including targets, indicators of performance and monitoring programs, ESFM is practiced at regional and local scales. This achieves sustainable forest management that delivers the full range of environmental, social and economic values from the forest estate.

Forest biological diversity

Protecting forest habitat

Reserving a proportion of forested land in protected areas helps ensure the conservation of biodiversity. In 2018 there was an estimated 19.9 million hectares of native forest in NSW, of which 6.4 million was protected in a range of formal and informal categories (ABARES 2018).

Regional Forest Agreements (RFAs) between the State and Commonwealth Governments conserve forest values across the landscape by promoting the establishment of a comprehensive, adequate and representative (CAR) forest reserve system, providing ecologically sustainable forest management

outside of reserves and identifying a smaller proportion of public forest available for forestry. IFOAs set rules to protect habitat and environmental values during native forestry operations on public land and ensure harvested areas are regrown in perpetuity.

The CAR reserve system aims to safeguard vulnerable species and communities and provide links between reserves and other protected areas. The NSW national parks estate and substantial areas of NSW State forests are part of the national CAR reserve system which is guided by principles and criteria agreed by the Commonwealth, State and Territory Governments (Commonwealth of Australia 1997). Information about the CAR reserve system and the most recent data for forest in different types of CAR reserve is available in SOFR 2018 (ABARES 2018).

Protected areas include formal reserves, such as national parks protected under the *National Parks and Wildlife Act 1974* (NPW Act), land reserved for conservation as flora reserves under the Forestry Act, informal Crown reserves, and areas with values protected by prescription, such as scenic protection areas and timber harvesting exclusion zones. Twenty-eight per cent of the total forest area of NSW is reported as forming part of Australia's national reserve and having a primary management intent of nature conservation, with 77% of this forest on public land (ABARES 2018). Other protected areas and conservation on private land also contribute to protecting environmental values.

In 2020–21, 225,873 ha of land were transferred to the national parks system in NSW bringing the national parks estate to 7.45 million hectares, or 9.3% of NSW (DPIE 2021a). Of this, 4.11 million hectares fall within the Coastal IFOA regions. A further 106,903 ha were acquired by NPWS.

Fragmentation of native forest cover

The loss of large, contiguous, forested areas into smaller pieces of forest (fragmentation) can isolate populations of forest-dwelling species that cannot move across areas not connected by native vegetation. This reduces genetic diversity within species.

While fragmentation can occur naturally, the main cause of increasing forest fragmentation over the past 200 years has been forest clearing associated with land use change, mainly for agriculture, mining, urban development and infrastructure.

DPIE reports on landcover change annually based on a calendar year. The reports assess rates of woody vegetation change from different land-use activities — agriculture, forestry, infrastructure — and provide information about conservation and management actions. The information is provided through *Statewide Landcover and Tree Study (SLATS)* native vegetation data reports.

The SLATS forestry landcover class includes areas where vegetation removal has been attributed to forest harvesting activities including private native forestry, harvesting within state forests and harvesting within plantations. State forests are harvested for renewable timber and regrown in perpetuity, therefore while native forestry creates a level of disturbance, the nature and extent is regulated for long-term environmental and ecological sustainability.

The most recent SLATS reports for 2020 shows annual woody vegetation harvesting for the forestry landcover class increased by 6,500 ha or 28% in 2020 compared to 2019. The increase was mainly within plantation forestry on State forests and partly due to the impact of the 2019–20 bushfires. The decreasing trend in native forestry harvesting seen over recent years continued in 2020 (DPE 2022a).

Further information, including a comparison of land cover change over time and geographic distribution, can be found on the DPIE website.[14]

More recently, forest fragmentation has been exacerbated by bushfires. Vegetation loss due to fire was previously part of SLATS reporting. Following the fire extent and severity mapping (FESM) capability becoming fully operational in July 2020, separate annual fire extent and severity reports are now published, the most recent being for 2020–21 and 2016–17 fire years (DPE 2022b). FESM was developed in collaboration with the NSW Rural Fire Service.

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[14] www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/landcover-monitoring-and-reporting

The FESM datasets in the Sharing and Enabling Environmental Data (SEED) resource portal show that in 2020–21 fire impacted native forests significantly less than in the previous reporting period with 1,000 ha of forest burnt compared to approximately 832,000 ha in 2019-20.[15]

Information on forest fragmentation is reported at national and jurisdictional scales by the Australian Government through its State of the Forest Reports (SOFR) and State of the Environment (SoE) reporting.

Protecting forest-dwelling species

Forest-dwelling species (vertebrate fauna for the purpose of this report) may use forest habitat for all or part of their lifecycle. Monitoring these species helps inform conservation and forest management strategies. Monitoring is particularly important for species at risk of not maintaining viable breeding populations. Agencies involved in forestry undertake a range of research and monitoring programs in NSW forests, both independently and in collaboration.

SOFR 2018 summarises national, state and territory reporting from 1998 to 2016 on forest-dwelling species for which ecological information is available. As of 2016, there were 896 forest-dwelling vertebrate fauna species in NSW, of which 434 were dependent on forest habitat (ABARES 2018). This information will be updated in the next national state of the forest report due to be released in 2023.

A range of ongoing species-specific monitoring programs have been underway in NSW State forest areas for many years. These include monitoring the southern brown bandicoot, smoky mouse, giant burrowing frog and yellow-bellied glider. The NRC is overseeing a Coastal IFOA monitoring program, with remote sampling devices (ultrasonic sound recorders, sound recorders and cameras), to track species over time (EPA 2021).

In the 2020–21 reporting period, the NSW FMIP commissioned a team of scientists from leading universities, NSW agencies and the private sector to develop baselines, drivers and trends for species occupancy and distribution in forests across NSW RFA regions. The outcome of this work will be reported in the next forestry snapshot.[16]

NSW BioNet is the NSW Government's biodiversity data repository.[17] Maintained by DPIE, it incorporates a comprehensive threatened biodiversity profile search facility for open viewing of threatened species, populations and ecological community profiles, including forest-dwellers.[18] A second search facility, the BioNet Atlas, allows the open viewing of distribution records of any threatened or non-threatened entity in NSW. [19] Any user can contribute sighting records of species, populations and communities to the BioNet Species Sightings data collection. The BioNet repository is used by DPIE, NPWS, EPA, Forestry Corporation and the LLS.

NSW Koala Strategy

The NSW Koala Strategy sets out actions to achieve the long-term vision to stabilise and increase koala numbers in NSW, ensuring genetically diverse and viable populations across the state. It is based on the principles of action, ongoing monitoring and continuous learning.

The strategy has supported a range of conservation actions delivered over the years 2018–2021 under four pillars: koala habitat conservation; conservation through community action; safety and health of koala populations; and building our knowledge. This period included the 2019–20 bushfires

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[15] FESM: www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/landcover-monitoring-and-reporting/fire-extent-and-severity-maps. SEED: datasets.seed.nsw.gov.au/dataset/fire-extent-and-severity-mapping-fesm

[16] www.nrc.nsw.gov.au/fmip-baselines-biological-diversity-projectbd1

[17] www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet

[18] www.environment.nsw.gov.au/threatenedspeciesapp

[19] www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx

which were estimated to have affected almost a quarter of the koala habitat in NSW, including State forest areas under the Coastal IFOA.

In 2020–21, the NSW Koala Strategy conserved more than 2,500 ha of koala habitat through conservation agreements with private landholders; acquired 1,794 ha of priority koala habitat across four properties on the north coast and southern tablelands; and established new flora reserves over 4,924 ha of State forest, appointing NPWS as the land manager.

In response to the findings of the NSW Legislative Council inquiry into koala populations and their habitat[20], in July 2020 the Government at the time announced a commitment to double the koala population in NSW by 2050. The then government's response to the inquiry was tabled on 23 December 2020. A series of 5-year strategies will be developed for the next 30 years to guide the continued investment and action required to double koala numbers.

Detailed information is available on the NSW Koala Strategy[21] website including the *NSW Koala Strategy 2018–21 Final Report*.

Natural Resources Commission

In the 2020–21 reporting period, the NRC continued the implementation of the FMIP aimed at strengthening the evidence base for decision-making for forest management across tenures including State forests, national parks, private native forests and crown forested land. As part of its broader program, the NRC is overseeing monitoring programs for the Coastal IFOA and RFAs within this reporting period.

The NRC also continued overseeing an independent research program under the NSW Koala Strategy aimed at better understanding how koalas are responding to harvesting in State forests on the NSW North Coast. Overall, the research projects are designed to determine where koalas move, how their numbers change, and what they eat in response to harvesting associated coastal IFOA prescriptions.

Because the 2019–20 bushfires affected areas of NSW North Coast State forests where the NRC and its research partners were doing this research, and Forestry Corporation moved to selective harvesting techniques in its native forest operations, the NRC amended its research program plan to focus on understanding how koalas are responding to selective harvesting in State forests on the NSW north coast (NRC 2020a). A report synthesising the research and outlining implications for management will be provided to the NSW Government in the next reporting period. Updates on the research program can be found on the NRC website.[22]

The NSW Environmental Trust engaged the NRC to oversee the delivery of a research program focusing on the causes of mass eucalyptus tree mortality or dieback, including bell miner associated dieback (BMAD) threat to eucalypt forests along the eastern seaboard. The $1 million program will support research projects that inform the effective management of risks to the environment and economy posed by dieback.

Further information, research updates and reports related to the NRC's programs in 2020–21 are available on the NRC website.[23]

DPI research and monitoring

DPI conducts ongoing research to evaluate forestry management priorities and impacts of forestry practices on biodiversity. Research and monitoring approaches include field-based biological research, biometrics, spatial modelling, GIS mapping and cost-benefit analysis.

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[20] www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2536#tab-reportsandgovernmentresponses

[21] www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy

[22] www.nrc.nsw.gov.au/koala-research

[23] www.nrc.nsw.gov.au/publications-current

In 2020–21, DPI continued threatened species research and monitoring for a range of species including koalas, several bat species and the Hastings River mouse, with a particular focus on surveying long-term study sites.

Koala research activities, such as acoustic monitoring and GPS tracking projects, also continued in the current reporting period. DPI conducted parallel research projects investigating the impact of forest disturbances – bushfires and timber harvesting – on koalas as part of efforts to better understand koala habitat threats and risks. The long-term collection and analysis of data on koalas and other species aims to track the responses of wildlife over time under varying conditions. A major project developing baselines for forest fauna was completed. The project provided a 1990s snapshot for many species, contributing important context for future monitoring

Details of DPI's forest research and monitoring activities are available on the DPI website.[24]

Forestry Corporation research and monitoring

Forestry Corporation conducts many forest surveys and is a significant contributor of flora and fauna records to the NSW Government's BioNet Atlas

DPI Forest Science team provides scientific and technical advice and research and development services to Forestry Corporation within the core activities of: forest ecology; forest health and biosecurity; forest carbon; and forest resource assessment, modelling and biometrics. It also represents Forestry Corporation on forestry sector scientific and other committees related to ESFM. Information about recent research activities is included in the statutory information in the Forestry Corporation *Annual Report 2020–21* (FCNSW 2021a).

Forestry Corporation has long-standing monitoring and survey programs for water quality and flora and fauna biodiversity dating from the 1970s. It has collaborated with the NRC on the development of landscape modelling across the coastal State forests, and also collaborates with other agencies and universities in conservation projects such as the reintroduction of bandicoots and potoroos from State Forests into Booderee National Park (FCNSW 2021b).

In 2020–21, monitoring continued of wildlife at 40 sites in State forests south of Eden, progressing work that had started in 2007. Monitoring also continued for yellow-bellied gliders in forests near Tumbarumba, the Hastings River mouse in the Northern Tableland forests, the smoky mouse and the giant burrowing frog in south coast forests, and dams have allowed monitoring of Littlejohns tree frog and other frog species in Eden, Batemans Bay and central coast forests. A long-term radio tracking study of koalas was undertaken with DPI Forest Science and the Port Macquarie Koala hospital between 2018 and 2021 with the field work being completed in 2021. Monitoring and targeted searches for a range of species increased following the 2019–20 fires.

In 2020–21 the Forestry Corporation budget for research was $1.84 million (FCNSW 2021a). Details of the research and monitoring efforts of Forestry Corporation can be found in its *Sustainability Report 2020–21* (FCNSW 2021b).

DPIE research and monitoring

DPIE does a range of forest-related research and monitoring including field based and applied research, spatial modelling and GIS mapping. It undertakes research, monitoring and reporting across forested lands in partnership with other agencies with active programs for koala detection and research, rainforest conservation, forest old growth mapping, restoration science and threatened species conservation.

DPIE developed the NSW Koala Habitat Information Base in 2019, including a state wide review of koala tree preferences. In the current reporting period, further research on koalas included trialling the use of drones and other sampling methods to evaluate their effectiveness for surveying and monitoring koala populations.

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[24] www.dpi.nsw.gov.au/forestry/science

In 2020–21 DPIE continued its research and reporting efforts in a number of other key programs including WildCount, the Biodiversity Indicator Program, Saving our Species, SLATS and its maintenance of BioNet. While the FMIP, overseen by the NRC, is complementary to DPIE programs it does not provide a comprehensive measure of the ecological health of national parks. Monitoring of biodiversity in national parks is carried out under the Ecological Health Monitoring Program.

All of these activities are important in the forest context as they inform ongoing understanding of the condition and extent of forested areas in NSW.

WildCount and the Ecological Health Monitoring Program

WildCount is a 10-year long-term ecological monitoring program that uses motion-sensitive cameras to monitor animals across national parks in eastern NSW. It detects changes in species occupancy and can act as an early warning system for native species declines, pest animal increases or new pest invasions. It is the broadest fauna monitoring study of its kind in Australia and one of the biggest in the world. The WildCount program is under review as the Ecological Health Monitoring Program becomes the primary program for measuring the health of national parks.

Many of the monitored parks are in IFOA/FA regions, although WildCount does not monitor animals on State forests. Information and monitoring data about State forests is recorded and available through the BioNet Atlas. Of 204 WildCount sites across 146 national parks and reserves, 173 are in 128 reserves within the boundaries of the IFOA areas:

- 143 sites across 99 reserves in the Coastal area
- 16 sites across 15 reserves in the Brigalow and Nandewar area
- 14 sites across 14 reserves in the South Western Cypress area.

In the 2021 field season, the program's tenth year, 93 different species and groups were identified in IFOA areas. This included records of 11 threatened species: Albert's lyrebird, black-striped wallaby, brush-tailed phascogale, brush-tailed rock-wallaby, koala, long-nosed potoroo, masked owl, parma wallaby, red-legged pademelon, spotted-tailed quoll and speckled warbler.

In the context of the impacts of the 2019–20 fire season WildCount provides an extensive historical pre-fire dataset from 200 sites. During the fire season nearly 70 sites were burnt and the information captured through WildCount in 2020 and 2021 will be highly relevant for learning about the impacts of bushfires on native animals and how wildlife recovers. Early analysis of the 2020 data has shown a varied response to fire severity immediately post-fire. Some species were negatively affected (long-nosed bandicoot, short-beaked echidna, eastern grey kangaroo) while others showed no real change in occupancy (superb lyrebird, bare-nosed wombat, swamp wallabies, common brushtail possums).

Records of WildCount sightings have been contributed to NSW BioNet[25] and its data is also available from SEED. During its operation a total of 185 species or species groups were recorded from approximately 1.9 million images. The majority of these species and species groups were recorded infrequently. Almost 95% of all images were from just 20 species (> 8,000 images each) and 80% of all images were from just seven species (> 50,000 images each).

A report on analysis of WildCount data from 2012 to 2016 was released in August 2020 and, with the program now coming to an end, a 10-year report is in planning for publication by the end of 2022. Lessons from the WildCount program are informing the development of the NPWS Ecological Health Performance Scorecards program[26].

More information on the program and associated reports can be found on the WildCount webpage.[27]

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[25] www.bionet.nsw.gov.au

[26] www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/park-management/national-park-performance-scorecards

[27] www.environment.nsw.gov.au/topics/animals-and-plants/surveys-monitoring-and-records/native-animal-monitoring

Biodiversity Indicator Program (BIP)

The Biodiversity Indicator Program (BIP) was set up in 2017 to assess the status and trends of biodiversity and ecological integrity in NSW, as required by the Biodiversity Conservation Act. DPIE collaborated with subject matter experts to develop a technical method that describes key biodiversity indicators. The technical method has been peer reviewed and published (OEH 2019). Many of the BIP indicators align with criteria 1 and 3 of the Montreal Process[28] indicators.

The first assessment of the status of NSW biodiversity and ecological integrity under the BIP was released in February 2020 as the *NSW Biodiversity Outlook Report, Results from the Biodiversity Indicator Program: First assessment* (DPIE 2020a). It reported on 10 indicators as a baseline assessment. Additional report cards for invasive species and the community appreciation of biodiversity have been published in 2021.

The Biodiversity Outlook Report is supported by implementation reports that provide details of how indicators have been assessed. Data packages for all indicators are available via the SEED data portal.[29] Assessments will continue at recommended intervals and the program will contribute to the five-year review of the Biodiversity Conservation Act.

In early 2020, DPIE did an assessment of the effects of the 2019–20 bushfires on a range of biodiversity and landscape values. It resulted in the recalculation of three indicators developed for the Biodiversity Outlook Report – ecological condition, ecological carrying capacity and persistence of ecosystems.

Regarding the ecological carrying capacity indicator, the baseline level remaining in 2013 had been assessed at 33% of the natural levels before European settlement but was assessed as having fallen to 31% in 2020 following the Black Summer bushfires (EPA 2021).

Changes to indicators will be published in updated report cards and included in future Biodiversity Outlook Reports. An update report ahead of the next outlook report, is planned for 2022 and will include updated results for 10 indicators, including ecological condition, ecological carrying capacity and persistence of ecosystems.

Further information about the BIP, and the suite of reports, is available on the DPIE website.[30]

The productive capacity and sustainability of forest ecosystems

Land available for timber production

Monitoring the productive capacity of native forests helps ensure demand for forest timber and other wood products can be met sustainably. Forestry Corporation continually regrows all harvested areas and aims to maintain robust sustainable yield models.

Land available in State forests

Forestry Corporation manages native State forests and timber plantations across NSW. In 2020–21 just over half of the forest area managed by Forestry Corporation was available for timber production, around 18% managed as formal or informal reserves to protect natural and cultural values, and the remainder excluded from harvest operations for other reasons.

Forestry Corporation uses a land classification system called Forest Management Zoning (FMZ) to describe forest areas by management intent, identifying their values and the activities permitted within each. FMZ maps are available from the Forestry Corporation website.

Forestry Corporation *Sustainability Report 2020–21* (FCNSW 2021b) provides interactive charts detailing areas of State forest (by zone) and timber reserves under their management across all State

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28 www.agriculture.gov.au/forestry/international/forums/montreal

29 www.seed.nsw.gov.au

30 www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-indicator-program

forests. Forestry Corporation also maintains timber rights to Crown-timber land and timber reserves on Crown land not under its management.

The report shows that in 2020–21:

- total area managed by Forestry Corporation was 2,148,178 ha, including hardwood plantation area of 34,218 ha in north east NSW, and softwood plantation area of around 221,221 ha in the central west, south and north of NSW. A total of 2,015,780 ha is managed under the IFOAs
- total area of State forest in the Coastal IFOA region was 1,555,867 ha; and 459,913 ha in the Western IFOA regions

Private native forestry

Private native forestry (PNF) is the management of native forest on private land for sustainable timber harvesting. There are an estimated 7.4 million hectares of native forests on private land across NSW, which is approximately 37% of the 20 million hectares of native forest in NSW (ABARES 2019).

Regional PNF Codes of Practice are designed to protect significant landscape features such as vulnerable and endangered ecological communities, rainforest, old growth forest, wetlands, heathlands and cultural heritage items and sites. The PNF Codes of Practice also contain provisions for keeping habitat trees (including feed trees, roost, nest and food resource trees) and recruitment trees capable of forming hollows for habitat in future.

Landholders are required to obtain a PNF Plan from LLS to carry out forestry operations on private land. The plan is a legally binding agreement between a landholder and LLS and is valid for up to 15 years. Once a PNF Plan is in place, landholders and contractors must meet the requirements of the relevant PNF Code of Practice. This includes the need to complete a Forest Management Plan before undertaking private native forestry operations.

Private native forestry approvals

LLS approves PNF Plans, and the EPA regulates compliance and enforcement of PNF Plans and the PNF Codes of Practice.

In 2020–21, a total of 42,570 ha were approved under 288 new PNF Plans. Tables 1 and 2 show new PNF Plans and related areas in hectares for 2015–16 to 2020–21. Approvals for earlier years can be found in previous Forestry Snapshot Reports.

The number and area of forestry operations approved each year may vary. Generally, only a proportion of the total approved area will have active forestry operations occurring in the reporting period. Variances may occur in any given year, and between years, for a range of reasons including wet weather, fires, market demand or completion of previously approved harvesting.

Table 1   **Total number of private native forestry plans approved July 2015 – June 2021**

Forest region	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Northern NSW	306	314	229	216	275	252
Southern NSW	13	11	2	12	9	18
Riverina Red Gum	18	10	11	9	2	8
Cypress & Western Hardwood	2	3	11	11	9	10
Totals	**339**	**338**	**253**	**248**	**295**	**288**

Table 2   Area (hectares) of private native forestry plans approved July 2015 – June 2021

Forest region	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Northern NSW	41,464	33,177	24,584	24,458	30,738	30,586
Southern NSW	756	701	259	372	426	4,932
Riverina Red Gum	7,286	2,416	2,549	4,134	24	3,367
Cypress & Western Hardwood	2,155	1,892	4,261	4,555	3,248	3,685
Totals	**51,661**	**38,186**	**31,653**	**33,519**	**34,436**	**42,570**

Source: LLS data

Land available in plantations

Plantation forestry involves planting trees and shrubs for timber production or environmental purposes. Plantations are regulated and authorised under the *Plantations and Reafforestation Act 1999.*

DPI is responsible for the regulation of native and non-native plantations including authorisation, compliance and enforcement. It maintains a Public Register of Plantations that provides ongoing data on plantation authorisations from 1997 to the current year, including location, plantation type and area (hectares). Extra information summarising annual data related to plantation regulation activities is also produced by DPI.

The public register provides details of both public and private plantations authorised. Plantations not included on the public register are exempt from farm forestry and existing plantations are not required to be authorised under the Plantations and Reafforestation Act 1999. The register and additional annual results data are accessible on the plantation forestry section of the DPI website.[31]

Figures for timber volumes and other products supplied from these plantations are reported on the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) website.[32]

The largest area of plantation in NSW is on State forest (see previous section on 'Land available in State forests'). Information about production from State forest timber plantations is detailed in Forestry Corporation's Sustainability Report 2020–21.

Many plantations contain areas of remnant native vegetation that are identified at the time of plantation establishment and are required to be retained and protected. The area of retained native vegetation in NSW plantations as at 30 June 2021 amounted to 35,127 ha.

Sustainable timber harvesting

Sustainable yield is a measure of how much wood can be harvested from a forest over a long period of time, while maintaining wood supply levels and meeting sustainable use objectives for the forest. Forestry Corporation reviews the available sustainable timber yield from native forests every five years and continually reconciles production against sustainable yield. This is reported in its annual Sustainability Report and regular reconciliation reports on Forestry Corporation's website.[33]

Monitoring helps ensure wood and wood products are harvested and regrown at levels that meet society's need for forest products each year without causing a decline in the available timber, while ensuring maintenance of the functioning of the native forest system (ABARES 2018).

The Coastal and Western IFOAs specify the types, volumes and quantities of native forest timber products that Forestry Corporation is allowed to harvest. The IFOAs allow annual variations to the specified volumes to accommodate environmental and economic changes. The IFOA requires these volumes to be updated at review periods to ensure their ongoing sustainability. They also specify

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[31] www.dpi.nsw.gov.au/forestry/forestry-operations/plantation-forestry

[32] www.agriculture.gov.au/abares/research-topics/forests/forest-economics

[33] www.forestrycorporation.com.au/about/pubs/timber-volumes-and-modelling

environmental conditions that ensure wildlife habitat, soil and water and sensitive environmental features are protected and maintained during timber harvesting operations.

Harvested amounts in the Coastal IFOA regions, particularly the upper north coast and the south coast, were severely reduced in response to the widespread 2019–20 bushfires.[34] North coast operations were also impacted by severe storms and flooding in 2020–21.

Due to the scale and severity of the fires, Forestry Corporation identified a need to review the impact of the fires on wood supply and long-term sustainable yield. An initial review and modelling was completed towards the end of 2020 (FCNSW 2020b). The review will be supplemented by further assessment in fire sensitive forests as well as a full remeasurement of inventory plots across the native forest estate. This work has started and forms part of the comprehensive review of the long-term sustainable yield due in 2023–24 (FCNSW 2021a).

Through the Coastal IFOA monitoring program, the NRC is setting up baselines for predicting and monitoring wood supply. To establish the baselines, the program is first evaluating trends in historic and actual wood production from 2003 to 2019 and the various factors influencing trends over time. The program will predict wood supply under two scenarios: conditions in the previous IFOAs, and under new conditions in the Coastal IFOA (NRC 2020a; NRC 2020b).[35]

In March 2021, the NSW Government at the time asked the NRC, through a terms of reference, to provide advice on forestry operations under the Coastal IFOA as the NSW public forest estate recovered from the 2019–20 bushfires.[36] The NRC provided its final advice, in-confidence, on 25 June 2021.

An NSW Legislative Council committee inquiry into the sustainability and future of the timber industry started in March 2021, its terms of reference were released in April 2021 and submissions closed on 28 May 2021.[37]

Compliance with sustainable forestry certifications

Forestry Corporation produces timber that is certified sustainable under the internationally recognised Responsible Wood® Scheme using the Australian Standard® for Sustainable Forest Management (*AS 4708:2013)*. During the reporting period, Forestry Corporation was also certified to the Environmental Management Standard *ISO 14001:20015,* the requirements of which have since been incorporated into the revised Responsible Wood Standard. To maintain certification, Forestry Corporation must show that its forestry activities are undertaken in a systematic manner consistent with these standards and that they meet a range of forest management criteria set out in *AS 4708:2013*.

Forestry Corporation has regular independent, external surveillance and recertification audits of its Hardwood Forests Division and Softwood Plantations Division as part of maintaining its Responsible Wood® and *ISO 14001:20015* certifications. Summary audit reports are available from the Forestry Corporation website.[38]

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[34] www.forestrycorporation.com.au/operations/fire-management/fire-impact-of-2019-20

[35] https://www.nrc.nsw.gov.au/ifoa-mer-wood-supply

[36] www.nrc.nsw.gov.au/ifoa

[37] NSW Legislative Council, Portfolio Committee No. 4 – Customer Service and Natural Resources, *Inquiry into the long term sustainability and future of the timber and forest products industry* of the timber and forest products industry (Terms of Reference self-referred by the Committee on 25/04/2021)

[38] www.forestrycorporation.com.au/sustainability/certification

Timber harvested in Coastal IFOA areas

Overall, the amount of timber harvested in Coastal IFOA native forests and hardwood plantations during the 2020–21 reporting period remained significantly less than in previous years. This was due to steps taken to increase environmental protection following the 2019–20 bushfires, and the extreme wet weather and flooding on the north coast that limited access and operations.

Timber plantations continued to be prioritised to reduce operations in native forests and maximise habitat protection in the north. On the south coast, which had been hardest hit by the 2019–20 bushfires and where there are no hardwood timber plantations, operations continued at a reduced rate (FCNSW 2021a). Further information on circumstances that affected timber volumes harvested in coastal regions is available in the Forestry Corporation Sustainability Report and Annual Report for 2020–21.

The following section reports timber volumes and quantities harvested against the timber volume limits specified in the Coastal IFOA (Protocol 31). Under the Protocol timber volume limits must align with sustainable yield in accordance with the NSW RFAs. For the LNE and UNE regions, sustainable yield calculations include hardwood plantations.

Figure 2 depicts volumes of logs harvested as a percentage of the volumes specified in the Coastal IFOA. As with the two previous snapshot reports, the figure includes poles, piles and girders (snapshot reports before 2017–18 excluded poles, piles and girders).

Volumes of logs harvested decreased in most regions mainly due to the impact of widespread and extreme bushfires in 2019–20 and then flooding in the UNE region.

Detailed data for the volumes and quantities of timber extracted from the coastal regions are shown in Table 3.
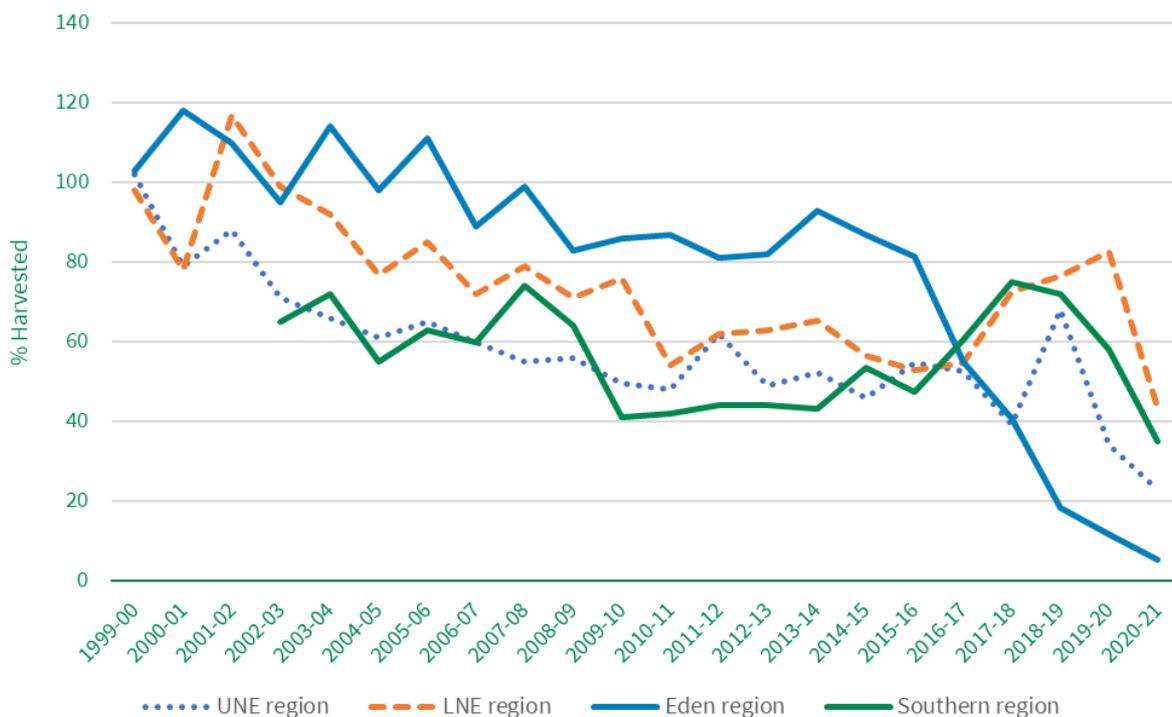
**Figure 2   Log volumes harvested as a percentage of volumes specified in the IFOA – all coastal regions**

Source: Forestry Corporation data

Quota sawlogs harvested are from native forest in the Eden and Southern regions, and from native forest and hardwood plantations in the UNE and LNE regions. The South Coast sub-region and Tumut sub-region figures have been combined as Southern region since 2002.

In the UNE region, 25,056 cubic metres (m^3) of high-quality large sawlogs, large veneer logs and poles were harvested from native and hardwood plantation forests during 2020–21. This represents 23% of the permitted annual volume (109,000 m^3).

In the LNE region, 69,599 m^3 of high-quality large sawlogs, large veneer logs and poles were harvested from native and hardwood plantation forests, which is 43.5% of the permitted annual volume (160,000 m^3), a decrease from the amount harvested in the previous year (132,222 m^3).

The impact of the 2019–20 bushfires continued to be seen in the Eden region where 1,194 m^3 of high-quality large sawlogs were harvested from native forests, representing 5.2% of the permitted annual volume (23,000 m^3). No piles, poles or girders were supplied from the Eden region.

Only 48,497 tonnes (t) of pulp grade timber were harvested in the Eden region in 2020–21, representing 14% of the permitted annual volume (345,000 t). This was a decrease from the previous year (74,998 t) and a further indication of the continued impact of the Black Summer bushfires on this area. The volume of pulp grade timber harvested from the Eden region since 1999–2000 remains below the specified volume.

In the Southern region, 30,182 m^3 of high-quality large sawlogs were harvested from native forests. This represents 31% of the annual permitted volume of 96,500 m^3 (48,500 m^3 from the South Coast sub-region and 48,000 m^3 from the Tumut sub-region). The quantities by sub-region were:

- South Coast sub-region: 5,262 m^3 (11% of permitted volume), a decrease from the previous year volume of 31,821 m^3
- Tumut sub-region: 24,920 m^3 (52% of permitted volume).

Volumes and quantities not specified in the FAs and IFOAs

The coastal approvals do not set volume limits for certain timber products that form part of integrated harvesting operations, including low-quality sawlogs, firewood and landscape timbers (see Table 3 for details). In 2020–21, 205,764 m^3 of non-specified (unregulated) logs were harvested from Forestry Corporation native forests and hardwood plantations across all Coastal IFOA regions, approximately 25% less than in 2019–20.

In the current reporting period, 176,464 t of non-specified pulp grade timber were produced. This is more than the previous year, when 74,168 t were produced. The majority of the increase was sourced from hardwood plantations in the LNE and UNE regions (141,090 t compared to 32,980 t in 2019–20). There was an overall reduction in unregulated pulpwood from native forest particularly in the South Coast sub-region, with an increased amount being sourced from the UNE Region.

Table 3 Quantities (m^3) of native forest and hardwood plantation timber products – coastal regions 2020–21

Product type	Southern region			Eden region	LNE region		UNE region	
	South Coast	Tumut native forest	Tumut hardwood plantation	Native forest	Native forest	Hardwood plantation	Native forest	Hardwood plantation
Large veneer[1]	0	0	0	0	1,059	1,991	649	185
High-quality large sawlogs[1]	5,262	24,920	0	1,194	30,010	28,920	15,814	4,923
Large poles/piles and girders	0	0	0	0	3,929	3,691	2,784	701
Small veneer	0	0	0	0	782	1,574	292	194
High-quality small sawlogs	2,761	896	0	1,635	10,364	9,894	8,271	4,353
Low-quality sawlogs	2,244	10,608	0	106	27,886	50,202	13,403	8,494
Small poles/piles and girders	0	0	0	0	6,287	6,612	2,014	921
Biomass	0	0	0	0	0	0	0	0
Firewood/misc.	9,246	3,194	0	91	10,964	9,875	1,503	1,097
Total (m^3) [3]	**19,513**	**39,618**	**0**	**3,026**	**91,281**	**112,759**	**44,730**	**20,868**
Pulp (Eden)[1,2] (tonnes)	0	0	0	48,497	0	0	0	0
Pulp/chipwood (tonnes)	6,384	4,929	0	–	8,511	28,610	15,550	112,480
Total (tonnes)	**6,384**	**4,929**	**0**	**48,497**	**8,511**	**28,610**	**15,550**	**112,480**

Source: Forestry Corporation NSW data. Figures are derived from an operational database; there may have been minor reconciliations since the end of the reporting period.

[1] The Coastal IFOA specifies quotas for these products.

[2] Pulp is split into regulated (Eden region only) and unregulated pulp/chipwood. Quota requirements apply to pulp grade timber in the Eden region under the IFOA. The measure for pulp is tonnes, not m^3.

[3] Minor rounding discrepancies may occur in totals.

Timber harvested in Western IFOA regions

Timber products obtained in 2020–21 from State forests and Western Lands Leases covered by the three western IFOAs are summarised in Tables 4 to 6 below. Figures 3 to 6 show trends in harvesting of forest timber products in the three western IFOA regions from 2011–12 to 2020–21.

Riverina Red Gum region

The Riverina Red Gum IFOA identifies 20-year limits for high-quality large logs and residue logs and a maximum cap for early thinning. In the ten and a half years since January 2011, 47,941 m^3 of high-quality sawlogs have been harvested, accounting for 53% of the allowed 20-year volume of 90,253 m^3.

Figure 3 reports on the volume of sawlogs and residue from these operations in the Riverina Red Gum region between 2011–12 and 2020–21. During 2020–21, a total of 4,305 m^3 of high-quality large sawlogs were harvested from State forests and Western Lands Lease areas.

A total of 5,268 m^3 of low-quality sawlogs and 20,886 t of residue grade logs were generated in the course of producing the high-quality sawlogs. A further 36,224 t of residue were harvested from

Western Lands Lease areas (not included in Figure 3). A total of 39,754 t of residue grade logs were harvested from early thinning operations in Riverina State forests.

The IFOA was amended in June 2019 to allow the continued harvesting of residue between 1 July 2019 and 30 June 2024, with a cap of 176,850 tonnes. Under the previous cap of 212,220 t, a total of 198,902 t of this product, representing 93.7% of that permitted, was harvested between 2013 and 2019. The 39,754 t harvested in the current reporting period represents 22.5% of the new, 5-year cap.
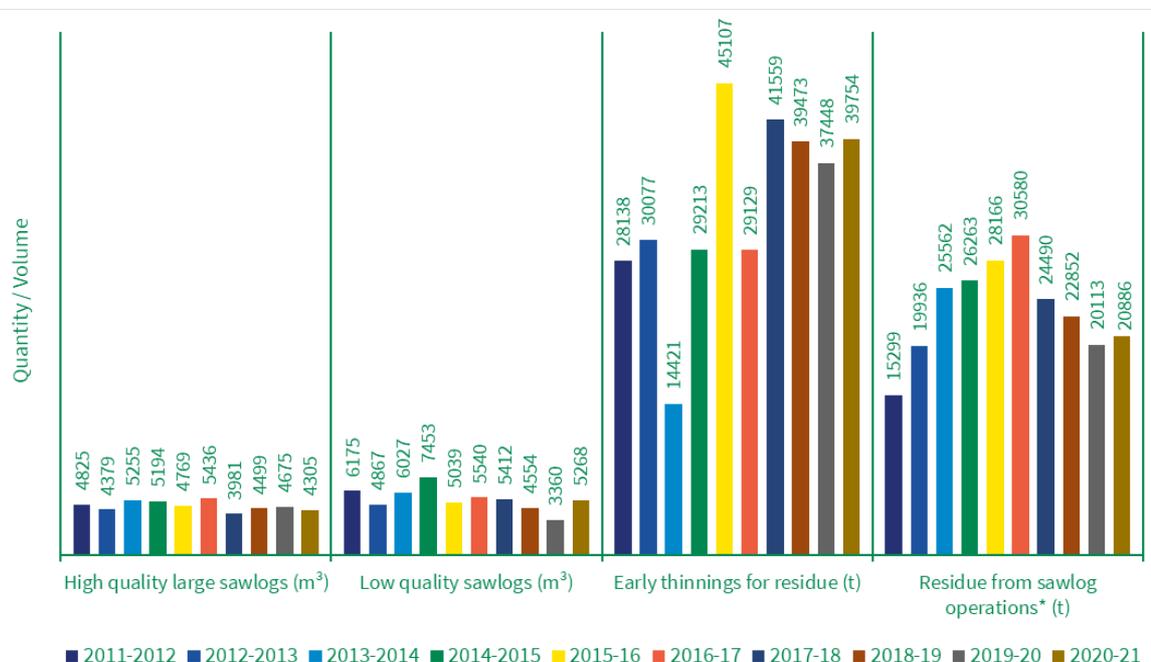
* Residue harvested from Western Lands Lease areas not included

Figure 3 Volume (m³) of high-quality large sawlogs and low-quality sawlogs and quantity (t) of early thinnings obtained from the Riverina Red Gum region since the IFOA started

Table 4 Timber and forest products harvested from the Riverina Red Gum region in 2020–21

Product	Volume (m³) or quantity (t)	Estimated net harvest area (ha)
High-quality sawlog	4,305 m³	327 (all three products from the same area)
Low-quality sawlog	5,268 m³	
Residue	20,886 t	
Early thinning residue	39,754 t	1,359
Residue (Western Lands Leases)	36,244 t	1,310
Firewood permits issued	2,219 t (1,885 permits)	n/a[1]

Source: Forestry Corporation

[1] not available

Brigalow–Nandewar region

The Brigalow–Nandewar IFOA identifies average yearly allocations and specifies maximum annual limits for white cypress logs, western ironbark logs and firewood. The IFOA also specifies maximum

annual limits for small quantities of other logs and products. The IFOA allows the harvesting of forest products other than timber that are of economic value, such as broombush.

Figure 4 shows the volumes of cypress and ironbark sawlogs and fencing, and quantity of firewood obtained from this region in 2020–21 compared with previous years. Figure 5 shows trends in volume harvested, compared to the quota.[39]

In 2020–21, a total of 2,740 m^3 of cypress logs were harvested in the region, representing 7% of the annual average permitted volume (41,000 m^3). The notable decline in volumes of cypress logs after 2017–18 compared to previous years was mainly due to the closure of the Baradine sawmill in March 2018. The sawmill reopened under new owners in June 2021. A total of 552 m^3 of ironbark sawlog and fencing timber were harvested, representing 27% of the specified annual limit (2,050 m^3) and 3,076 t of firewood were harvested, representing 31% of the average yearly allocation (9,800 t).
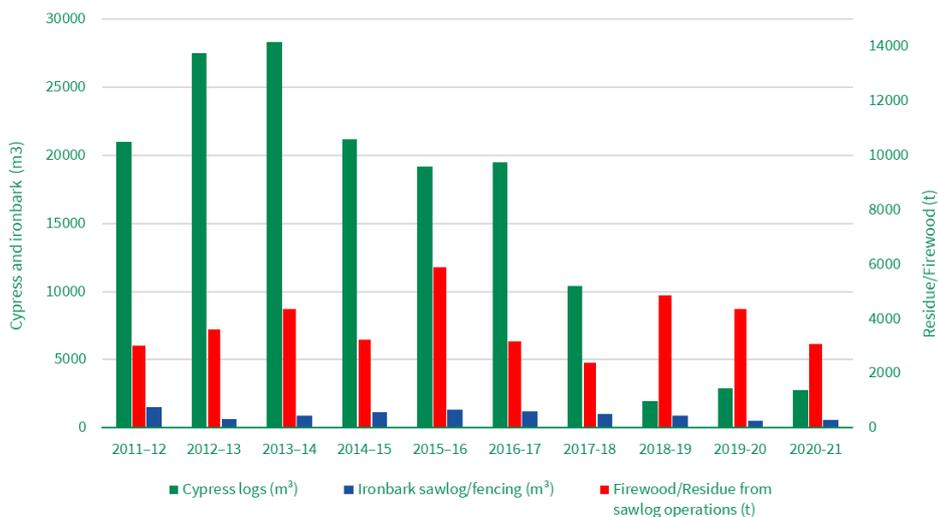
**Figure 4**   **Volumes (m^3) of cypress sawlogs and ironbark sawlogs and fencing and quantity (t) of firewood obtained from the Brigalow–Nandewar region since the IFOA started**

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[39] Anomalies that appeared in the previous two NSW Forestry Snapshot Reports in the Figures 4 and 5, related to ironbark and firewood/residue for 2018–19 and 2019–20, have been corrected in these graphs.
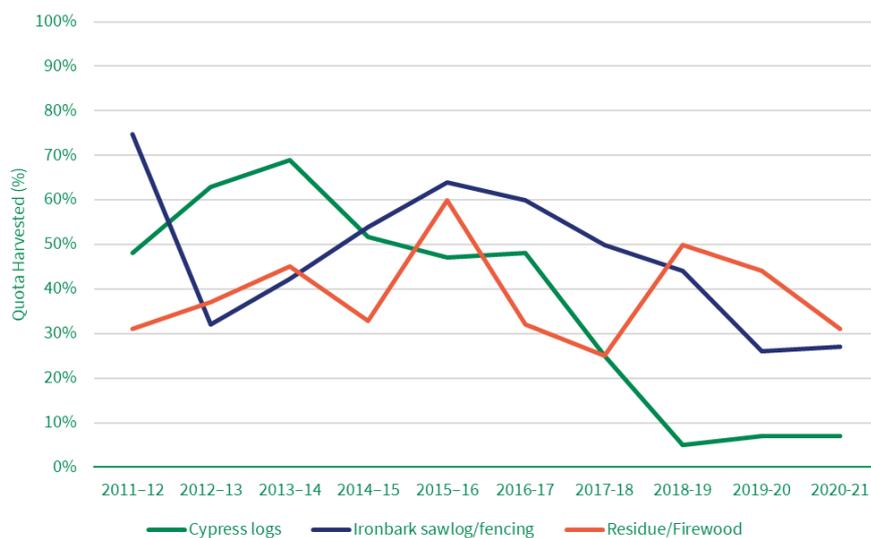
Figure 5   Trends in the percentage of allowable volume over time in the Brigalow–Nandewar region

Table 5   Timber and forest products harvested from the Brigalow–Nandewar region in 2020–21

Product	Volume (m³) or quantity (t)	Estimated net harvest area (ha)
Cypress log	2,740 m³	287
Ironbark log	552 m³	265
Timber products	nil	–
Firewood/residue (not including permits under the Forestry Act)	3,076 t	In conjunction with cypress sawlog and integrated ironbark log operations
Firewood permits issued (see IFOA cl. 82)	770 t (842 permits)	n/a[1]
Didgeridoo	nil	–
Broombush	48 t	n/a[1]

Source: Forestry Corporation

[1] not available

South Western Cypress region

The South Western Cypress IFOA identifies average yearly allocations and specifies maximum annual limits for white cypress logs. The IFOA also specifies maximum annual limits for timber products other than logs and residue (such as craft wood and vine posts).

Figure 6 shows the volumes and quantities of timber, residue and other products obtained from the South Western Cypress region in 2020–21 compared with previous years.

During 2020–21, a total of 12,234 m³ of cypress logs were harvested from south of the Mitchell Highway, representing 79% of the maximum permitted annual volume (22,390 m³). North of the Mitchell Highway, 4,006 m³ of cypress logs were harvested.

The allowable volume of cypress logs from south of the Mitchell Highway is no more than 328,895 m³ for the 14.5-year period that started 1 July 2011. As of 30 June 2021 the total was 193,049 m³.

No sawlog harvesting was undertaken on NSW Western Lands Lease areas.

A total of 7,100 t of residue timber from early thinning and sawlog operation harvest residues were produced. No timber products other than logs and residue were produced. The IFOA provides for harvesting of speciality products, although strict conditions in relation to the relevant species mean these products are not routinely harvested.
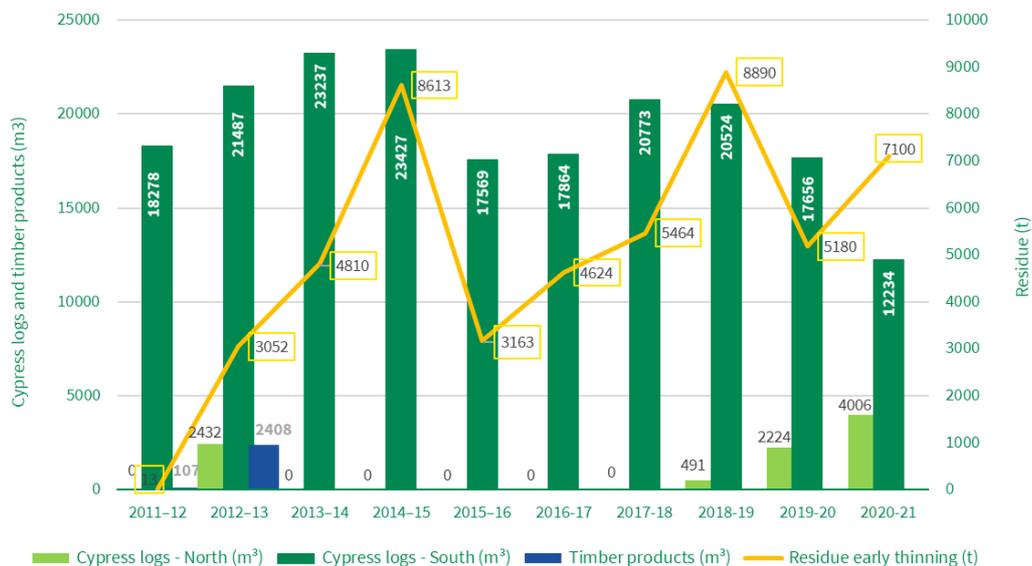
Figure 6 Volume (m³) of cypress sawlogs, timber products other than logs and residue and quantity (t) of residue timber from early thinning obtained from the South Western Cypress region

Table 6 Timber and forest products harvested from the South Western Cypress region in 2020–21

Product	Volume (m³) or quantity (t)	Estimated net harvest area (ha)
Cypress log – south of Mitchell Hwy	12,234 m³	1,312
Cypress log – north of Mitchell Hwy	4,006 m³	391
Cypress log – Western Lands Leases	nil	–
Residue	7,100 t	In conjunction with Cypress sawlog
Timber products – not logs or residue	nil	–
Didgeridoo	nil	–
Firewood permits issued (see IFOA cl. 82)	309 t (296 permits)	n/a[1]

Source: Forestry Corporation

[1] not available

Sustainable harvesting – non-wood forest products

State forests are managed for multiple uses and provide a variety of non-timber products and services including access for apiary, grazing and quarrying. Forestry Corporation reports annually on trends in the provision of selected non-wood forest products and services in State forests in its *Sustainability Report* (FCNSW 2021b).

Forest regeneration

Re-establishment of forests after harvesting is essential for maintaining productive capacity and a requirement under the Responsible Wood® Standard under which Forestry Corporation operates.

Native forests are naturally regenerated with a diverse range of flora, and Forestry Corporation monitors the regeneration of commercial species, which are those that can be harvested for timber. Timber plantations are replanted by hand with commercial species.

Native forest

Native forests in NSW are harvested using silvicultural techniques that generally aim to optimise natural regeneration. Forestry Corporation monitors regeneration of native forests and uses different silvicultural techniques depending on the forest conditions. In 2020–21, a total of 8,326 ha of native forest were harvested using an integrated silvicultural prescription. In addition, 2,009 ha of cypress release and thinning was undertaken, 265 ha of ironbark harvesting and 2,996 ha redgum harvesting. In total 13,596 ha of native forest were harvested in this reporting period.

For coastal forests an assessment of survey plots during the reporting period found 85% were effectively stocked with commercial species of regenerated seedlings and trees retained after harvesting. This is similar to 2019–20 (84%) and higher than the regeneration threshold of 65% of assessed plots in any given harvest area which is considered adequate stocking of commercial species. Forestry Corporation uses a sampling methodology to assess regeneration success and is moving towards remote assessments using drones to allow census recording of regeneration success.

More information is available in Forestry Corporation's *Sustainability Report 2020–21* (FCNSW 2021b).

Plantations

Forestry Corporation reports on the area of plantations harvested and replanted in its annual Sustainability Report.

The area of softwood plantations harvested by Forestry Corporation in 2020–21 remained significantly higher than normal due to post-fire salvage harvesting carried out in fire-affected plantations. Forestry Corporation annual replanting program also increased to restock fire-affected plantations.

Health and vitality of native forest ecosystems

Measuring the scale and impact of pest animals, weeds, disease and insect infestations in forests, and monitoring and mitigating fire impacts, helps inform the development of adequate management responses to these threats.

The NSW State of the Environment reporting provides an overview of pest threats, monitoring and control strategies in NSW which is updated every three years.[40]

Monitoring and control of pests and disease

Forestry Corporation

Forestry Corporation funds the DPI Forest Health Team to undertake annual surveys to find out the impacts of disease and pests on the health on the timber plantations it manages. Reports on health surveys detail the location, extent and severity of detected damaging pests, diseases, weeds and climatic factors with recommended corrective actions. These are summarised in Forestry Corporation's Sustainability Report.

Forestry Corporation works with a range of partners and land managers to identify priority pests and weeds and carry out targeted control works at a coordinated landscape scale to maximise

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[40] www.soe.epa.nsw.gov.au

effectiveness. This includes working closely with LLS on a range of cross-tenure pest control programs and collaborating on regional strategic weed management plans.

In 2020–21, Forestry Corporation spent over $5 million on pest animal and weed control in areas under its management (hardwood and softwood divisions), a significant increase from the previous period ($2.6 million). This included significant work in partnership with LLS to target wild dogs in the aftermath of fires and drought and increased weed control in conjunction with higher rates of plantation re-establishment. Further details are available in Forestry Corporation's *Annual Report* (FCNSW 2021a) and *Sustainability Report* (FCNSW 2021b).

Department of Regional NSW – DPI and LLS

DPI Biosecurity provides forest health and biosecurity services to plantation and native forest managers on the detection, mapping and management of pests and diseases. Some key activities during the 2020–21 reporting period are outlined below.

Pest animals

Regional Strategic Pest Animal Management Plans (RSPAMPs) have been put in place for each of the 11 LLS regions that include areas covered by IFOAs in Figure 1 of this report. The plans are available on the LLS website.[41]

The plans identify the priority established pest animals in each region and the general management approach for these species, to help guide more specific local management plans. The regional plans emphasise the shared management responsibility of public and private landholders as well as the important role of the general community in helping to prevent the establishment of new pest species. The plans cross-reference the NSW Invasive Species Plan 2018–2021[42] to help ensure a consistent approach to pest animal management across NSW.

Statewide maps of the distribution and relative abundance of priority pest animals published in 2017 were a key information source for RSPAMPs. These maps will be updated every five years, or more often for species that are still spreading rapidly, such as feral deer (updated 2020).

During the reporting period the NSW Vertebrate Pest Research Unit[43] continued research projects in collaboration with the Centre for Invasive Species Solutions and other partners. Improved solutions to manage the impacts of feral cats, feral deer, wild dogs/foxes, feral pigs and rabbits are being developed.

Following the 2019–20 bushfires, increased effort was directed towards the collaborative control of pest species such as deer and pigs in fire affected areas. This included extra investment and support at both the state and federal level.

Weeds

In 2020–21, the NSW Weed Biocontrol Taskforce, led by DPI's Weed Research Unit, did research to find suitable biological agents to combat ox-eye daisy, leaf cactus, mother-of-millions and blue heliotrope. The Taskforce also mass reared and released agents to help in the management of gorse, Scotch broom, Hudson pear, Madeira vine and cat's claw creeper. All these weeds are in forest areas. Further weed biocontrol research continued on some aquatic weeds.

The 11 LLS regions have a Regional Weeds Coordinator and Regional Weeds Committee in place to for the set-up of the Regional Strategic Weeds Management Plan. Regional Weeds Committees have members from a range of tenures and industries who have a duty to manage weeds, including private, commercial and government forestry. Each Regional Strategic Weed Management Plan identifies forestry assets and biosecurity risks associated with forestry-related land uses in each region. New regional plans will start in early 2023.

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[41] www.lls.nsw.gov.au/biosecurity/pestplan

[42] www.dpi.nsw.gov.au/biosecurity/weeds/strategy/strategies/nsw-invasive-species-plan-2018-2021

[43] www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/vertebrate-pest-research

Local control authorities (LCAs) within each region, usually local councils, are responsible for operational inspections of land, compliance, control of certain high-risk weeds and engagement with owners and occupiers of land, including forestry lands. LCAs report on inspections through NSW DPI's Biosecurity Information System – Weeds (BIS).

In 2020–21 a total of 80,337 inspections were carried out across all land tenures, including land used for forestry. Records indicate that 388 inspections on State forests were conducted in 2020–21.

Distribution of weeds in regional plans and maps of inspection locations are currently available to NSW Government agencies through BIS. In the future, the aim is for maps to be publicly available at a regional/broad scale on NSW WeedWise.

DPIE and NPWS

Saving our Species management actions and strategies

The Saving our Species (SoS)[44] program strategically identifies the most important actions needed to ensure the survival of threatened species, populations and ecological communities across NSW. In 2020–21 SoS set up projects to reduce threats and monitor outcomes for more than 350 threatened species and ecological communities.

SoS also includes specific strategies to address key threatening processes such as invasive pests and weed species, disease and climate change. These strategies include eradication and/or containment objectives where appropriate, as well as specific research and development required to better address the key threatening processes. During the reporting period, examples of SoS funded research projects include those to inform better management of feral cats and deer as well as exotic vines and scramblers.

On 1 July 2021, SoS secured an additional $75 million to continue the Saving our Species program for another five years, from 2021 to 2026.

Pest and weed monitoring and control on the national parks estate

In addition to continuing regular pest and weed management activities on the national parks estate, in response to the 2019–20 bushfires NPWS started the largest feral animal control program it has ever undertaken with an annual commitment to 1,000 hours of aerial shooting and 30,000 km of aerial baiting. Weed control activities continued post-fire to benefit threatened species and to address issues in areas previously inaccessible due to dense vegetation. Further information is available in the publication *DPIE Wildlife and Conservation Bushfire Recovery* (DPIE 2020b).

Soil and water quality

Protecting the soil and water in forests ensures they can continue to provide important ecosystem services such as clean water, biodiversity and the prevention of soil erosion, and can be used sustainably for multiple purposes. Soil and water in forests may be damaged or degraded by activities such as road construction and maintenance, grazing, wood harvesting, fires and recreation. Drought, increasing temperatures, severe storms and bushfires can also harm these resources.

Ongoing strategies to mitigate these risks include conditions in the IFOAs, RFAs and the PNF Codes of Practice for the protection of soil and water during forestry operations.

Monitoring soil and water

Forestry Corporation has been monitoring stream flow and water quality in native forests and softwood plantations since the 1960s. Early aspects of the program were to check if forestry activities had an identifiable impact on water quality and to quantify any impact. More recently a macroinvertebrate sampling program started and is being assessed for use for catchment scale monitoring. Results from the program have shown that water from streams in native forests is of a higher quality than from pine

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[44] www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program

plantations. They have also shown that Forestry Corporation's management practices were successful at limiting any impact on turbidity and suspended sediment from forestry activities (FCNSW 2021b).

As part of the FMIP/Coastal IFOA suite of projects, the NRC monitors long-term trends in water quality and quantity in forested catchment and also soil health and stability.

Following a literature and data review in 2020 which identified the indicators of key water quality and quantity of the health of forested catchments within the NSW RFA regions and assessed data availability to perform trend analyses, work was commissioned by the NRC to deliver baselines, drivers and trends for water quality and quantity.[45]

Under the FMIP, the NRC also commissioned a consortium to deliver baselines, drivers and trends for soil stability and health in forests across the NSW Regional Forest Agreement areas. In the first phase of the project a literature review was completed resulting in recommendations to guide the second stage of the project (DPIE 2021b).

Updates on progress for both the water and soils projects can be found on the NRC website.[46]

Drought, temperature, fire and flood

The NSW State of the Environment reporting (EPA 2021) details how the NSW climate is changing due to global warming. Changes include increased variability in rainfall and temperature and some increase in the incidence of extreme weather events, changes expected to become more severe over time. Future effects of climate change were predicted to be more severe droughts and heatwaves; reduced water availability; damaging impacts on species, ecosystems and agriculture; and increased fire risk.

The *NSW State of the Environment 2021* also reported that fire weather conditions have become more severe and the fire season longer in some parts of NSW and projected that the trends would continue. The trend towards longer fire seasons and the increased incidence of fire-induced storms are supported in the findings of the NSW Bushfire Inquiry (DPC 2020).

During 2019 and into 2020 the combination of continuing drought, the hottest year on record in Australia to date (2019) and associated extreme temperatures created conditions that contributed to the major bushfires between September 2019 and March 2020. The bushfires caused significant widespread disturbance to landscapes and infrastructure in forestry regions particularly in the Coastal IFOA, impacting soil and water quality. Subsequent severe storm events during 2020 and 2021 caused periods of heavy rain and flooding in burnt areas creating the potential for erosion reduced soil stability, and further impacting forestry infrastructure.

The EPA and Forestry Corporation carried out independent assessments of fire-affected areas in forestry regions including assessing impacts and identifying risks to soil and water quality and biodiversity. Both were cautious when considering risk mitigation measures required before the resumption of timber harvesting in fire-affected areas. Special site-specific operating conditions, supplementary to those in the Coastal IFOA, were applied to forestry operations in fire-affected areas until March 2021. The conditions aimed to mitigate the specific environmental risks at each site and were tailored based on the plants, animals, habitats, soils and waterways at each site. The conditions that applied to fire-affected forests during the reporting period, are on the EPA website.[47] Forestry Corporation continued to apply augmented environmental protection measures on native forestry operations in fire-affected forests throughout 2021.[48]

LLS also did surveys that helped guide private forest managers and customers following the bushfires, providing targeted advice focused on soil and water quality to private native forest managers.

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[45] www.nrc.nsw.gov.au/fmip-baselines-soil-and-water-projectsw1

[46] www.nrc.nsw.gov.au/fmip-baselines-soil-and-water

[47] www.epa.nsw.gov.au/your-environment/native-forestry/bushfire-affected-forestry-operations

[48] www.forestrycorporation.com.au/operations/about-our-harvesting-operations/fire-affected-native-forests

Monitoring and assessment of the impacts of the bushfire season and flooding on NSW forests continued during 2020–21, undertaken by Forestry Corporation, DPI, EPA, DPIE, NPWS, and the NRC and its collaborating institutions.

Under the Coastal IFOA monitoring program, the NRC commissioned work to advise on the implications of changing fire regimes on Coastal IFOA objectives and outcomes. The final report is expected in the next reporting period. Project updates can be found on the NRC website.[49]

Contribution of native forests to global geochemical cycles

Sustainably managed forests play an important role in reducing greenhouse gases by sequestering carbon through forest growth and carbon storage in hardwood products, such as flooring and furniture. SOFR 2018 provides estimates for carbon storage up to 2016 (ABARES 2018).

In addition, a product substitution impact is achieved by using locally grown, certified wood and timber products instead of products sourced from less-regulated markets or other popular but more carbon-intensive alternatives, such as concrete and steel.

A key component of DPI's Forest Carbon research program is the quantification of the carbon footprint of production forests and wood products in NSW, including the application of Life Cycle Assessments. This is an ongoing area of research, with information on current projects and recent publications available on the DPI website.[50]

Carbon balance of NSW forests

Maintaining forest carbon stocks is an important indicator of sustainable forest management.

Forestry Corporation reports annually on the carbon sequestered in State forests and renewable timber products in its Sustainability Report.

Through the NSW FMIP, the NRC has commissioned work to quantify the carbon balance of NSW forests and how this may change under different policy, management and climate scenarios. The research will help to develop a better understanding of trends in forest carbon in NSW.

Information and updates can be found on the NRC website.[51]

Projecting net sequestration from NSW forests

Carbon sequestration and emissions from NSW forests are addressed within the state's greenhouse gas inventory and included within DPIE's annually updated projections of NSW emissions out to 2050 as part of the Land Use, Land Use Change and Forestry (LULUCF) sector. Net sequestration from forests is inventoried and projected to offset emissions from other sectors within the state's accounts.

Information on the NSW emission projections can be found on the DPIE website[52] with historical emissions and projections accessible via the interactive NSW Net Zero Emissions Dashboard.[53]

Bushfires and regrowth

The Australian Government Department of Industry, Science, Energy and Resources, in its report *Estimating greenhouse gas emissions from bushfires in Australia's temperate forests: focus on 2019–20* (DISER 2020), proposed that the post-fire recovery of forests generates a large carbon sink as, in general, Australian eucalypt forests recover quickly. Burnt areas of forest, generally

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[49] www.nrc.nsw.gov.au/ifoa-mer-research

[50] www.dpi.nsw.gov.au/forestry/science/forest-carbon

[51] www.nrc.nsw.gov.au/fmip-baselines-carbon-cycles

[52] www.environment.nsw.gov.au/research-and-publications/our-science-and-research/our-research/energy-and-climate-change/net-zero-emissions-modelling-and-research

[53] www.seed.nsw.gov.au/net-zero-emissions-dashboard

understorey vegetation, grasses and canopy (leaves/branches), rapidly build up carbon again following fire (within 10–15 years).

Forestry Corporation will be monitoring regeneration of native forests and replanting all fire-affected plantations at an accelerated rate.

There will be ongoing monitoring by NSW Government agencies to see if the ability of forests to recover after fire is impacted by more frequent and more intense fires, such as those experienced in 2019–20, and any impact on carbon uptake by forest areas.

NSW Net Zero Plan

NSW is committed to addressing climate change through a goal of net zero carbon emissions by 2050. The first stage of the Net Zero Plan[54] includes a target of 35% emissions reduction by 2030 compared to 2005 levels[55]. The plan includes commitments to improve and expand the NSW national park footprint to protect land that is currently a carbon sink and create opportunities for extra carbon sequestration through land restoration initiatives.

Long-term social and economic benefits of native forests

Forests are managed to deliver environmental, social, economic and heritage value to communities in NSW.

Forest products and services

Australian forest and wood products statistics produced by ABARES indicate that, for 2020–21, the NSW total log harvest was 6.45 million m^3 with 399,800 m^3 of native hardwood, 297,790 m^3 of plantation hardwood and 5.75 million m^3 from softwood plantations, and a total value of over $387.5 million – ABARES website.[56] ABARES provides comprehensive information about NSW contributions to the national log harvest as well as the value of other forest products through its State of the Forest reports (SOFR). The next report will be published in 2023.

Details of all timber harvested by Forestry Corporation in 2020–21, including under the Coastal IFOA and Western IFOAs, are published annually in Forestry Corporation's Sustainability Report.

State forests also provide a range of products and services that benefit local communities and promote economic diversification including forest products and services such as firewood, honey, oils and cattle grazing. Forestry Corporation's *Sustainability Report 2020–21* (FCNSW 2021b) includes information about the types and volumes of other products and services produced during the reporting period and comparisons with prior years.

Honey is a major non-wood forest product. Honeybees help to pollinate a wide variety of crops and the loss of hives can jeopardise future local horticultural crops. The honeybee industry was heavily impacted by drought and then bushfire during 2019–20 when thousands of hives were destroyed. The NSW Government at the time extended the waiver on annual fees for 2020–21 for existing beekeeping permits on public lands, including national parks, to provide relief to beekeepers affected by the 2019–20 bushfires.[57]

A further initiative to support beekeepers in the reporting period was the introduction of the BPASS portal. This online tool allows beekeepers in areas managed by NSW National Parks and Wildlife Service, Forestry Corporation and Local Land Services to apply for, and manage, their public apiary site permits and licences all in one place.

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[54] www.environment.nsw.gov.au/topics/climate-change/net-zero-plan

[55] In late 2021, the NSW Government updated its carbon emission reduction objective to 50% below 2005 levels by 2030.

[56] www.agriculture.gov.au/abares/research-topics/forests/forest-economics

[57] https://www.dpi.nsw.gov.au/animals-and-livestock/bees/

There were 1,986 commercial bee sites in the national parks estate in 2020–21 providing a potential revenue source as well as commercial opportunities for the apiary industry. A further 5,020 commercial bee sites were provided on State forests.

Recreation and tourism

Recreation and tourism activities in native forests have a high social value for the NSW community, and forests are managed to accommodate these activities. A total of 5.48 million hectares of forested land is available for recreation and tourism in the NSW national parks system (lands reserved under the NPW Act). The 2 million hectares of the State forest estate are also available for recreation and tourism.[58]

Both NSW national parks and State forests play a key role in the visitor economy, with nature-based tourism the highest growth tourism sector and its contribution to the NSW economy is significant.

The 2018 Park Visitor Survey estimated national park visitation to be 60 million visits. The 2018 national parks survey was summarised in the *Forestry Snapshot Report 2017–18* (EPA 2019).

Interim data on visitation trends from mobile device based monitoring of major park and locations indicate a strong growth trend in park visitations in 2020–21 when compared to the previous reporting period. This growth was driven by post bushfire recovery and a strong focus on national parks as options for recreation during the COVID-19 pandemic. Updated information on visitor numbers to NSW national parks will be available in 2023, further information is available on the DPIE website.[59]

Forestry Corporation provides public access across its estate and facilities for a wide range of activities for community benefit. Approximately 31 million visits are made to NSW State forests annually, supporting local and regional economies.

Many activities, such as mountain-bike riding, horse riding, camping and four-wheel driving, can happen in State forests free of charge. Organised groups, clubs (including mountain-biking, rock climbing, archery and shooting clubs), event organisers and commercial tourism operators can use State forests or set up recreational facilities within forests under a permit system.

Further information on recreation and tourism activities in State forests is available on Forestry Corporation's website.

Managing recreational assets

National Parks and Wildlife Service

There was increased investment in national parks visitor infrastructure. More than $450 million will be invested in improving community access, with more than 200 visitor infrastructure projects across the national park estate.

In 2020–21 NPWS invested $74.1 million in critical visitor infrastructure in national parks, including walking trails, mountain bike trails and lookouts. This continuing investment in infrastructure and improved accessibility aims to increase nature-based tourism in NSW and boost economic recovery and community wellbeing particularly in regional areas where the tourism sector and local employment have been significantly impacted by drought, bushfire, flood and the pandemic.

Details of visitor infrastructure projects progressing are provided on the DPIE website.[60]

Forestry Corporation

The management of tourism and recreational facilities is part of Forestry Corporation's commitment to managing forests for these values. The extensive road network in State forests provides opportunities for recreational pursuits and a large number of designated visitor sites have been developed and enhanced over recent years, several winning state and national tourism awards.

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[58] Figure drawn from 2018 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) data.

[59] www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/park-management/park-visitor-survey

[60] www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/park-management/community-engagement/walking-tracks-and-trails-in-national-parks

In 2020–21, Forestry Corporation invested further in its program of bushfire and flood reparation of visitor areas. This included enhancing free-to-use picnic and camping areas, lookouts and walking trails.

Forestry Corporation also continued to progress tourism investment programs during this reporting period, partnering with other organisations, including:

- nature-based tourism enhancement in Bago State Forest, Snowy Valleys — to upgrade and enhance existing visitor free-to-use areas in Bago State Forest while also working to remediate and design for future preservation of sensitive Montane Peatlands (partner: the Mulloon Institute); and to re-establish the iconic Sugar Pine Walk destroyed during the 2019–20 bushfires incorporating sculpture and art in the design process (partner: Sculpture by the Sea).
- development of Guulabaa – Place of Koala, in Cowarra State Forest. Located on the mid North Coast between Wauchope and Port Macquarie the project is establishing a new tourism precinct and will include the world's first wild koala breeding facility (partner: Koala Conservation Australia); WildNets forest adventures (partner: WildNets); the Big Koala sculpture (partner: Hello Koalas Sculpture Trail); and Bunyah café and gallery (partner: Bunyah Local Aboriginal Land Council).

The Forestry Corporation website has further information on visitor and recreational projects.[61]

Employment in the forestry sector

Employment in the forestry sector is a direct measure of how forests contribute to the NSW economy. Forestry jobs range across harvesting, support services, wood product, pulp and paper manufacturing, conservation and reserve management.

In 2020–21, employment in forestry and related industries in NSW increased by 3% year-on-year to 19,800 (ABS 2021). This was due to higher employment in forest support services, and pulp, paper and converted paper product manufacturing. NSW accounted for 28% of Australian employment in the sector, which fell by 4% to 69,000 in 2020–21 (DPI 2021b).

Forestry Corporation of NSW makes up a small part of the forestry industry and publishes information in its Annual Report about its direct employees. Substantial forestry sector employment is in private businesses including timber processors and contractors engaged in forest management, planting, timber harvesting and haulage.

NSW Government agencies have employees in policy and operational roles to support and regulate the forestry industry in NSW, however, they are not categorised as forest sector roles.

Natural and cultural heritage values

An important component of ESFM is the identification and protection of natural and cultural heritage values and sites for the benefits they provide to both non-Aboriginal and Aboriginal communities.

Aboriginal connections to forest

Aboriginal people's participation in forest management helps ensure natural and cultural values of importance to them are protected, maintained and enhanced in NSW forests. As of 2016, over 56,000 Indigenous cultural places and heritage sites were registered across 37,548 ha of NSW forests (ABARES 2018).

There is increasing recognition of the importance of setting up tenure and management arrangements that let Aboriginal people maintain cultural, spiritual and social connections to land, including forest areas and the landscapes, flora and fauna of significance to local communities.

SOFR 2018 identified four different types of Indigenous land ownership and management and provided data on the area of forest in these categories. Further work in 2020 refined the four

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categories and created a new dataset to allow separate reporting on the relationships between Indigenous peoples and land or forest (ABARES 2020; Jacobsen R et al 2020).[62]

Indigenous ownership and management categories across all tenures

Indigenous owned: freehold land or forest that is owned by Indigenous communities, or land and forest for which ownership is vested through other mechanisms

Indigenous managed: land or forest that is managed by Indigenous communities (e.g. Crown reserves and leases)

Indigenous co-managed: land or forest that has formal, legally binding agreements in place to include input from Indigenous people in the process of developing and implementing a management plan (e.g. joint management arrangements, nature conservation reserve memorandums of understanding)

Other special rights: land or forest subject to native title determinations, registered Indigenous Land Use Agreements and legislated special cultural use provisions. These may provide for the right to access areas of cultural significance or the use of areas for cultural purposes or provide a legal requirement for consultation with the local Indigenous community before any major development activities take place

Source: ABARES 2020

National Parks and Wildlife Service

Aboriginal joint management (co-management)

Aboriginal joint management is a partnership between NPWS and Aboriginal communities for the management of a park or reserve or multiple parks and reserves. The program works with Aboriginal people to foster opportunities and partnerships that help protect their culture and heritage and enable them to manage parks and access traditional lands. Aboriginal joint management is one way in which NPWS embraces Aboriginal culture from ancient to modern and strengthens the role of Aboriginal communities in decision-making.

NPWS has 33 agreements with Aboriginal communities to jointly manage 149 parks and reserves covering almost a third of the national parks estate. Each year, the agency supports and funds a meeting of the NSW Aboriginal Joint Management Custodians (Aboriginal representatives of these agreements). The meeting and follow-up working groups are an opportunity for these representatives to have input into statewide NPWS policy issues.

Training

In 2020–21, NPWS arranged 19 training sessions attended by 100 Aboriginal board and committee members/community members. Topics included:

- Aboriginal site identification training
- NSW Rural Fire Service training
- first aid & resuscitation training
- governance training.

Aboriginal Park Partnerships Funding Program

Each year NPWS offers an internal contestable funding program for Aboriginal Park Partnership projects. This funding is available to Aboriginal community groups partnering with NPWS. In 2020–21, $70,000 in grants supported activities conducted across 10 parks and reserves.

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[62] data.gov.au/data/dataset/australia-s-indigenous-forest-estate-2020

Cultural events held on NPWS parks and reserves were attended by over 50 Aboriginal people. These events included:

- A 'Back to Kunderang' culture camp weekend was held. An Elder and a former staff member also attended, sharing stories of their time in the Sites of Significance survey in the 1970s. Recordings of elders and reports that had been misplaced were provided to community members.
- Kinchega National Park - Keeping Place Stone Tool Cataloguing Workshop, Connection Tag Along Tour and an Aboriginal Cultural Walk Workshop were held.

Seven Aboriginal businesses were contracted for $38,000 to run workshops and general on-ground works including construction, restoration and post fire weed control.

Traditional owner led post fire recovery projects

During 2020–21, NPWS contributed to project development for the Commonwealth regional bushfire recovery funding. Traditional owner led projects, a component of this recovery investment, were scoped in consultation with Aboriginal organisations in each of the bushfire affected regions - Alpine/North Coast/Blue Mountains and South Coast NSW.

Projects to be implemented over the next 18 months include Aboriginal communities undertaking cultural fire management, weed and pest animal control, threatened species protection, cultural heritage surveys, monitoring and protection, and training and capacity building in all these areas.

Forestry Corporation

The Aboriginal Partnership Liaison Team in Forestry Corporation's Hardwood Forests Division works with Aboriginal communities to develop partnership arrangements and manage key sites.

As at June 2021, these areas included:

- 343,241 ha of State forests with Indigenous Land Use Agreements
- six gazetted Aboriginal Places
- 5,136 Aboriginal heritage sites
- 1,688 ha managed for Aboriginal cultural heritage.

Forestry Corporation continued to provide access and co-management arrangements with Aboriginal communities. In addition to arrangements through Indigenous Land Use Agreements (ILUAs) there are seven agreements with communities across the state to manage areas of State forest for camping, teaching and practising culture.

Forty-seven Aboriginal groups were regularly contracted to Forestry Corporation for archaeological site surveys as part of the planning process for harvesting and roading operations. Six Aboriginal groups hold seed and plant collection permits for State forests.

Forestry Corporation also worked with Aboriginal communities to provide fire training and carry out cultural burning in State forests.

Further information can be found in Forestry Corporation's annual Sustainability Report and on the website.[63]

Natural Resources Commission

Under the FMIP, the NSW NRC, commissioned three Aboriginal-led case studies to explore cultural values in northern and southern NSW forests before and after the 2019-20 bushfires. Work on these continued during 2020–21 with each case study facilitated by Firesticks Alliance Indigenous Corporation and guided by local working groups to ensure approaches are tailored to regions and involve relevant land management agencies, experts and knowledge holders.[64]

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[63] www.forestrycorporation.com.au/operations/aboriginal-partnerships

[64] www.nrc.nsw.gov.au/fmip-baselines-aboriginal

Protection of non-Aboriginal cultural values

Forests are also managed to protect and maintain non-Indigenous cultural values. These include sites of historic and aesthetic importance and areas with cultural or social significance to certain community groups. These sites may retain remnants of historic buildings, infrastructure or equipment that show connections to the past, or be valued for their beauty and the opportunities for recreational activities. SOFR 2018 has the most recently compiled data on the area of forest in NSW that have non-Indigenous heritage sites (ABARES 2018).

National Parks and Wildlife Service

Historic heritage overview

NPWS is responsible for the management of a wide variety of historic heritage sites across the national parks estate. Many of these represent one or more of the six 'Key Stories' that are communicated through the heritage items located in national parks. These Key Stories are:

- Creating and Experiencing National Parks – examples include national park infrastructure from various periods and reflecting different approaches, such as visitor centres, signage, seating, shelters and chalets
- Aboriginal Country, Shared History – examples include Aboriginal graves, missions and reserves, camping areas, Aboriginal resistance sites, massacre sites and whaling stations
- Arriving and Settling – examples include landing sites, stone cairns, roads and tracks, huts, homesteads and farms, quarantine stations, migrant camps and construction towns
- Pastoral Lives – examples include shepherds' huts, homesteads, detached kitchens or cook houses, meat houses, sheep washes, woolsheds, river wharfs, stock routes and airstrips
- Defending and Protecting NSW – examples include lighthouses and lighthouse keepers' living quarters, gun emplacements, radar stations, fortifications and military camps
- Making a Living from Nature – examples include sites of work camps, logging trails, sawmills, timber tramways, mines, engine houses, tunnels, water wheels and hydro-electric schemes.

Historic heritage sites managed by NPWS that reflect these Key Stories at June 2021 include:

- one World Heritage site
- five National Heritage List (NHL) sites
- eight nationally significant sites not on the NHL
- 55 State Heritage Registered (SHR) sites
- 56 State Significant sites not on the SHR
- over 150 locally significant sites.

These sites, which include both forestry and non-forestry areas, represent nearly 5,000 individual items of heritage significance.

Historic heritage investment

Each year NPWS offers an internal contestable funding program to assist with the conservation, management and presentation of heritage sites. In 2020–21 funding from this program was provided to 10 heritage sites on national parks estate, which allowed a variety of important conservation planning activities and works to be successfully completed.

Historic heritage post-fire recovery

Some heritage structures were damaged or destroyed during the 2019–20 bushfires and subsequent flood events that affected significant areas of national parks estate covered by the FAs. During 2020–21, following best practice International Council on Monuments and Sites heritage guidelines, NPWS completed the assessment process for each site to determine the appropriate post-fire recovery actions. NPWS also started planning and approvals processes for cases where reconstruction was recommended (eg Kiandra Precinct) or where complete replacement was required, for example,

timber log bridges to be replaced with vehicle loading bridges constructed from non-flammable material.

Ensuring public participation, provision of information, accountability and transparency in forestry operations

Public participation and reporting are important elements of ESFM and are mechanisms to include the community, and promote greater public confidence, in the management of NSW forests. The various regulatory and policy instruments relevant to forestry management in NSW include requirements for public consultation, participation and involvement. A comprehensive list of public consultation requirements and mechanisms is provided in the *Overview of the New South Wales Forest Management Framework V1.1* (DPI 2021a).

Agencies and organisations involved in forestry also have developed approaches to public and community involvement. Forestry Corporation has strong community partnerships and continually engages with local communities around forest management and forestry operations. The NRC hosts community forums where the public can hear insights from researchers on their monitoring programs and ask questions.

In addition to this annual Forestry Snapshot Report, required under the Forestry Act, regular review and reporting is required under other pieces of NSW and Australian government legislation, and also the RFAs and IFOAs. A key focus of these reports is performance against ESFM principles and compliance requirements. Under the Coastal IFOA monitoring program, the NRC reports annually on progress and provides access to data.

Forestry is included in broader reporting undertaken through the *NSW State of the Environment* (three-yearly), the Australian Government *State of the Environment* report (five-yearly) and the Australian Government *State of the Forests* report (five-yearly). Other NSW legislation requires both Forestry Corporation and relevant NSW Government agencies to produce and table annual reports on their operations every year.

At times externally driven processes (formal and informal) lead to public participation and feedback and bring accountability and transparency to native forestry operations. Examples include NSW parliamentary committees and inquiries, and special inquiries like the NSW Bushfire Inquiry in 2020.[65]

Providing incentives for voluntary compliance, capacity building and adoption of best practice standards

Through its Forest Management Framework (DPI 2021a), a combination of legislation, regulation, standards and codes are in place to deliver ESFM. These mechanisms allow for shared administration and management of the native forest estate, public and private, recognising the interests of private landholders and the customary and traditional rights of Aboriginal people.

The framework includes continuous review, improvement and implementation of instruments such as the IFOAs and PNF Codes of Practice and best practice standards and mechanisms for voluntary compliance, compliance monitoring and enforcement.

Applying best-available knowledge and adaptive management processes for best practice forest management

There was continued funding of the NRC to oversee a comprehensive suite of research and monitoring through the FMIP and associated programs.

In addition to the NRC's monitoring and research programs, NSW Government agencies and organisations involved with ESFM of NSW forests also have dedicated research and monitoring programs. These programs support efforts to ensure continuous improvement and adaptive

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[65] www.nsw.gov.au/nsw-government/projects-and-initiatives/nsw-bushfire-inquiry

management practices based on current science and best-available knowledge (see sections above in this report for examples).

During this reporting period the application of best available knowledge, adaptive management and the precautionary principle to deliver best practice management of NSW forests continued through the implementation of the Coastal IFOA. An example is work by multiple agencies (Forestry Corporation, EPA, DPI and DPIE) to implement site-specific operating conditions to supplement the requirements of the Coastal IFOA in areas impacted by the 2019–20 bushfires.

Applying the precautionary principle in preventing environmental harm

The Forestry Act and Part 5B of the Local Land Services Act both embed the principles of ESFM, including using the precautionary principle, into the objectives of these Acts. In making or amending IFOAs or the PNF Codes of Practice, the relevant agencies and Ministers are required to consider these principles.

In this reporting period, the EPA and Forestry Corporation of NSW continued to manage operations to reduce the environmental impacts resulting from the 2019–20 bushfires and subsequent extreme weather events and flooding. This included considering the precautionary principle in assessing potential risks associated with continued operations in affected areas.

Acting in accordance with the precautionary principle ensures forestry activities include practical measures to protect wildlife, soil and water, and the environment in general during operations. In extreme circumstances — drought, bushfire, extreme weather and floods – applying special operating conditions and setting up extra environmental protection measures to forestry operations can address or mitigate potentially harmful impacts.

Section 2: Compliance

Compliance with IFOAs and other requirements

IFOAs provide the regulatory and operational framework for the conduct of native forestry operations in State forests and on Crown-timber land. An IFOA enables an integrated environmental regulatory regime for native forest harvesting operations in NSW forest regions.

At 30 June 2021 there was one IFOA for the coastal region (Coastal IFOA) and three covering the Brigalow–Nandewar, South Western Cypress and Riverina Red Gum regions (Western IFOAs) (see Appendix B).

IFOAs authorise the carrying out of forestry operations in accordance with principles of ESFM. Each IFOA integrates the regulatory regimes for environmental planning and assessment, the protection of the environment, and threatened species conservation – including threatened species, populations and ecological communities under Part 7A of the *Fisheries Management Act 1994*.

The former transition period that allowed some operations planned or started under the former coastal IFOAs to continue under those rules, ended on 16 November 2020. All forestry operations in native State forests within the region must now be undertaken in accordance with the Coastal IFOA requirements.

EPA compliance program

The EPA is responsible for regulating native forestry operations on private and public (Crown) land in NSW. This is to ensure that impacts on soil and water, threatened species and their habitat are mitigated in accordance with the PNF Codes or IFOA.

In 2020–21, the EPA carried out a strategic compliance and enforcement program focusing on native forestry operations. The compliance program comprised proactive risk-based assessments and inspections; and responding to concerns raised by the community.

Proactive compliance activities

The EPA focuses its regulatory efforts on operations where there are higher environmental or regulatory risks. To determine the risk levels of forestry operations, EPA officers assess each planned harvesting operation against environmental risk criteria shown in Table 7.

Environmental risk criteria are intended to be adaptable and responsive to emerging environmental issues and trends in environmental compliance.

The EPA also considers the public interest when assessing risk. This includes predicted or actual elevated community concern about a proposed harvesting operation and the proximity of proposed forestry operations to protected and environmentally sensitive areas and rural and residential areas. This risk assessment enables the EPA to focus its proactive regulatory efforts on operations that pose the highest level of risk. This approach is supplemented by other local and regional priorities.

Responsive compliance activities

Responsive activities include investigating public complaints or notifications. They can also include self-reported incidents by Forestry Corporation. The EPA investigates all public reports of alleged non-compliance.

Forestry Corporation undertook a review of its compliance framework during 2020–21. It plans to recalibrate its compliance practice by centralising compliance monitoring and reporting, re-training staff and contractors in the regulations, adding on-ground resources to improve compliance and continually improving systems and processes.

Table 7   Crown forestry and private native forestry environmental risk assessment criteria

Environmental risk criteria	Crown forestry	Private native forestry
Hollow-bearing and recruitment trees – planned retention rates	Yes	No
Threatened species – proximity to operation and density of records	Yes	Yes
Koalas – proximity to operation and density of records	Yes	Yes
Soil erosion and water pollution hazard – including connectivity of logging, roads and tracks to sensitive waterways	Yes	Yes
Streams and drainage features – the quantity and ordering of streams	Yes	Yes
Exclusion zones – types and proportion of sensitive areas	Yes	Yes
Threatened ecological communities – actual or potential occurrence	Yes	Yes
Forest structure – planned intensity of operations	Yes	No

Compliance priorities differ across tenures due to different rules that apply and other factors. Issues are still checked even if not identified as priorities

Regulatory tools to achieve compliance

The EPA actively monitors and enforces compliance at forestry operations and uses a range of regulatory tools to ensure compliance with the IFOAs or PNF Code and reduce potential environmental harm. Tools include education, audits, field inspections, investigations, desktop assessment, notices, orders, advisory letters, official cautions, penalty notices and legal action. These tools are explained in more detail in the EPA's Compliance Policy. Public registers are maintained by the EPA to provide information on investigations initiated by community reports and compliance audit reports for specific operations. The Compliance Policy[66] and registers can be accessed on the EPA's website.[67]

Photo: Brent Mail Photography/EPA

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[66] *EPA Compliance Policy* replaced by the *EPA Regulatory Policy* from December 2021

[67] www.epa.nsw.gov.au/your-environment/native-forestry

Crown native forestry compliance and enforcement activities

This section shows the EPA's native forestry compliance and enforcement activities on State forests.

In 2020–21, as part of its compliance program the EPA inspected 43 operations, with 35 inspections in Coastal IFOA regions (see Table 8). These inspections were conducted either in response to reports of alleged non-compliance from the public, to support investigations, or as part of proactive compliance activities.

During this reporting period, no inspections were undertaken in the Western IFOA regions due to a combination of factors including low numbers of harvest operations, the nature of harvest operations being low risk, and the impact of the 2019–20 bushfire season and COVID-19 on resourcing.

Table 8   Number of Crown native forest operations inspected in 2020–21

IFOA (region or sub-region)	Number of operations inspected for compliance and enforcement
Coastal	35
Brigalow–Nandewar	0
Riverina Red Gum	0
South West Cypress	0
Non-IFOA	8
Total	**43**

In 2020–21 the EPA also finalised compliance actions for several operations in IFOA regions with 20 actions finalised in the Coastal IFOA regions (see Table 9). No compliance actions were taken in relation to operations in the Western IFOA regions or non-IFOA areas of Crown native forests.

Table 9   Number of Crown native forest operations for which compliance action was taken in 2020–21

IFOA (region or sub-region)	Type of compliance action[1]						
	Advisory letters	Formal warnings	Official cautions	Clean-up notices	Penalty notices[2]	Stop work orders[2]	Prosecutions
Coastal	6	1	6	0	5	2	0
Total operations	**6**	**1**	**6**	**0**	**5**	**2**	**0**

The numbers in Table 9 represent the number of operations that were issued with a compliance action, not the total number of actions issued. If several penalty notices were issued for an operation this is recorded as one in this table. In addition, each compliance action may relate to several breaches.

As the transition to the new Coastal IFOA fell in the reporting period, compliance actions for Coastal regions may be linked to investigations under the former IFOAs.

[1] An explanation of compliance action types can be found in the *EPA Compliance Policy (EPA Regulatory Policy* from December 2021).

[2] The compliance actions noted were taken in response to a range of matters including retained trees, protection of riparian zones and threatened species.

Private native forestry compliance and enforcement activities

The EPA undertakes inspections and investigations into PNF operations. During 2020–21, EPA officers visited 36 planned or active PNF sites in the field to conduct inspections or as a part of ongoing investigations.

The EPA also finalised compliance actions for 16 operations (see Table 10).

Table 10   Number of private native forestry operations for which compliance action was taken in 2020–21

Type of compliance action	Number of operations issued with compliance action
Advisory letter	9
Directions (voluntary)	0
Formal warnings	6
Official cautions	1
Clean-up notices	0
Stop work orders	0
Penalty notices	0
Prosecutions	0

The numbers in the table represent the number of operations that were issued with a compliance action, not the total number of actions issued. If several penalty notices were issued for an operation this is recorded as one in this table. In addition, each compliance action may relate to several breaches.

Fisheries

The FLA Act started on 9 November 2018, and nine days later the Coastal IFOA started. This had the effect of turning off the deemed Fisheries Threatened Species Licence in the former IFOAs. Instead, the Coastal IFOA operates as a standalone regulatory instrument under the Forestry Act.

The EPA is now the responsible authority for regulating compliance with the conditions of the IFOA, and NSW Fisheries retains the ability to also enforce non-compliances that potentially impact on threatened fish habitat and ecosystems under the Fisheries Management Act.

As such, DPI Fisheries has not undertaken routine compliance audits or investigations of the IFOA since that time. There have been no formal referrals under the IFOAs for review of fish passage requirements. All other referrals are the subject of provisions under the Fisheries Management Act and therefore not subject to reporting requirements under the IFOA.

Appendix A: Principles of ESFM

Section 69L (2) of the NSW Forestry Act 2012	RFAs (Variations) Nov 2018
Principles of ecologically sustainable forest management means the following –	ESFM principle
a. maintaining forest values for future and present generations including:	1
i. forest biological diversity	A
ii. the productive capacity and sustainability of forest ecosystems	B
iii. the health and vitality of native forest ecosystems	C
iv. soil and water quality	D
v. the contribution of native forests to global geochemical cycles	E
vi. the long term social and economic benefits of native forests	F
vii. natural (and cultural) heritage values	G[1]
b. ensuring public participation, provision of information, accountability and transparency in carrying out forestry operations	2
c. providing incentives for voluntary compliance, capacity building and adoption of best practice standards	3
d. applying best-available knowledge and adaptive management processes to deliver best practice forest management	5
e. applying the precautionary principle (refer *Protection of the Environment Administration Act 1991*, section 6(2)(a) in preventing environmental harm)	4

[1]The Forestry Act has 'Natural heritage values'; the RFAs 'Natural and Cultural heritage values'.

Appendix B: Summary of IFOAs and FAs in NSW

Current IFOAs and Forest Agreements – all regions at June 2021

NSW FA/IFOA	Commenced	In place until
Coastal regions		
Coastal IFOA	15 November 2018	November 2038
Southern Region Forest Agreement	3 May 2002	3 May 2022
Western regions[1]		
Brigalow and Nandewar Community Conservation Area Agreement (CCA Agreement)	11 June 2009	10 June 2016
Brigalow–Nandewar IFOA	23 October 2010	31 December 2025
Riverina Red Gum IFOA	1 January 2011	31 December 2030
South Western Cypress IFOA	1 July 2011	31 December 2025

[1] Awaiting review

Previous FAs and IFOAs for coastal regions (replaced by Coastal IFOA in Nov. 2018)

NSW FA/IFOA	Commenced	In place until
Eden Region Forest Agreement	5 March 1999	4 March 2019
LNE Region Forest Agreement	5 March 1999	4 March 2019
UNE Region Forest Agreement	5 March 1999	4 March 2019
IFOA for the Eden region	1 January 2000	31 December 2018
IFOA for the LNE region	1 January 2000	31 December 2018
IFOA for the UNE region	1 January 2000	31 December 2018
IFOA for the Southern region	13 May 2002	31 December 2020

Current Regional Forest Agreements (RFA) between the Australian Government and the NSW Government

RFA	Commenced	Variation	In place until
Eden RFA	26 August 1999	28 November 2018	2039
North East RFA	31 March 2000	28 November 2018	2039
Southern RFA	24 April 2001	28 November 2018	2039

Shortened forms

AHIMS	Aboriginal Heritage Information Management System
BIP	Biodiversity Indicator Program
CAR	comprehensive, adequate and representative
cl.	Clause from an Act or other legislation
DPI	Department of Primary Industries (NSW)
DPIE	Department of Planning, Industry and Environment (NSW)
DRNSW	Department of Regional NSW
EES	Environment, Energy and Science
EPA	Environment Protection Authority
ESFM	ecologically sustainable forest management
FA	NSW Forest Agreement
FCNSW	Forestry Corporation of NSW
FMIP	NSW Forest Monitoring and Improvement Program
FMZ	Forest Management Zone
Forestry Corporation	Forestry Corporation of NSW
ha	hectares
HIAG	Hardwood Industries Advisory Group
IFOA	integrated forestry operations approval granted under the *Forestry Act 2012*
ILUA	Indigenous Land Use Agreement
LNE	Lower North East region
LLS	Local Land Services
m	metres
m^3	cubic metres
Mt	megatonnes
NPWS	National Parks and Wildlife Service
NRC	NSW Natural Resources Commission
PNF	private native forestry
RFA	Regional Forest Agreement
RFA MER Plan	NSW RFA Monitoring, Evaluation and Reporting Plan
SIAG	Softwood Industry Advisory Group
SEED	Sharing and Enabling Environmental Data (NSW Government portal)
SOFR 2018	State of the Forests Report 2018
t	tonnes
UNE	Upper North East region

References

ABARES 2018, *Australia's State of the Forests Report 2018*, Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee for Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018

ABARES 2019, *Australia's forests at a glance 2019*, Agricultural and Resource Economics and Sciences, Canberra, www.agriculture.gov.au/abares/forestsaustralia/australias-forests-at-a-glance

ABARES 2020, *Australia's forests and forestry glossary*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, CC BY 4.0, www.agriculture.gov.au/abares/forestsaustralia/glossary

ABS 2021, *Labour Force, Australia, Detailed, June 2021*, Australian Bureau of Statistics, Canberra, www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia-detailed/jun-2021

CCC 2009, *Brigalow and Nandewar Community Conservation Area Agreement*, Community Conservation Council, www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/brigalow-nandewar-ifoa

Commonwealth of Australia 1997, *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia, Commonwealth of Australia*, www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/rfa/publications/nat_nac.pdf

DISER 2020, *Estimating greenhouse gas emissions from bushfires in Australia's temperate forests: focus on 2019–20*, Australian Government Department of Industry, Science, Energy and Resources, Canberra, www.industry.gov.au/data-and-publications/estimating-greenhouse-gas-emissions-from-bushfires-in-australias-temperate-forests-focus-on-2019-20

DPC 2020, *Final Report of the NSW Bushfire Inquiry*, Department of Premier and Cabinet, Sydney, www.dpc.nsw.gov.au/assets/dpc-nsw-gov-au/publications/NSW-Bushfire-Inquiry-1630/Final-Report-of-the-NSW-Bushfire-Inquiry.pdf

DPE 2022a, *Woody vegetation change, Statewide Landcover and Tree Study: Summary report 2020*, Department of Planning and Environment, Sydney, www.environment.nsw.gov.au/research-and-publications/publications-search/woody-vegetation-change-statewide-landcover-tree-study-summary-report-2020

DPE 2022b, *Fire extent and severity mapping: Report for 2020–21 and 2016–17 fire years*, Department of Planning and Environment, Sydney, www.environment.nsw.gov.au/research-and-publications/publications-search/fire-extent-and-severity-mapping-annual-report-2020-21

DPI 2018, *Sustainable Yield in New South Wales Regional Forest Agreement Regions*, NSW Department of Primary Industries, November 2018, www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/842098/sustainable-yield-in-NSW-RFA-regions.pdf

DPI 2021a, *Overview of the New South Wales Forest Management Framework V1.1*, NSW Government, March 2021, www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/833792/Overview-of-the-NSW-Forest-Management-Framework.pdf

DPI 2021b, *NSW Primary Industries Performance, Data & Insights 2021*, NSW Department of Primary Industries, September 2021, www.dpi.nsw.gov.au/about-us/publications/pdi/2021/forestry

DPIE 2020a, *NSW Biodiversity Outlook Report: Results from the Biodiversity Indicator Program; first assessment*, NSW Department of Planning, Industry and Environment, www.environment.nsw.gov.au/research-and-publications/publications-search/biodiversity-outlook-report

DPIE 2020b, *DPIE Wildlife and Conservation Bushfire Recovery: Immediate Response,* NSW Department of Planning, Industry and Environment, www.environment.nsw.gov.au/research-and-publications/publications-search/wildlife-and-conservation-bushfire-recovery-immediate-response

DPIE 2021a, *Annual Report 2020–21*, NSW Department of Planning, Industry and Environment, www.opengov.nsw.gov.au/publications/19816

DPIE 2021b, *Soil health and stability monitoring in forests: Background and review of potential indicators*, NSW Department of Planning, Industry and Environment, February 2021, www.nrc.nsw.gov.au/fmip-baselines-soil-and-water-projectsw2

EPA 2010a, *Integrated Forestry Operations Approval (IFOA) for the Brigalow and Nandewar Region*, NSW Environment Protection Authority, Sydney, www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/brigalow-nandewar-ifoa

EPA 2010b, *Integrated Forestry Operations Approval (IFOA) for the Riverina Red Gum Region*, NSW Environment Protection Authority, Sydney, www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/riverina-red-gum-ifoa

EPA 2011, *Integrated Forestry Operations Approval (IFOA) for the South Western Cypress Region*, NSW Environment Protection Authority, Sydney, www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals/south-western-cypress-ifoa

EPA 2017, *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement regions 2016*, NSW Environment Protection Authority, Sydney, www.epa.nsw.gov.au/resources/forestagreements/revised-ecologically-sustainable-forestry-management-criteria-indicators-160178.pdf

EPA 2019, *NSW Forestry Snapshot Report 2017–18,* NSW Environment Protection Authority, Sydney, www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/forestagreements/19p2057-nsw-forestry-snapshot-report-2017-18.pdf

EPA 2020, *NSW Forestry Snapshot Report 2018–19,* NSW Environment Protection Authority, Sydney, www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/forestagreements/2020p2290-forestry-snapshot-2018-19.pdf

EPA 2021, *NSW State of the Environment 2021* (Native Fauna topic), NSW Environment Protection Authority, www.soe.epa.nsw.gov.au/all-themes/biodiversity/native-fauna

FCNSW 2020b, *2019–20 Wildfires: NSW Coastal Hardwood Forests Sustainable Yield Review*, Forestry Corporation of NSW, West Pennant Hills NSW, December 2020 www.forestrycorporation.com.au/about/pubs

FCNSW 2021a, *Forestry Corporation Annual Report 2020–21*, Forestry Corporation of NSW, West Pennant Hills NSW, www.forestrycorporation.com.au/about/pubs/corporate/annual-report

FCNSW 2021b, *Sustainability Report 2020–21*, Forestry Corporation of NSW, West Pennant Hills NSW, www.forestrycorporation.com.au/about/pubs/corporate/sustainability-reports

Jacobsen R et al 2020, *Australia's Indigenous land and forest estate: separate reporting of Indigenous ownership, management and other special rights*, ABARES technical report, Canberra, December 2020, www.agriculture.gov.au/abares/forestsaustralia/publications/indigenous-estate-report

NRC 2020a, *Research program plan: Koala response to harvesting in North Coast State forests*, Natural Resources Commission, Sydney, NSW, September 2020, www.nrc.nsw.gov.au/koala-research

NRC 2020b, *Coastal IFOA Monitoring plan: Baselines and trends in wood supply*, Natural Resources Commission, Sydney, NSW, October 2020, www.nrc.nsw.gov.au/publications-current

OEH 2019, *Measuring biodiversity and ecological integrity in NSW: Method for the Biodiversity Indicator Program*, Office of Environment and Heritage NSW, Sydney, www.environment.nsw.gov.au/research-and-publications/publications-search/measuring-biodiversity-and-ecological-integrity-in-nsw-method