



Environment Protection Authority

NSW Forestry Snapshot Report 2019-2020

Implementation of NSW Forest Agreements
and Integrated Forestry Operations Approvals



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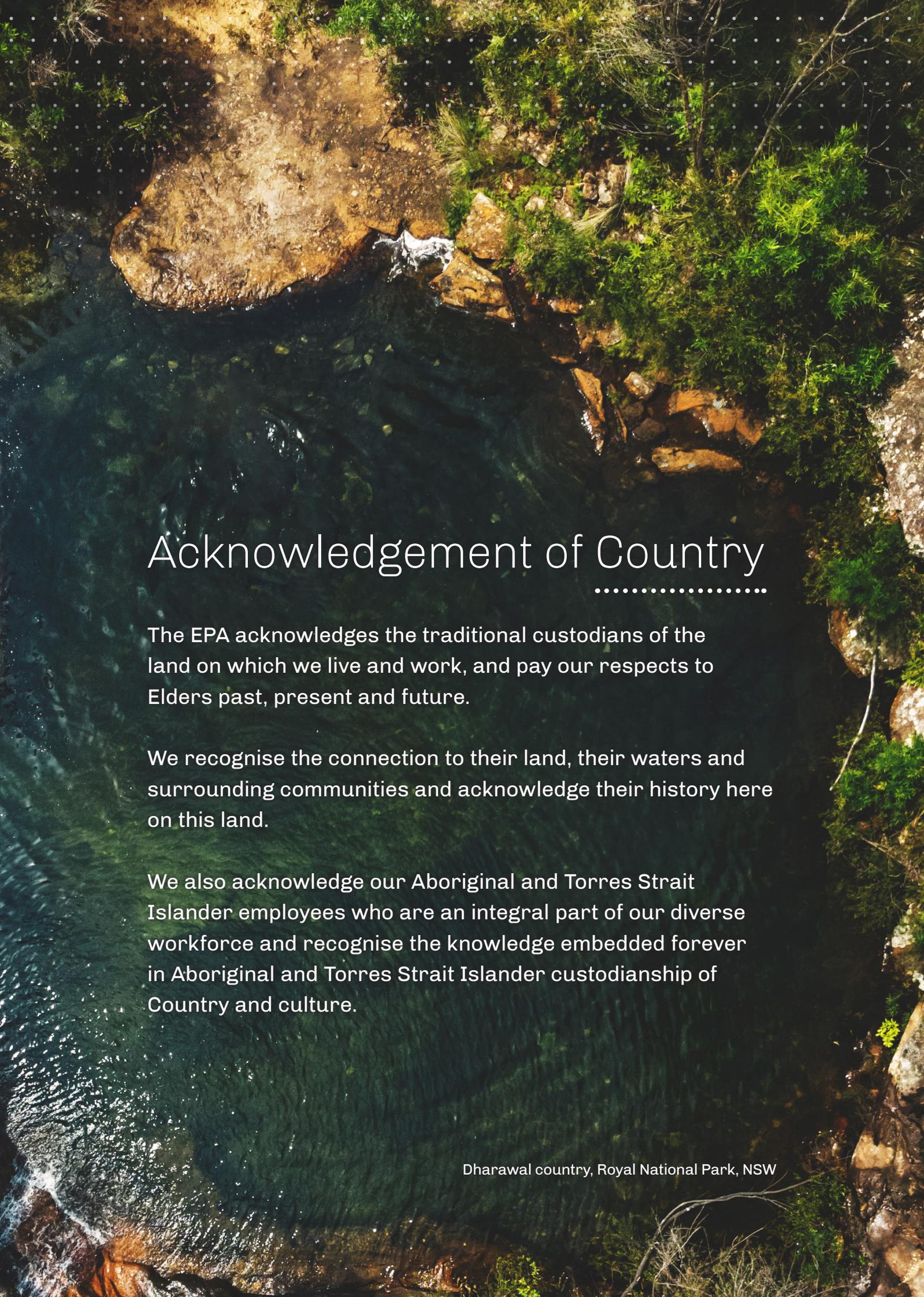
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An aerial photograph of a stream flowing through a dense, green forest. The water is dark and clear, reflecting the surrounding foliage. The stream is bordered by large, brownish rocks and is surrounded by thick vegetation, including mosses and ferns. The overall scene is serene and natural.

Acknowledgement of Country

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The EPA acknowledges the traditional custodians of the land on which we live and work, and pay our respects to Elders past, present and future.

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.

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Overview

This is the 21st annual report on NSW Forest Agreements (FAs) and integrated forestry operations approvals (IFOAs). It provides a snapshot for 2019–20 of performance against the principles of ecologically sustainable forest management (ESFM) in NSW forest regions and compliance with IFOAs.

Three of the four FAs lapsed in 2019 and were replaced by a single Coastal IFOA. Where relevant, NSW FA regions may still be reported against in this snapshot.

By July 2019 most milestones and undertakings set for coastal and western regions had already been completed in the agreements and IFOAs. The relatively small number remaining were rolled into other regulatory mechanisms. These are recorded in detail in the *Forestry Snapshot Report 2018–19*, and previous snapshot reports.

Measures of ESFM need to be carefully monitored as part of native forest management processes and reporting. They include rates of sustainable harvesting, regeneration, protection of biodiversity and climate change resilience. This report includes an update on timber harvesting quantities for 2019–20, which have complied with permissible volumes and quantities approved under the IFOAs.

Forestry Corporation regeneration surveys found 72% 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.

This report also summarises regulation of forestry activities and results reported by the NSW Environment Protection Authority (EPA) and Forestry Corporation. The EPA's regulatory work continued to focus on high-risk operations. This focus included 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 47 operations in state forests, which resulted in Forestry Corporation being issued:

- warning letters for one operation
- official cautions for two operations
- a clean-up notice for six operations
- advisory letters for three operations
- penalty notices for two operations.

The NSW Forestry Industry Roadmap (the Roadmap) is the NSW Government's plan for sustainable forest management into the future. Many of the reform actions of the Roadmap progressed during 2019–20 and a number are now complete. These are summarised in this report.

Hundreds of Aboriginal people across the state participated in cultural activities, training and joint management of national parks and state forests. This included Indigenous communities having an increased input into the restoration and protection of koala habitat across a variety of tenures.

Biodiversity conservation highlights this year included:

- the addition of 65,167 hectares (ha) of land to the national parks system in NSW. Of this, 4,254 ha fell within the Coastal FA/IFOA regions
- progress on research and monitoring initiatives under the NSW Koala Strategy, including:
 - development of the NSW Koala Monitoring Framework
 - release of the first annual report of koala research being overseen by the NSW Natural Resources Commission (NRC).

The NSW Government initiated a statewide, cross-tenure NSW Forest Monitoring and Improvement Program (FMIP) to monitor and evaluate ESFM. The program is independently overseen by the NRC. In 2019–20 as part of its suite of programs, the NRC continued an independent research program under the NSW Koala Strategy, and also liaised with NSW Government agencies to research and monitor the impact of the recent bushfires on NSW forests.

Despite some positive conservation and forest management outcomes reported above, the period covered by this report was also beset by a series of profound environmental, economic and social challenges. It was marked by periods of drought, extreme weather, widespread devastating bushfires, and floods. Comments on the impacts and 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.



Introduction

This is the 21st annual report on the implementation of the NSW Forest Agreements (FAs) and integrated forestry operations approvals (IFOAs). It is prepared under section 69H of the *Forestry Act 2012* (Forestry Act) and reports on:

- compliance with ecologically sustainable forest management (ESFM) conditions in the coastal forestry regions (Coastal IFOA)
- timber harvesting and compliance with IFOAs in 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 provide a strategic and operational framework to manage public forests in NSW, with the overall objective of achieving forest conservation and ESFM.

In 2019 some agency responsibilities for forest management were changed, and these are reflected in this report. In particular, the Department of Regional NSW was created and now incorporates the Department of Primary Industries and Local Land Services. The Environment, Energy and Science Group (EES) within the Department of Planning, Industry and Environment (DPIE) assumed most of the functions of the former NSW Office of Environment and Heritage (OEH), while the heritage function was transferred to NSW Heritage within the Department of Premier and Cabinet.

With these changes in place, implementation of FAs and IFOAs is a cooperative undertaking between NSW Government agencies and a state-owned corporation, as listed below.

- Department of Planning, Industry and Environment (DPIE), including:
 - the NSW Environment Protection Authority (EPA) – maintained as an independent authority
 - the National Parks and Wildlife Service (NPWS)
 - Environment, Energy and Science Group (EES)
- Department of Regional NSW (DRNSW)
 - Department of Primary Industries (DPI), including Forestry, Fisheries and Biosecurity NSW
 - Local Land Services (LLS)
- Forestry Corporation of NSW (referred to in this report as Forestry Corporation or FCNSW) – maintained as a state-owned corporation.

This forestry snapshot report covers the period 1 July 2019 to 30 June 2020.

Guide to sections in this report

Section 1 provides a summary of results of monitoring important ESFM criteria and indicators for native forests of all tenures in NSW coastal regions as well as 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 Regional Forest Agreements (RFAs) (as amended November 2018). See Appendix A for the list of ESFM principles.

Section 2 outlines compliance with licence conditions and other IFOA requirements for all regions.

Links to other reporting

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

- 2019–20 annual reports of relevant NSW agencies
- the Forestry Corporation *Sustainability Report 2019–20* (FCNSW 2020b)
- special reports of relevant NSW agencies on the 2019–20 bushfires.

This snapshot also refers to other key reports for context, including *Australia's State of the Forests Report 2018* (ABARES 2018) referred to in this report as SOFR 2018.

What regions are reported

The delivery of ESFM and forestry compliance in coastal and western forestry regions is reported in this snapshot, as required under section 69H of the Forestry Act.

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) will expire in May 2022 and will also not be renewed. These regions previously had separate IFOAs in place, but from November 2018 they were replaced by one combined approval, the Coastal IFOA, to be phased in over two years.

When the FAs for the UNE, LNE and Eden regions lapsed, any outstanding issues, including milestones and undertakings, contained in these instruments 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.

Due to these changes and the overlap in transitioning to the new IFOA some parts of this report may refer to the regions in the lapsed FAs, while other sections report against the new Coastal IFOA.

There are IFOAs in place for three western NSW inland forestry regions: Brigalow–Nandewar, South Western Cypress and Riverina Red Gum (Western IFOAs). The three western forestry regions have IFOAs in place but 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 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 [EPA website](https://www.epa.nsw.gov.au/your-environment/native-forestry)¹.

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* (NSW Government 2018) provides an explanation of the interaction between RFAs, FAs and IFOAs.

NSW Forestry Industry Roadmap

The [NSW Forestry Industry Roadmap](https://www.dpi.nsw.gov.au/data/assets/pdf_file/0005/711851/nsw-forestry-industry-roadmap.pdf)² (the Roadmap) is the NSW Government's strategic action plan to build a stronger, more competitive and ecologically sustainable forestry industry.

The whole-of-government strategy is supported by 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.

The NSW Government has committed to implement clear actions under each of these pillars. More information on the Roadmap is available on the [NSW DPI website](https://www.dpi.nsw.gov.au/forestry/industry-roadmap)³. Implementation actions during 2019–20 were impacted by major bushfire events. An update on actions during this reporting period is summarised below.

¹ www.epa.nsw.gov.au/your-environment/native-forestry

² https://www.dpi.nsw.gov.au/data/assets/pdf_file/0005/711851/nsw-forestry-industry-roadmap.pdf

³ www.dpi.nsw.gov.au/forestry/industry-roadmap

Roadmap implementation 2019–20

Pillar 1 – Regulatory modernisation and environmental sustainability

Commitments in the Roadmap in regard to regulatory modernisation include:

- 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 – underway
- reviewing the Western IFOAs, with public consultation – to commence in next reporting period.

Review and extension of RFAs

Three NSW RFAs⁴ between the Australian and NSW governments for the Eden, North East and Southern sub-regions were reviewed and varied in November 2018. The renewed agreements are implemented through the NSW Forest Management Framework as described in the Overview of the New South Wales Forest Management Framework (NSW Government 2018).

The RFAs establish a long-term framework for the management and use of NSW major forested regions to implement effective forest conservation, ESFM and forest industry practices. The RFAs are in place until at least 2039 and include a five-year rolling review and extension mechanism.

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 first annual meeting was held on 31 October 2019, with a broad range of matters discussed. The next annual meeting is to be held before the end of November 2020. Details can be found on the Australian Government Department of Agriculture, Water and the Environment website⁵.

Review of regulatory arrangements

As reported in the previous period, the *Forestry Legislation Amendment Act 2018*⁶ 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. With these changes, this Roadmap action is now substantially complete.

The Act gave effect to the Coastal IFOA which can apply or adopt protocols, codes, standards or other instruments that are publicly available and in force from time to time. These protocols can be prepared by the Environment Protection Authority (Forestry Act section 69P).

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

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. During the 2019–20 reporting period LLS led the PNF Review in collaboration with DPI and the EPA.

PNF Codes apply to the areas of Northern NSW, Southern NSW, Cypress and Western hardwood forests and River Red Gum forests. Draft PNF Codes of Practice were released on public exhibition on 24 March 2020 with submissions closing on 19 May 2020. The next steps in the PNF Review are the

⁴ www.epa.nsw.gov.au/your-environment/native-forestry/about-public-native-forestry/regional-forest-agreements-assessments

⁵ www.agriculture.gov.au/forestry/policies/rfa/regions/nsw

⁶ www.epa.nsw.gov.au/your-environment/native-forestry/forestry-regulatory-reforms

review of submissions on the draft PNF Codes of Practice and the development of streamlined PNF Codes of Practice that are clear, easier to use and support long-term ESFM.

Information about the progress of the PNF Review is on the Local Land Services website⁷.

Coastal IFOA

IFOAs set the rules for how forestry operations must be carried out on state forests and other Crown-timber lands. A single Coastal IFOA replaced the four former coastal IFOAs in November 2018. The Coastal IFOA sets more contemporary protections for threatened species, habitat, soils and water quality during forestry operations.

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 the Minister responsible for Forestry; the protocols can be amended by the EPA to allow the IFOA to be more adaptively managed.

Between March 2019 and April 2020 three protocols were amended by the EPA including:

- Protocol 8 – to improve in the administrative processes for making local landscape areas
- Protocol 23 – to correct a drafting error relating to koala browse tree prescriptions
- Protocol 40 – to permit Forestry Corporation of NSW to continue operating under former IFOAs in approved areas in response to extensive fires in northern NSW; to clarify the meaning of koala intermediate use areas during the transition period; and to update the list of forestry operations that can continue to operate under the former IFOAs.

More information about the Coastal IFOA is available on the EPA website⁸.

During the reporting period, more than 890,000 ha of State forests were burnt by bushfires including over 830,000 ha of native State forests and approximately 60,000 ha of plantations. This represents over 40% of the coastal and tablelands state forests. Given the extent and severity of the bushfires, the EPA and Forestry Corporation worked with experts and other government organisations to understand the impacts of the fires on the environment, wildlife, local communities and the forestry industry. As a result, forestry operations in forests impacted by fires proceeded under special provisions of the Coastal IFOA, called site-specific operating conditions.

These enabled the EPA to issue Forestry Corporation supplementary conditions to the Coastal IFOA on a case by case basis. The supplementary conditions were designed to address the specific environmental impacts caused by the bushfires and maximised the protection of unburnt and lightly burnt forest to assist with wildlife and environmental recovery efforts. The EPA issued site-specific operating conditions for 66 forestry operations in the Coastal IFOA region. Details of the Coastal IFOA conditions that applied to fire-affected forests are on the EPA website⁹.

The Coastal IFOA is being supported by a comprehensive monitoring program overseen by the NRC. This program is to ensure the Coastal IFOA is delivering on its stated objectives and outcomes, and to inform its continual improvement.

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. The review was to commence in 2019–20. While a standard amendment was made to the Riverina Red Gum IFOA in late June 2019 to allow an extension of thinning operations for management and supply purposes, the full review of the Western IFOAs has been deferred due to the focus on the bushfire response and recovery. It is planned to commence during 2021–22.

⁷ www.lls.nsw.gov.au/help-and-advice/private-native-forestry/private-native-forestry-review

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

⁹ www.epa.nsw.gov.au/your-environment/native-forestry/bushfire-affected-forestry-operations

More information on the Coastal and Western IFOAs is available on the EPA website.¹⁰

Pillar 2 – Balancing supply and demand

The three NSW RFAs, renewed in November 2018, aim to strike a long-term sustainable balance between economic, social and environmental demands on our forest resources. These agreements, supported by the IFOAs, assist with forward planning and enhance Forestry Corporation's ability to set and implement long-term timber supply contracts, providing greater supply security for industry. The renewed RFAs commit to a sustainable wood supply as estimated 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.

Wood Supply Agreements (WSAs) are long-term contracts for the supply of timber from NSW state forests. The NSW Government is committed to addressing timber supply and demand issues, as it understands that certainty of wood supply is critical to ongoing business confidence.

See the *Land available for timber production* section of this report for more information on the impact of the major bushfires on supply of timber during the reporting period.

Pillar 3 – Improving community understanding and confidence

NSW Forest Industries Taskforce

The NSW Government split the former Forest Industries Taskforce into new softwood and hardwood industries advisory groups that continue to provide guidance on the Roadmap implementation and other industry issues. The Softwood Industry Advisory Group (SIAG) first met on 28 January 2020, and the Hardwood Industries Advisory Group (HIAG) on 18 February 2020.

These advisory groups 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 provide timely and comprehensive advice to the NSW Government.

During 2019–20 the NSW Government met with SIAG and HIAG to discuss issues relating to the bushfires, their impact on the forestry industry and mechanisms to put in place to assist with sector recovery.

Monitoring, research and reporting

In 2019 the FMIP was established by the NSW Government to improve the evidence base for decision-making and reporting to support the ecologically sustainable management of NSW forests. Funding to the program of \$7 million over four years has been allocated by the NSW Government.

The program is overseen by the NRC, which chairs the NSW Forest Monitoring Steering Committee comprising relevant NSW Government agencies. The NRC works collaboratively with and draws expertise and experience from DPI, DPIE, universities, private sector scientists, communities and industry in delivery of the program.

Under the FMIP during 2019–20 a range of programs and activities aimed at monitoring, evaluation and reporting of NSW forests progressed including a Coastal IFOA Monitoring Program and the NSW RFA Monitoring, Evaluation and Reporting Plan (the RFA MER Plan). A number of regional stakeholder forums were held by the NRC. These included local community groups and Aboriginal organisations. Other initiatives under the FMIP involved local communities in data collection and monitoring activities.

Details of these programs and activities, including reports and publications related to various aspects of ESFM, can be found on the [NRC website](https://www.nrc.nsw.gov.au).¹¹

¹⁰ www.epa.nsw.gov.au/your-environment/native-forestry/integrated-forestry-operations-approvals

¹¹ www.nrc.nsw.gov.au/fmip

DPIE, 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 implemented by the NSW Government aims to support industry innovation and the development of markets for renewable forestry products, through long-term low interest loans.

Under the \$34 million scheme 11 project proposals have been received, with six approved to date, totalling \$9.7 million.

An example of a project that has been publicly announced as receiving funding in 2019–20 is the \$3 million Pentarch Logistics Pty Ltd project, approved December 2019, for the design, installation and commissioning of a briquette plant in Eden, NSW. The plant will compress and package high-value wood fibre products from forestry processing residues and waste. In addition to better utilisation of waste the project aims to deliver new employment and economic opportunity to the local community.

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. The NSW FAs, and RFAs, include ESFM principles, criteria and performance indicators that reflect these key values.

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* (NSW Government 2018).

This report provides a snapshot of progress in achieving ESFM in forest regions, 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).

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

In 2019–20 widespread bushfires across NSW impacted forestry areas covered by this report including areas of important natural values, animal habitat, water catchments and timber supply. These events required a special response from agencies, organisations, researchers, and communities involved in the ecologically sustainable management of NSW forests.

Maintaining forest values for future and present generations

This principle embodies the principle 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 removal of timber and other forest products while maintaining (or improving) the full range of values of the existing forest estate.

Forest biological diversity

Protecting forest habitat

Reserving a proportion of forested land in protected areas helps ensure the conservation of biodiversity. According to SOFR 2018, there are 19.9 million hectares of native forest in NSW, of which 6.4 million is protected in a range of formal and informal categories (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).

In 2019–20, 65,167 ha of land were added to the national parks system in NSW bringing the national parks estate to 7.22 million hectares, or 9% of NSW. Of this, 4,254 ha fell within the Coastal FA/IFOA regions. There were other lands added to the reserve system outside this area, which are reported in the DPIE Annual Report (DPIE 2020d). These areas have not been analysed by forest type.

Australia's comprehensive, adequate and representative (CAR) reserves system aims to safeguard vulnerable species and communities and provide links between reserves and other protected areas. The NSW national parks estate is part of the national reserve system guided by the CAR reserves principles (Commonwealth of Australia 1997). Information about the CAR reserves system and the most recent data for forest in different types of CAR reserve is available in SOFR 2018 (ABARES 2018).

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. This includes rates of vegetation change for different land-use activities and information about conservation and management actions. This information is provided in native vegetation data reports (DPIE 2020a).

SOFR 2018 (ABARES 2018) provides the most recent information on forest fragmentation at national and jurisdictional scales.

Protecting forest-dwelling species

Forest-dwelling species are animals and birds that 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 monitoring programs in NSW forests, both independently and in collaboration.

SOFR 2018 summarises national, state and territory reporting on forest-dwelling species for which ecological information is available from 1998 to 2016. As of 2016, there were 896 forest-dwelling species in NSW, of which 434 were dependent on forest habitat (ABARES 2018).

The NSW Government maintains a comprehensive threatened biodiversity profile search facility.¹² The public can both view this and contribute sighting records and profiles of species, populations and communities, including those that are forest-dwelling. The database is used by NPWS, Forestry Corporation and the LLS.

The NSW Koala Strategy

The NSW Koala Strategy is part of the NSW Government's long-term vision to stabilise and then increase koala numbers in NSW, ensuring genetically diverse and viable populations across the state.

The strategy supports a range of conservation actions delivered over three years (2018–2021) under four pillars: koala habitat conservation; conservation through community action; safety and health of koala populations; and building our knowledge.

DPIE's EES Group coordinates the implementation of this whole-of-government strategy through an inter-agency committee of senior officers from NSW Government agencies, including the EPA and DPI Forestry.

The committee met four times during 2019–20 to review progress against the four pillars, and to discuss the impacts of the 2019–20 fire season and actions being taken by agencies to support koala recovery. The bushfires were estimated to have affected more than a quarter of the koala habitat in NSW, including state forest areas under the Coastal IFOA.

¹² www.environment.nsw.gov.au/threatenedspeciesapp

Major achievements during the second year of implementation of the strategy include:

- purchase of four properties by NPWS to protect more than 1,000 ha of land containing priority koala habitat
- 62 actions in partnership with local communities across NSW to address local threats to koala populations
- support for a series of Aboriginal ranger workshops, led by Local Area Land Councils and Indigenous Protected Areas, focused on managing Country for koalas and a broader range of biodiversity considerations
- development of the NSW Koala Monitoring Framework under the NSW Koala Strategy, including building partnerships at different monitoring sites in a range of tenures across the State
- release of the [Koala Habitat Information Base](#)¹³ to improve knowledge of where koalas live, their numbers and preferred habitat, as well as to understand the bushfire impact and determine response and recovery actions
- release of the first annual report of koala research being overseen by the NRC under the NSW Koala Strategy (see below).

Detailed information is available in the *NSW Koala Strategy 2019–20 Annual Report* (DPIE 2020c) and on the [NSW Koala Strategy](#)¹⁴ website.

Natural Resources Commission

In the 2019–20 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 Commission is overseeing monitoring programs for the Coastal IFOA and RFAs.

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 regeneration harvesting associated coastal IFOA prescriptions and mapped exclusion areas. The first annual progress report, outlining preliminary analysis, was published in February 2020 (NRC 2020).

The 2019–20 bushfires affected areas of NSW North Coast state forests where the NRC and its research partners were undertaking this research. In response to the fires, Forestry Corporation moved the majority of its north coast operations to timber plantations and, where native forest operations took place, only used selective harvesting techniques. The NRC is determining whether the research needs to be adjusted in response to changes to planned harvesting operations.

During the reporting period the NRC worked to develop monitoring programs to assess the fire impact. In line with adaptive management principles, data from these monitoring programs will be used to continually assess the effectiveness of conditions and inform future management.

Further information and research updates are available on the [NRC website](#).¹⁵

DPI research and monitoring

The DPI Forest Science team 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.

¹³ www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy/building-knowledge-on-koala-habitat

¹⁴ www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/programs-legislation-and-framework/nsw-koala-strategy

¹⁵ www.nrc.nsw.gov.au

In 2019–20, 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 undertaking surveys on long-term study sites after the 2019–20 fires.

The koala research activities reported in the *2018–19 Forestry Snapshot* (EPA 2020), including acoustic monitoring and GPS tracking projects, continued in the current reporting period. DPI also received funding from the NSW Koala Strategy to assess koala occupancy in private native forests. New research into koala density before and after harvesting, in north-east NSW state forests, began in spring 2019 with harvesting taking place in 2020. Post-fire assessments have been undertaken of one study area (Kiwarrak State Forest).

Details of DPI's forest research and monitoring activities are available on the [DPI website](#).¹⁶

Forestry Corporation research and monitoring

Forestry Corporation is committed to improving the scientific basis for forest management and understanding of forest ecosystems and sustainable management.

DPI Forest Science team provides scientific and technical expertise within the core activities of forest ecology and sustainability; forest health and resource assessment; carbon in forests; wood products; and bioenergy and biometrical services. Information about recent research activities is included in the statutory information in the Forestry Corporation *Annual Report 2019–20* (FCNSW 2020a).

Forestry Corporation also has long-standing monitoring programs for water quality and flora and fauna biodiversity. Details can be found in the Forestry Corporation *Sustainability Report 2019–20* (FCNSW 2020b).

WildCount

WildCount is a 10-year program that uses motion-sensitive cameras to monitor animals across the national parks estate 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 incursions. It is the broadest fauna monitoring study of its kind in Australia and one of the biggest in the world.

Many of the monitored parks are in FA regions although WildCount does not monitor animals on state forests. Of 200 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 2020 field season, the program's ninth year, 98 different species and groups were identified in IFOA areas. This included four new¹⁷ records of three threatened species: koala (*Phascolarctos cinereus*), red-legged pademelon (*Thylogale stigmatica*) and speckled warbler (*Chthonicola sagittate*).

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; the information that WildCount captured in 2020 (and beyond) will be highly relevant for learning about the impacts of bushfires on our native animals and how wildlife recovers. Records of WildCount sightings are contributed to the [NSW BioNet](#)¹⁸ database. A report on analysis of WildCount data from 2012–16 is in preparation (released August 2020). More information on the program is available on the [WildCount webpage](#).¹⁹

¹⁶ www.dpi.nsw.gov.au/forestry/science

¹⁷ A record is defined as new if there are no previous records within a 5-km buffer.

¹⁸ www.bionet.nsw.gov.au

¹⁹ 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 established to assess the status of biodiversity and ecological integrity in NSW, as required by the Biodiversity Conservation Act.

The program reports the status and trends in biodiversity and ecological integrity in NSW. DPIE collaborated with subject matter experts from CSIRO, the Australian Museum and Macquarie University 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 Montreal Process²⁰ 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 2020b). It reported 10 indicators as close as possible to the commencement of the Biodiversity Conservation Act in August 2017. The key findings from the first assessment were:

- on average, 33% of pre-industrial habitat effectiveness remains across NSW
- this remaining habitat still supports 80% of the original diversity and 79–91% of within-species plant genetic diversity
- the national parks estate retain much more habitat effectiveness than other tenures
- spatially, bioregions with less area of good quality habitat are at greatest risk of further biodiversity loss.

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.²¹ Assessments will continue at recommended intervals and the program will contribute to the five-year review of the Biodiversity Conservation Act.

An assessment of the effects of the 2019–20 bushfires on a range of biodiversity and landscape values was undertaken by DPIE in early 2020. It resulted in the recalculation of three indicators developed for the Biodiversity Outlook Report – ecological condition, ecological carrying capacity and persistence of ecosystems. The changes to these indicators will be included in future Biodiversity Outlook Reports. The next such report is planned for 2022.

Further information about the BIP, and the suite of reports, is available on the DPIE website.²²

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.

Land available in state forests

Forestry Corporation manages state-owned native forests and timber plantations across NSW. In 2019–20 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.

A land classification system called Forest Management Zoning (FMZ) is used by Forestry Corporation 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.

²⁰ www.agriculture.gov.au/forestry/international/forums/montreal

²¹ www.seed.nsw.gov.au

²² www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-indicator-program

The online Forestry Corporation [Sustainability Report 2019–20](#)²³ (FCNSW 2020b) provides interactive charts detailing areas of forest (by zone) and timber reserves under their management across all state forests.

The report shows that in 2019–20:

- total area managed by Forestry Corporation was 2,152,432 ha, including hardwood plantation area of 33,898 ha and softwood plantation area of around 230,000 ha. A total of 2,021,156 ha is managed under the IFOAs
- total area of state forest in the Coastal IFOA region was 1,561,084 ha; and 460,073 ha in the Western IFOA regions
- timber reserves on Crown land within the Coastal IFOA totalled 1,253 ha; and 108,941 ha within the Western IFOA regions with the largest being south-western cypress (100,967 ha). These areas are not included in the total figures of forest managed by Forestry Corporation above, as Forestry Corporation has timber rights for timber reserves on Crown land but otherwise does not have management responsibilities for these areas.

The 2019–20 bushfires impacted 831,439 ha of native forest, 5,252 ha of hardwood plantations and approximately 52,000 ha of stocked softwood plantations across NSW.

During 2019–20, widespread bushfires impacted many areas available for timber harvesting under the NSW RFAs. Due to the scale and severity of the fires, a review of the impact of the fires on wood supply and long-term sustainable yield is warranted. A comprehensive review incorporating full remeasurement of inventory plots in fire-affected forests is underway. The effects of the fire in relation to sustainable timber modelling include degradation and loss of existing wood products in situ, as well as loss of young regenerating and smaller regrowth trees.

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 (ABARES 2019). 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.

Landscape features of cultural and environmental significance, such as vulnerable and endangered ecological communities, rainforest, old growth forest, wetlands, heathlands and cultural heritage items and sites, must be protected under the relevant PNF Code of Practice for that region. The PNF Codes of Practice also contain provisions for retaining habitat trees (including feed trees, roost, nest and food resource trees) and recruitment trees capable of forming hollows for habitat in future.

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 2019–20, a total of 34,436 ha were approved under 295 new PNF Plans. The following tables show new PNF Plans and related hectares for 2015–16 to 2019–20. Approvals for earlier years can be found in previous Forestry Snapshot Reports.

²³ www.forestrycorporation.com.au/about/pubs/corporate/sustainability-reports

Table 1 Total number of private native forestry plans approved July 2015 – June 2020

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

Table 2 Area (hectares) of private native forestry plans approved July 2015 – June 2020

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

Source: LLS data

Land available in plantations

Plantation forestry involves planting trees for commercial timber production or environmental purposes. Plantations are 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 the year 1997 to the current year, including location, plantation type and area (hectares). Additional information summarising annual data related to plantation regulation activities is also produced by DPI. The register and additional annual results data are accessible on the [plantation forestry](#) section of the DPI website.²⁴

The public register indicates a total of 63 timber plantations were authorised by DPI in this reporting period, totalling 40,607 ha of plantable area and 4,031 ha of retained native vegetation. This includes six new plantations authorised in coastal IFOA areas totalling 320 ha. A total of 698 ha of new plantations were authorised in areas outside the Coastal IFOA regions. The remainder were authorisations of existing plantations.

Figures for timber volumes and other products supplied from these plantations are reported by the [Australian Department of Agriculture, Water and the Environment](#).²⁵

Forestry Corporation of NSW is the largest plantation manager in NSW, managing approximately 260,000 ha of hardwood and softwood plantations. Large areas of timber plantations are also managed on private property.

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. Monitoring helps ensure wood and wood products are removed from forests at levels that meet

²⁴ www.dpi.nsw.gov.au/forestry/forestry-operations/plantation-forestry

²⁵ www.agriculture.gov.au/abares/research-topics/forests/forest-economics

society's need for forest products each year, but do not negatively impact biodiversity or the forest's ability to function and regenerate.

The Coastal and Western IFOAs specify the types, volumes and quantities of native forest timber products that Forestry Corporation is permitted to harvest. The IFOAs permit annual variations to the specified volumes to accommodate changes in environmental and economic circumstances.

Harvested amounts in the Coastal IFOA regions, particularly the upper north coast and the south coast, were severely reduced in response to the widespread bushfires of late 2019 and early 2020. Forestry Corporation reduced operations in fire-affected areas and moved most operations to plantations, where available, while reviewing the impact of the bushfires and the sustainable yield models (FCNSW 2020d).

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). Forestry Corporation is also certified to the Environmental Management Standard ISO 14001:20015. To maintain certification, Forestry Corporation must demonstrate 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 undergoes 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](#).²⁶

Timber harvested in Coastal IFOA areas

Overall, the amount of timber harvested during the reporting period in native and hardwood plantations was significantly down on the previous year due to the significant impact of the 2019–20 bushfires. Not only were the forests directly impacted, resulting in direct damage, but the fires also made access to many areas hazardous. In addition, resources were diverted for a large proportion of the fire season for fire suppression.

The following reports harvested volumes and quantities against the allocations specified in the Coastal IFOA.

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

Detailed data for the volumes and quantities of timber extracted from the coastal regions, including poles, piles and girders, are shown in Table 3.

Volumes of logs harvested decreased in the UNE, Eden and Southern regions, partly due to the impact of widespread and extreme bushfires, and increased slightly from the previous year in the LNE region. Volumes of pulp decreased in the Eden region.

In the UNE region, 37,272 cubic metres (m³) of high-quality large sawlogs, large veneer logs and poles were harvested from native and hardwood plantation forests during 2019–20. This represents 34% of the permitted annual volume (109,000 m³) and is a significant decrease from the amount harvested in the previous year (274,271 m³).

In the LNE region, 132,222 m³ of high-quality large sawlogs and large veneer logs were harvested from native and hardwood plantation forests, representing 83% of the permitted annual volume (160,000 m³). This is an increase from the amount harvested in the previous year (122,792 m³).

²⁶ www.forestrycorporation.com.au/sustainability/certification



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 and hardwood plantations. South Coast sub-region and Tumut sub-region figures have been combined in Southern region since 2002.

In the Eden region only 2,680 m³ of high-quality large sawlogs were harvested from native forests, representing 12% of the permitted annual volume (23,000 m³). This is a decrease from the amount harvested in the previous year (4,179 m³). No piles, poles or girders were supplied from the Eden region.

In 2019–20, a total of 74,998 tonnes (t) of pulp grade timber were harvested in the Eden region, representing 22% of the permitted annual volume (345,000 t). This was a decrease from the previous year (194,614 t or 56.4% of permitted annual volume). The volume of pulp grade timber harvested from the Eden region since 1999–2000 remains below the specified annual volume.

In the Southern region, 55,985 m³ of high-quality large sawlogs, veneer logs and posts were harvested. This represents 58% of the annual permitted volume, (96,500 m³, comprising 48,500 m³ from the South Coast sub-region and 48,000 m³ from the Tumut sub-region). This was a decrease from the previous year. The quantities by sub-region were:

- South Coast sub-region – 31,821 m³ (66% of permitted volume), a decrease from the previous year (41,562 m³)
- Tumut sub-region – 24,164 m³ (50% of permitted volume), a decrease from the previous year (27,824 m³).

No piles, poles or girders were harvested from the Tumut sub-region and 206 m³ of these products were harvested from the South Coast sub-region.

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 2019–20, a total of 278,420 m³ of non-specified (unregulated) logs were harvested from Forestry Corporation native forests and hardwood plantations across all coastal IFOA regions. This is less than in 2018–19, when 386,066 m³ were harvested. This year, 74,168 t of non-specified pulp grade timber were produced. This is a significant decrease from the previous year, when 138,691 t were produced.

Table 3 Quantities (m³) of native forest and hardwood plantation timber products – coastal regions 2019–20

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	58	0	0	0	3,839	3,114	1,447	742
High-quality large sawlogs ¹	31,557	24,164	0	2,680	79,455	28,354	24,123	6,789
Large poles/piles and girders	206	0	0	0	9,246	8,214	3,318	854
Small veneer	0	0	0	0	1,407	2,252	352	462
High-quality small sawlogs	4,810	80	0	3,276	12,835	11,889	11,254	4,916
Low-quality sawlogs	10,031	8,266	821	1,090	62,020	39,796	19,874	16,688
Small poles/piles and girders	467	0	0	138	6,150	6,142	2,009	1,813
Biomass	93	0	0	0	1,518	1,390	586	0
Firewood/misc.	20,891	1,606	676	3,113	11,482	6,285	1,945	0
Total (m³)³	68,114	34,115	1,497	10,296	187,951	107,436	64,909	32,262
Pulp (Eden) ^{1, 2} (tonnes)	0	0	0	74,998	0	0	0	0
Pulp/chipwood (tonnes)	26,756	1,355	0	–	13,077	14,510	0	18,470
Total (tonnes)	26,756	1,355	0	74,998	13,077	14,510	0	18,470

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 m³.

³ Minor rounding discrepancies may occur in totals.

Timber volumes harvested in Western IFOA regions

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 nine and a half years since January 2011, 43,636 m³ of high-quality sawlogs have been harvested, accounting for 48.5% of the allowed 20-year volume of 90,253 m³.

Figure 3 reports on the volume of sawlogs and residue from these operations in the Riverina Red Gum region between 2011–12 and 2019–20. During 2019–20, a total of 4,675 m³ of high-quality large sawlogs were harvested from state forests and Western Lands Lease areas.

A total of 3,360 m³ of low-quality sawlogs and 20,113 t of residue grade logs were generated in the course of producing the high-quality sawlogs. A further 29,414 t of residue were harvested from Western Lands Lease areas. A total of 37,448 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 t.

Under the previous cap of 212,220 t, a total of 198,902 t of this product, representing 93.7% of that permitted, were harvested between 2013 and 2019.

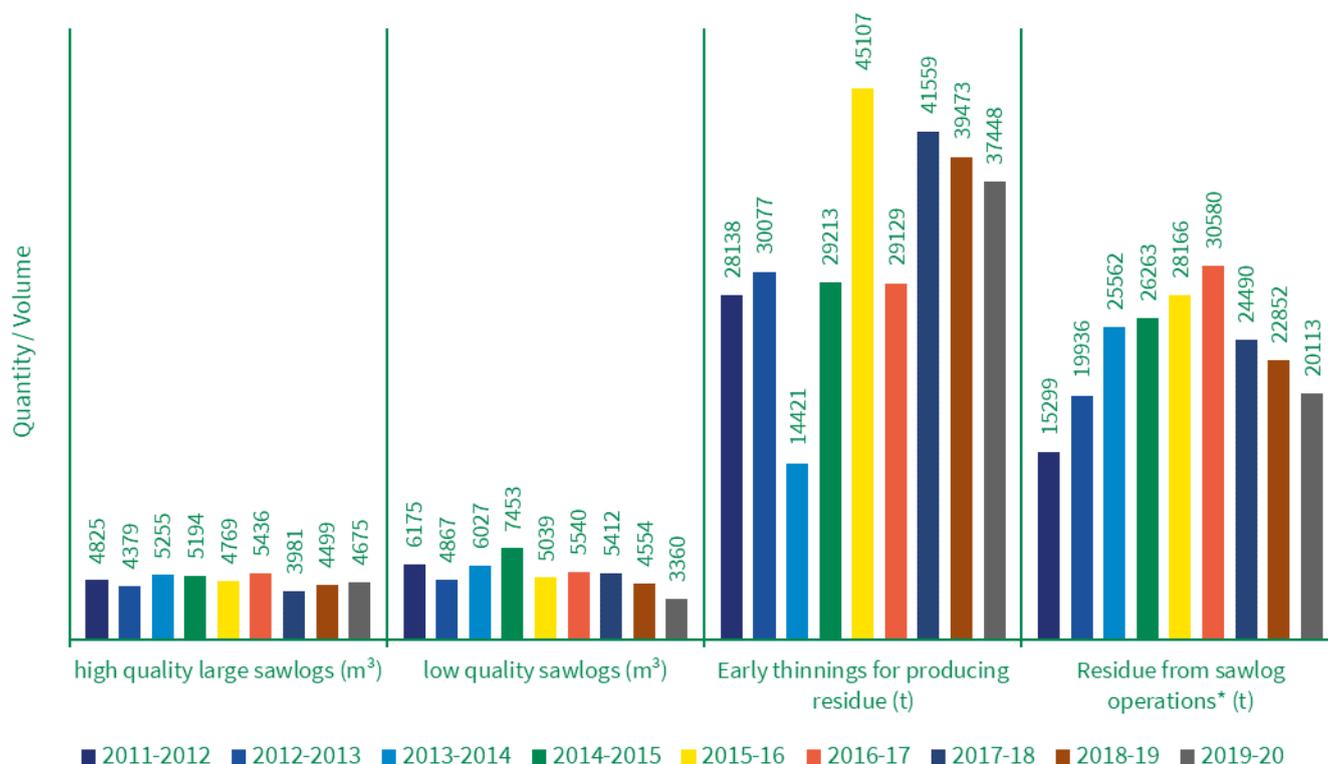


Figure 3 Volume (m³) of high-quality large sawlogs and low-quality sawlogs and quantity (t) of early thinnings obtained from the Riverina Red Gum region since the IFOA commenced

Table 4 Timber and forest products harvested from the Riverina Red Gum region in 2019–20

Product	Volume (m³) or quantity (t)	Estimated net harvest area (ha)
High-quality sawlog	4,675 m³	575 (all three products from the same area)
Low-quality sawlog	3,360 m³	
Residue	20,113 t	
Early thinning residue	37,448 t	1,114
Residue (Western Lands Leases)	29,414 t	1,268
Firewood permits issued	2,524 t (2,356 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 2019–20 compared with previous years. Figure 5 shows trends in volume harvested, compared to the quota.

In 2019–20, a total of 2,924 m³ of cypress logs were harvested in the region, representing 7% of the annual average permitted volume (41,000 m³). The decline in volumes compared to previous years was mainly due to the closure of the Baradine sawmill in March 2018. A total of 523 m³ of ironbark sawlog and fencing timber were harvested, representing 25% of the specified annual limit (2,050 m³) and 4,352 t of firewood were harvested, representing 44% of the average yearly allocation (9,800 t).

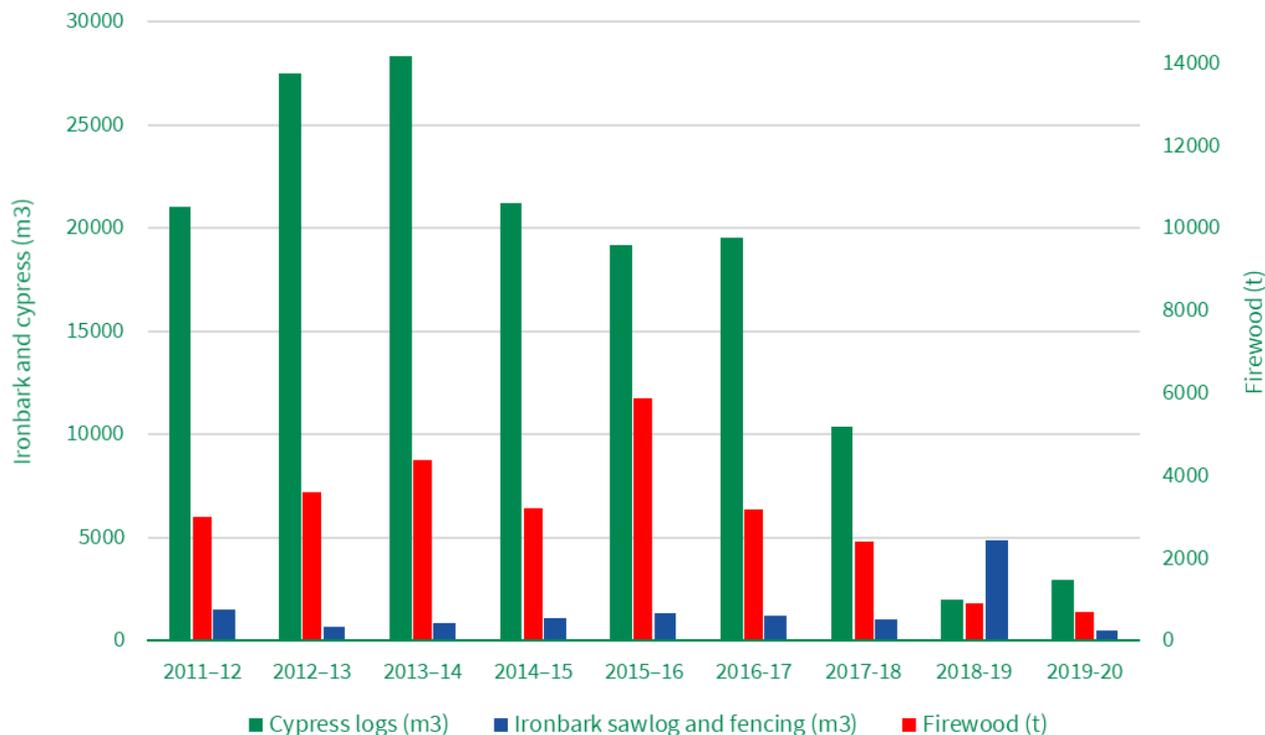


Figure 4 Volumes (m³) of cypress sawlogs and ironbark sawlogs and fencing and quantity (t) of firewood obtained from the Brigalow–Nandewar region since the IFOA commenced

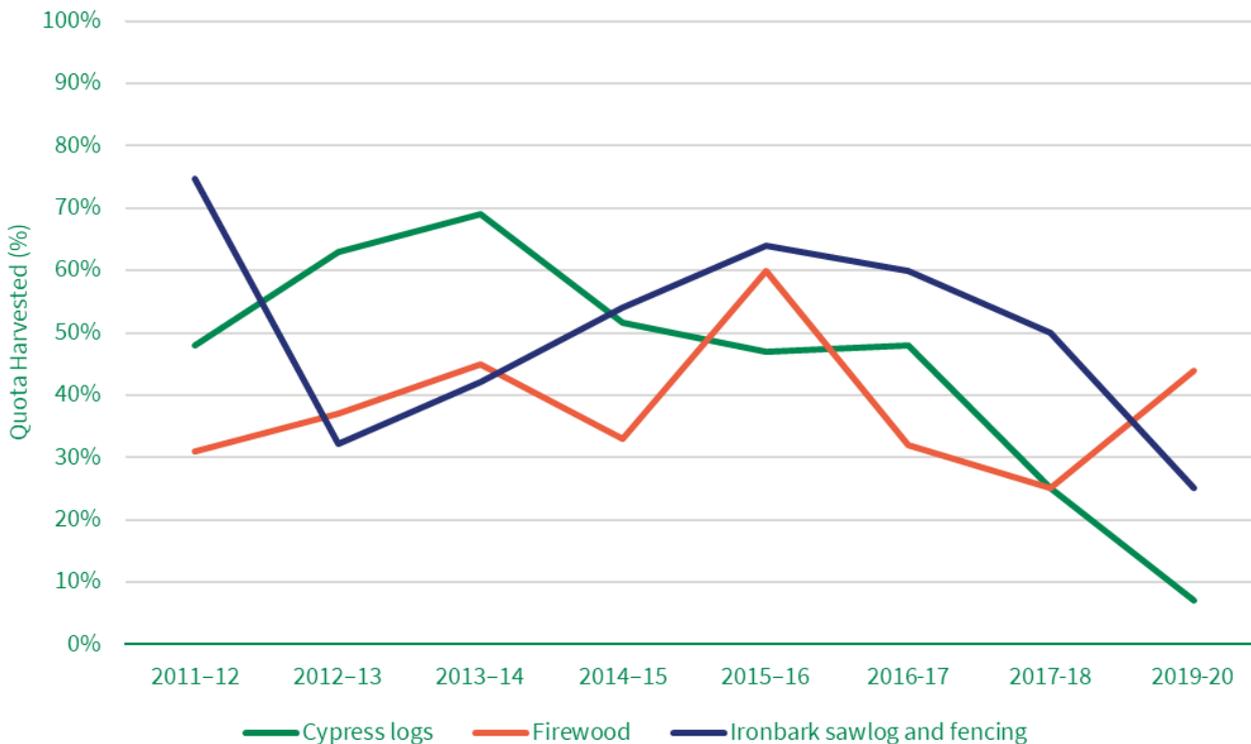


Figure 5 Trends in the percentage of allowable volume over time in the Brigalow–Nandewar region

Table 5 Timber and forest products harvested from the Brigalow–Nandewar region in 2019–20

Product	Volume (m ³) or quantity (t)	Estimated net harvest area (ha)
Cypress log	2,924 m ³	439
Ironbark log	523 m ³	715
Timber products (including ironbark and cypress fencing)	nil	–
Firewood (not including permits under the Forestry Act)	4,352 t	In conjunction with cypress sawlog and integrated residue
Firewood permits issued (see IFOA cl. 82)	687 t (756 permits)	n/a ¹
Didgeridoo	nil	–
Broombush	219 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 2019–20 compared with previous years.

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 commenced 1 July 2011.

During 2019–20, a total of 17,656 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, 2,224 m³ of cypress logs were harvested.

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

Harvesting operations for the purpose of producing residue timber from white cypress or bull oak trees may be carried out in accordance with clause 32G of the IFOA. A total of 5,180 t of residue timber from early thinning were harvested. 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.

Tables 4 to 6 summarise timber products obtained from state forests and Western Lands Leases covered by the three western IFOAs in 2019–20.

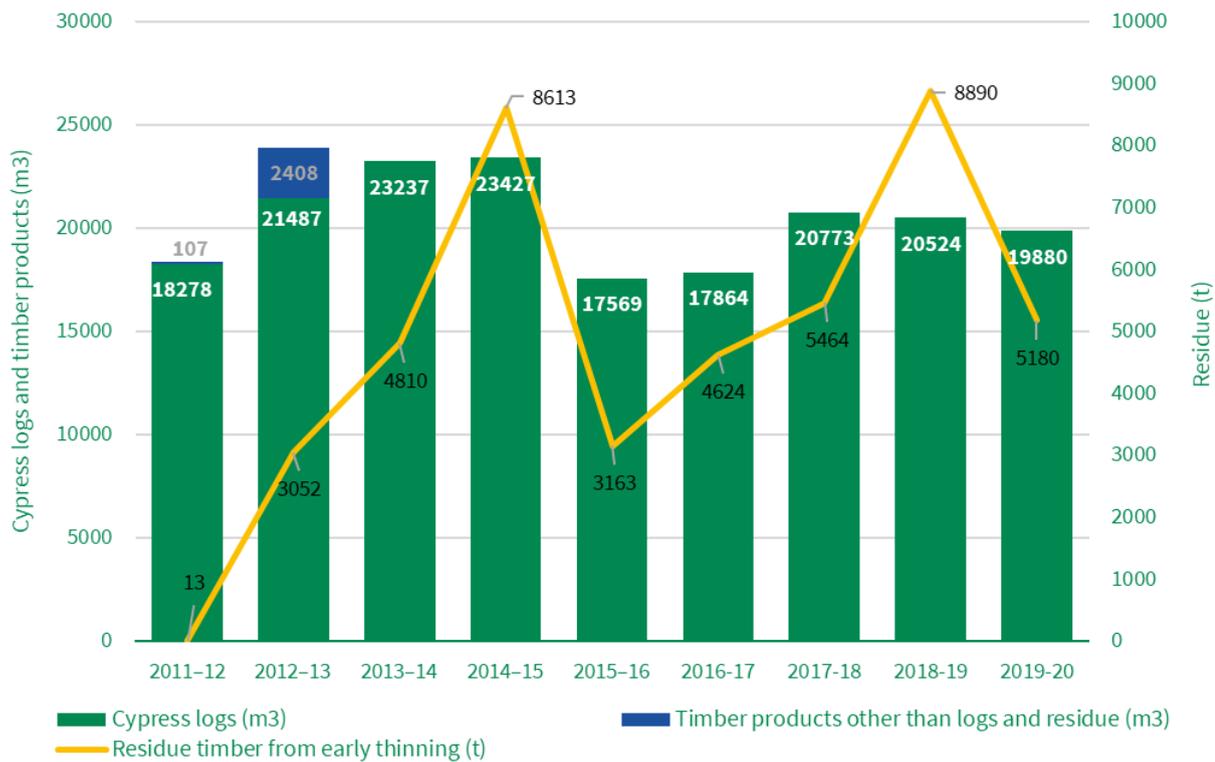


Figure 6 Volume (m³) of cypress sawlogs, timber products other than logs and residue and quantity (t) of residue timber from early thinning obtained from the South Western Cypress region

Table 6 Timber and forest products harvested from the South Western Cypress region in 2019–20

Product	Volume (m³) or quantity (t)	Estimated net harvest area (ha)
Cypress log – south of Mitchell Hwy	17,656 m³	2,141
Cypress log – north of Mitchell Hwy	2,224 m³	143
Cypress log – Western Lands Leases	nil	–
Residue	5,180 t	614
Timber products	nil	–
Firewood permits issued (see IFOA cl. 82)	342 t (359 permits)	n/a ¹

Source: Forestry Corporation

¹ not available

Sustainable harvesting – non-wood forest products

Monitoring the extraction of non-wood forest products and services helps assess the sustainability of these industries to ensure viable productivity of natural forests, long-term contribution to the livelihoods of NSW communities and access to products for varied markets.

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 2020b).

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 aim to promote natural regeneration. Forestry Corporation ensures that natural or assisted regeneration of native forests is effective and timely. Techniques vary across regions and conditions. In 2019–20, a total of 8,326 ha of native forest were harvested using an integrated silvicultural prescription. In addition, 2,671 ha of cypress release and thinning was undertaken, 336 ha of ironbark harvesting and 2,938 ha redgum harvesting.

For coastal forests an assessment of survey plots during the period found 72% were effectively stocked with commercial species of regenerated seedlings and trees retained after harvesting. This is slightly lower than 76% in 2018–19; however, a regeneration threshold of 65% of assessed plots in any given harvest area 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 2019–20* (FCNSW 2020b).

Plantations

In 2019–20, a total of 222 ha of hardwood plantations were harvested, while the figure for softwood plantations was 10,908 ha.

Forestry Corporation ensures the effective and timely replanting of timber plantations following harvesting operations and reports planting seasons by calendar year. No new (first rotation) plantations were established on historically cleared land during the 2018 planting season. In 2019, a total of 7,475 ha of softwood plantation forests were re-established, along with 345 ha of hardwood plantations.

Effective re-establishment in plantations has occurred if more than 80% of seedlings survive after one year. In 2019, no hardwood plantations and 9.8% of softwood plantations required restocking.

The area of softwood plantations harvested was significantly higher than normal due to the impacts of the 2019–20 fires. Unlike many native species, which are adapted to fire, most softwood pine plantations die following a fire and must be harvested within around 12 months if the timber is to retain its structural properties and value. Forestry Corporation carried out an extensive post-fire salvage harvest program and also increased its annual replanting program to restock all fire-affected plantations over a seven-year period.

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 2018 report (EPA 2018) provides the most recent overview of pest threats, monitoring and control strategies in NSW.

Monitoring and control of pests and disease

Forestry Corporation

Forestry Corporation funds the DPI Forest Health Team to undertake annual surveys to determine 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.

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 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 2019–20, Forestry Corporation spent around \$2.6 million on pest animal and weed control in areas under its management (hardwood and softwood divisions). Further details are available in Forestry Corporation's 2019–20 *Annual Report* (FCNSW 2020a) and *Sustainability Report* (FCNSW 2020b).

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 2019–20 reporting period are outlined below.

Pest animals

Regional Strategic Pest Animal Management Plans (RSPAMPs) have been implemented 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](#).²⁷

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 2018–2021²⁸ 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 frequently for species that are still spreading rapidly, such as feral deer (updated 2020).

During the reporting period the NSW Vertebrate Pest Research Unit²⁹ 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.

Weeds

In 2019–20, the NSW Weed Biocontrol Taskforce, led by DPI's Weed Research Unit, undertook research to find suitable biological agents to combat ox-eye daisy, mother-of-millions and blue heliotrope. The Taskforce also mass reared and released agents to assist in the management of Hudson pear, Madeira vine and cat's claw creeper. All these weeds occur in forest areas. Further weed biocontrol research continued on a number of aquatic weeds.

The 11 LLS regions have a Regional Weeds Coordinator and Regional Weeds Committee in place to facilitate the implementation of the Regional Strategic Weeds Management Plan. Regional Weeds Committees comprise members from all tenures and industries who have a duty to manage weeds, including private, commercial and government forestry, and each Regional Strategic Weed Management Plan identifies forestry assets and biosecurity risks associated with forestry-related land uses in each region. Eight of the 11 Regional Weeds Committees had regular attendance from a Forestry Corporation member in 2019–20.

Local control authorities within each region provide operational inspections of land, compliance, control of certain high-risk weeds and engagement with owners and occupiers of land, including forestry lands. Table 7 shows weed inspections of land used for forestry in 2019–20.

²⁷ www.lls.nsw.gov.au/biosecurity/pestplan

²⁸ www.dpi.nsw.gov.au/biosecurity/weeds/strategy/strategies/nsw-invasive-species-plan-2018-2021

²⁹ www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/vertebrate-pest-research

Table 7 Weed inspections of land used for forestry in 2019–20

Land use including forestry ¹	No. of inspections by local control authorities
Production from dryland agriculture and plantations	12,260
Production from irrigated agriculture and plantations	1,172
Production from relatively natural environments	8,147

Source: NSW DPI Biosecurity Information System – Weeds

¹ Australian Land Use and Management (ALUM) Classification³⁰

Records indicate that 294 inspections of land held by State Forests were conducted in 2019–20.

Note that these land-use classifications also contain land uses other than forestry and the data should be used as an indicator only.

DPIE and NPWS

Saving our Species pest management actions and strategies

The Saving our Species (SoS)³¹ program strategically identifies the most important pest management actions needed to ensure the survival of threatened species and ecological communities. SoS also includes specific strategies to address key threatening processes, the majority of which are directly related to the impacts of pests. These strategies include eradication and/or containment objectives where appropriate, as well as specific research and development required to better address these key threatening processes.

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 commenced the largest feral animal control program it has ever undertaken with a commitment to 1,500 hours of aerial shooting and 30,000 km of aerial baiting. Weed control activities commenced 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 2020e).

Pest and weed monitoring and control on Forestry Corporation estate

Expenditure on pests and weeds in native and hardwood forests increased on the previous reporting period, with over \$1.1 million spent in feral animal control programs and weed control. This included significant work in partnership with LLS to target wild dogs in the aftermath of fires and drought.

Extent, severity and impact of the 2019–20 bushfires

Fire is an important part of many forest ecosystems in Australia and may have positive or negative impacts on forest health and vitality. SOFR 2018 (ABARES 2018) provides details on the extent of forest burnt by planned and unplanned fires across all jurisdictions during the period covered for that review, July 2011 – June 2016.

Between August 2019 and March 2020, widespread bushfires had major impacts on forests in NSW. The *NSW Rural Fire Service Annual Report 2019–20* observes that the bushfire season over 2019–20 was the worst that NSW has experienced. Brought about by a combination of one of the worst droughts on record, unprecedented weather conditions and intense fire behaviour, the damage to the natural environment and wildlife was extreme (RFS 2020).

³⁰ www.agriculture.gov.au/abares/aclump/land-use/alum-classification

³¹ www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program

The NSW Government estimated that over 5.5 million hectares in NSW were burnt including 2.72 million hectares of the NSW national parks estate (≈38%); and more than 890,000 ha of state forests, including 65,000 ha of hardwood and softwood timber plantations. The impacts were predominantly in coastal and tableland areas of NSW where most native forestry operations occur. Overall, 44% of native state forests in NSW were affected by fire in 2019–20. These areas include regions covered by the RFAs and IFOAs (DPIE 2020f).

In an early analysis of the impacts of the bushfires using extent of canopy damage as an indicator, DPIE found that of the 245 national parks wholly or partially within the fire ground, 23% show full canopy damage and a further 36% show partial damage. The extent of the impact of the fires on forest understories was not included in DPIE's report (DPIE 2020f). Some areas in the DPIE report shown as having relatively undamaged canopy were included within burnt area maps developed by the RFS and NPWS (FCNSW 2020c).

An analysis by DPI Forest Science (DPI 2020a) found fire severity was much the same regardless of tenure (national park, state forest, private forest). Within state forests, burnt areas mapped as harvested were compared to those with no history of harvesting in the last 35 years. In general, there was little indication that harvesting affected fire severity at the landscape scale.

The bushfires were found to have altered large areas of habitat for species and ecosystems, potentially impacting biodiversity and ecological integrity into the future. In some places where bushfires were very extensive, there were few unburnt areas to provide refuge for wildlife while the burnt areas recover. Heavy follow-up rains occurred in burnt areas creating the potential for major erosion events to be triggered due to reduced capacity of landscapes to maintain soil stability.

Following the 2019–20 bushfires the NSW Bushfire Inquiry, commissioned by the NSW Government, made 76 recommendations, all of which were accepted by the Government. The inquiry confirmed that the 2019–20 bushfires were exacerbated by extreme weather events including high temperatures, strong winds and drought, and cited these as well as the number of ignitions, the constraint on fire suppression activities and the strain on firefighting resources as the key factors contributing to the severity of the fire season. The inquiry report acknowledged that climate change played a role in influencing weather conditions (including rainfall and temperature) leading up to and during the 2019–20 fire season (DPC 2020).

Monitoring and assessment of the impact of the bushfire season on NSW forests will continue to be undertaken by Forestry Corporation, DPI, EPA, DPIE, NPWS and the NRC and its collaborating institutions.

NSW Government agencies, forestry industry organisations and the RFS developed response and recovery plans following the bushfires. These were informed by the initial assessments and reports mentioned above and will be adjusted and future actions planned based on information from continuing monitoring and research programs.

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, fire, grazing, wood harvesting and recreation. Drought and increasing temperatures can also harm these resources.

Ongoing strategies to mitigate these risks are described in *NSW Forestry Snapshot Report 2017–18* (EPA 2019). These include conditions in the IFOAs, RFAs and the PNF Codes of Practice for the protection of soil and water during forestry operations. Compliance with the conditions is monitored by the EPA.

Drought, temperature and fire

The NSW State of the Environment 2018 report (EPA 2018) detailed 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.

NSW State of the Environment 2018 also reported that fire weather conditions had become more severe and the fire season longer in some parts of NSW and projected that the trends would continue. It also noted recent research indicating that the risk of pyroconvection in NSW has been increasing in spring and summer and that intense bushfires would be more likely to occur in future (EPA 2018). The trend towards longer fire seasons and the increased incidence of fire-induced storms (pyroconvection) are supported in the findings of the NSW Bushfire Inquiry (DPC 2020).

As reported above, 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, impacting soil and water quality, which was further exacerbated in some areas by periods of heavy rain and flooding.

Immediately after the 2019–20 bushfires 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. Both took a precautionary approach when considering risk mitigation measures required prior to the resumption of timber harvesting in fire-affected areas.

The EPA initiated special site-specific operating conditions, supplementary to those in the Coastal IFOA, to be applied to forestry operations in fire-affected areas. 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.

Further information is available on the [EPA website](#)³² and on the [FCNSW website](#)³³ and in its 2019–20 Sustainability Report (FCNSW 2020b).

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.

Key components of DPI's Forest Carbon research program include the quantification of the carbon footprint of production forests and wood products in NSW, including the application of Life Cycle Assessments.

Bushfires and regrowth

Forestry Corporation estimates that during 2019–20, within NSW state forests, bushfires emitted around 70 megatonnes (Mt) of CO₂-e compared to 3 Mt in 2018–19 (FCNSW 2020b).

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 understorey vegetation, grasses and canopy (leaves/branches), rapidly build up carbon again following fire (within 10–15 years). Even in patches of fire-induced mortality there is minimal loss of carbon at the landscape level, which is usually balanced by fast-growing regrowth. Forestry

³² www.epa.nsw.gov.au/your-environment/native-forestry/bushfire-affected-forestry-operations

³³ www.forestrycorporation.com.au/operations/about-our-harvesting-operations/2020-bushfire-recovery

Corporation will be monitoring regeneration of native forests and replanting more than 14 million seedlings a year over seven years to re-establish fire-affected plantations.

Ongoing monitoring will occur to determine 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.

National parks and the Net Zero Plan

In March 2020 the NSW Government announced a commitment to address climate change through a goal of net zero carbon emissions by 2050. The first stage of the Net Zero Plan³⁴ includes a target of 35% emissions reduction by 2030 compared to 2005 levels. The Government has committed in the plan to improve and expand the NSW national park footprint to protect land that is currently a carbon sink and create opportunities for additional carbon sequestration.

In 2019–20, an extra 65,167 ha were declared under the NPW Act and a further 158,415 ha acquired by NPWS (DPIE 2020d).

Another contributing initiative to the net zero plan is an NPWS tree planting program, which aims to rehabilitate around 1,300 ha of previously cleared and degraded land. Using a grant of \$4 million from the NSW Climate Change Fund, more than 1.5 million trees will be planted at 17 sites across the NSW national parks estate. On completion, the five-year program is expected to provide the foundation for natural ecological processes to recommence; supplement habitat for local wildlife; and absorb greenhouse gases with 100,000 t of CO₂ predicted to be sequestered. Each site has been registered under the Australian Government's Emissions Reduction Fund.

As of February 2020, tree planting had been undertaken at 13 project sites and planning, design and assessment activities for the remaining four sites substantially completed. The NPWS tree planting program is the first carbon credit project to have been established within a national parks system in Australia. Further details can be found on the project website³⁵.

Long-term social and economic benefits of native forests

In addition to timber, forests provide a range of products and services that benefit local communities and promote economic diversification. These include forest products and services such as firewood, honey, oils, cattle grazing, recreation and tourism.

Forests are also managed for the economic and social benefits they provide to communities, Aboriginal and non-Aboriginal, including employment, training and education.

Forest products and services

SOFR 2018 provides comprehensive information about NSW contributions to the national log harvest as well as the value of other forest products (ABARES 2018). Australian forest and wood products statistics produced by ABARES indicate that, for 2019–20, the NSW total log harvest was almost 6.6 million m³ with 629,000 m³ of native hardwood, 265,000 of plantation hardwood and 5.6 million m³ from softwood plantations, and a total value of over \$500 million – ABARES website.³⁶ Details of timber harvested by Forestry Corporation under the Coastal IFOA and Western IFOAs for 2019–20 are shown in this report on pages 16–22.

Forestry Corporation's *Sustainability Report 2019–20* (FCNSW 2020b) includes information about the types and volumes of other products and services produced through its forestry operations 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

³⁴ www.environment.nsw.gov.au/topics/climate-change/net-zero-plan

³⁵ www.environment.nsw.gov.au/topics/climate-change/nsw-climate-change-fund/programs/environmental-tree-planting-projects

³⁶ www.agriculture.gov.au/abares/research-topics/forests/forest-economics

impacted by drought and then bushfire during 2019–20 when thousands of hives were destroyed. The extensive fires caused an estimated 50% reduction in state forest bee sites and 35% reduction in national parks sites.

To provide relief to beekeepers during drought conditions the NSW Government waived annual fees for existing beekeeping permits on public lands, including national parks, during 2019–20. The Government also assisted in the targeted recovery of hives and apiary businesses early in 2020 through the Bushfire Industry Recovery Package.³⁷

There were 1,986 commercial bee sites in the national parks estate in 2019–20 providing a potential revenue source as well as commercial opportunities for the apiary industry. A further 4,318 commercial bee sites were provided on state forests generating revenue of \$837,057.

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. At the end of 2019–20, a total of 5.48 million hectares of forested land were available for recreation and tourism in the NSW national parks system. This only includes lands reserved under the NPW Act (excludes private lands). An additional 2 million hectares of state forests were also available for recreation and tourism.³⁸

NSW national parks play a key role in the visitor economy, given nature-based tourism is the highest growth tourism sector. NSW national parks are often the destination of choice.

The opportunity to visit a national park is often the most critical component of trip generation. Over 45% of visitors to NSW national parks identified the national park as being the only reason to travel, while 25% regarded a visit to a national park as the main reason for travel. Park visitation is estimated to be 60 million visits. In 2018 (the latest year for which data is currently available) national parks contributed \$5.2 billion in economic welfare to the State and contributed over \$17.9 billion worth of economic activity that supports approximately 74,000 jobs across NSW (2018 Park Visitor Survey).

The most recent NPWS survey of visitors to national parks (2018) was summarised in the *Forestry Snapshot Report 2017–18* (EPA 2019), with further detail available on the [DPIE website](#).³⁹

Managing recreational assets

National Parks and Wildlife Service

In 2019–20 NPWS invested \$29.4 million in critical visitor infrastructure in national parks, including walking trails, mountain bike trails and lookouts. Investing in visitor infrastructure and improving accessibility aims to increase nature-based tourism in NSW, boost regional economies and improve community wellbeing.

Key projects the NSW Government is progressing for these purposes include:

- Visitor Infrastructure Program (\$80 million over seven years to 2025) – nine projects to create iconic, world class nature-based experiences in national parks across NSW. The projects will develop and expand visitor facilities and infrastructure, including tracks and trails, new and upgraded lookouts, picnic areas, eco-accommodation and campsites.
- Improving Access to National Parks initiative (\$150 million over four years to 2023) – including increased safety and accessibility of walking tracks and trails; upgrading access to iconic lookout points to a mobility-impaired access standard; expansion of safety programs for bushwalkers and rock fishing; and digital access initiatives and tools.

Details on these programs are provided on the [DPIE website](#).⁴⁰

³⁷ www.nsw.gov.au/regional-nsw/regional-recovery-programs/bushfire-industry-recovery-package

³⁸ Figure drawn from 2018 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) data.

³⁹ www.environment.nsw.gov.au/research-and-publications/our-science-and-research/our-research/social-and-economic/social/domestic-visitation

⁴⁰ www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/park-management/community-engagement/walking-tracks-and-trails-in-national-parks

Forestry Corporation

Forestry Corporation provides public access across its estate and facilities for a wide range of activities for community benefit. 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. Many activities, such as mountain-bike riding, horse riding, camping and four-wheel driving, can be undertaken in state forests free of charge. Organised groups, clubs (including mountain-biking, archery and shooting clubs) and commercial tourism operators can use state forests or establish recreational facilities within forests under a permit system. The management of tourism and recreational facilities is part of Forestry Corporation's commitment to managing forests for these values.

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 2019–20, employment in forestry and related industries in NSW was down by 7% year-on-year to 20,000. This was due to lower employment in wood product manufacturing and pulp, paper and converted paper product manufacturing. NSW accounted for 29% of Australian employment in the sector which increased by 2% to 69,000 in 2019–20 (DPI 2020b).

Forestry Corporation employed 534 FTE staff as of 30 June 2020. Of these, 316 were primarily involved in management, administration and technical roles and 218 were engaged in field contractor management, road construction and maintenance, tree planting and pruning, nursery work, forest conservation, fire mitigation and suppression, and supporting forest recreation. Aboriginal and Torres Strait Islander employees make up 4.7% of the Forestry Corporation workforce (FCNSW 2020a). Forestry Corporation also contracts third-party organisations, each of which has its own workforce, for activities such as harvesting, timber haulage and plantation site preparation. In the reporting period almost 200 seasonal staff were employed specifically for the firefighting season.

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

SOFR 2018 identifies four different types of Indigenous ownership and management and provides the most recent data on the area of forest in these categories. As of 2016, over 56,000 Indigenous cultural places and heritage sites were registered across 37,548 ha of NSW forests (ABARES 2018).

Indigenous ownership and management categories across all tenures

Indigenous owned and managed: freehold lands that are both owned and managed by Indigenous communities.

Indigenous managed: lands that are managed but not owned by Indigenous communities (e.g. Crown reserves and leases) and lands that are owned by Indigenous people but have formal shared management agreements with Australian and state and territory government agencies.

Indigenous co-managed: lands that are owned and managed by other parties, but have 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: lands 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: SOFR 2018

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 2019–20, NPWS arranged 19 training sessions attended by 130 Aboriginal community members. Topics included:

- Aboriginal sites monitoring
- stone tool identification and cataloguing
- kangaroo harvesting training
- Certificate III conservation and land management
- Certificate II conservation and land management
- construction white card, excavator, and chainsaw refresher 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 2019–20, \$78,000 in grants supported activities conducted across 10 parks and reserves.

Thirty Aboriginal people were employed on short-term contracts (by NPWS or other organisations) in various capacities to undertake park partnership activities; and one Aboriginal business was contracted for \$6,000.

Cultural events held on NPWS parks and reserves were attended by over 300 Aboriginal people. These events included:

- on the job, informal training such as stone tool identification and cataloguing
- four cultural camps held with over 80 participants, including smoking ceremony, bush tucker walks, making and painting clapsticks and learning Aboriginal languages
- recording the cultural values of parks.

NPWS Post Fire Recovery Aboriginal Cultural Heritage Assessment project

In response to the 2019–20 fires that affected significant areas of national parks estate covered by the FAs, assessments were done by the local Aboriginal community with NPWS on the impacts of the fires. The NSW NPWS Post Fire Recovery Aboriginal Cultural Heritage Assessment project aimed to evaluate the fire severity and impacts on Aboriginal cultural heritage values across parks reserves, in collaboration with our Aboriginal joint management partners.

The project included nine information sessions held across the state with 29 Aboriginal community members attending the information sessions. Nine Aboriginal organisations, and four archaeologist companies, were engaged and contracted. Thirty-six survey days covered 23 reserves across fire-affected areas and 56 Aboriginal community members participated in the eight surveys done.

As part of the project, 35 Aboriginal Heritage Information Management System (AHIMS) sites were ground-truthed and 27 sites were registered in AHIMS. When assessing damage from the fires to sites, six were considered to have major damage, 29 minor damage and 20 sites no damage from the fires.

A key outcome of the assessments was the identification of 38 management recommendations and 16 future priorities.

Forestry Corporation

As at June 2020, the area under Forestry Corporation management included:

- 57,422 ha of state forests with recognised Native Title
- six gazetted Aboriginal Places
- 4,646 protected Aboriginal sites
- 1,685 ha managed for Aboriginal cultural heritage.

Six Aboriginal Liaison Officers in Forestry Corporation's Hardwood Forests Division's Aboriginal Partnership Liaison Team work with Aboriginal communities to develop partnership arrangements and manage these sites.

Forestry Corporation continues 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.

Thirty-four Aboriginal groups are regularly contracted to Forestry Corporation for archaeological site surveys as part of the planning process for harvesting and roading operations. Six Aboriginal groups have seed and plant collection permits for state forests.

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

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 old 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 where non-Indigenous heritage sites occur (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 2020:

- one World Heritage site
- five National Heritage List (NHL) sites
- eight nationally significant sites not on the NHL
- 53 State Heritage Registered (SHR) sites
- 40 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 2019–20 funding from this program was provided to over 13 heritage sites on national parks estate, enabling successful completion of a variety of important conservation planning activities and works.

Historic heritage post-fire recovery

As part of the 2019–20 fires that affected significant areas of national parks estate covered by the FAs, some heritage structures were damaged or destroyed. During 2020, following best practice International Council on Monuments and Sites heritage guidelines, NPWS implemented an assessment process for each site to determine the appropriate post-fire recovery actions.

Ensuring public participation, provision of information, accountability and transparency in carrying out 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* released by the NSW Government in November 2018 (currently being updated).

In addition to this annual forestry snapshot, 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.

Forestry is also included in broader reporting undertaken through the *NSW State of the Environment* (three-yearly), 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 an annual report every year on their operations.

In 2019–20, the NSW Bushfire Inquiry was a significant process that involved comprehensive information collection on the bushfire events in NSW from independent experts, public and stakeholder participation via meetings and submissions. Ultimately the inquiry produced a major report with 76 recommendations for consideration by the NSW Government, some of which related to the management of forestry areas covered in this report. Details of the process, interim reporting and the final report can be found on the [NSW Government website](#).⁴¹

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

Through its Forest Management Framework (NSW Government 2018), the NSW Government brings together a combination of legislation, regulation, standards and codes for 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 continuous review, improvement and implementation of instruments such as the IFOAs and PNF Codes of Practice has supported and promoted the adoption of best practice standards and encouraged voluntary compliance while including mechanisms for monitoring compliance and enforcing regulation.

Applying best-available knowledge and adaptive management processes to deliver best practice forest management

The NSW Government's commitment to this principle of ESFM has been strengthened during this reporting period through its appointment and continued funding of the NRC to oversee a comprehensive suite of research and monitoring through the FMIP.

In addition to the NRC's monitoring and research programs, NSW Government agencies and organisations involved with ecologically sustainable management of NSW forests also have dedicated research and monitoring programs. These programs support efforts to ensure continuous improvement and adaptive management practices based on current science and best- available knowledge (see sections above in this report for examples).

⁴¹ www.nsw.gov.au/nsw-government/projects-and-initiatives/nsw-bushfire-inquiry

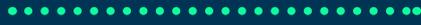
The implementation of the Coastal IFOA during this reporting period provides a positive example of the application of best available knowledge, adaptive management and the precautionary principle to deliver best practice management of NSW forests.

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 the application of 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 have regard to these principles.

In this reporting period, the EPA and Forestry Corporation of NSW each undertook reviews of environmental impacts after the 2019–20 bushfires to satisfy the precautionary principle in assessing potential risks associated with timber harvesting in areas burnt during the fire season. They acted in accordance with the precautionary principle to ensure forestry operations occurring in bushfire-affected areas took practical measures to protect wildlife, soil and water, and the environment in general. Site-specific operating conditions issued by the EPA under the Coastal IFOA were on a case by case basis where the potential impacts from the fires could reasonably be mitigated. Details can be found on the EPA and Forestry Corporation websites.

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 2020 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).

In November 2018 the Coastal IFOA replaced the former UNE, LNE, Southern and Eden IFOAs. Transitional arrangements were put in place to limit the impacts of this change on the forestry industry to allow some operations that had been planned or started under the former IFOAs to continue under the old set of rules until 16 November 2020. From that date, all forestry operations must be undertaken in accordance with the Coastal IFOA requirements.

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*.

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 2019–20, the EPA carried out a strategic compliance and enforcement program on native forestry operations. The compliance program comprised a proactive risk-based approach and actions in response 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 various operations, EPA officers assess each planned harvesting operation against environmental risk criteria as shown in Table 8.

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 areas and rural and residential areas. This risk assessment approach forms just one part of how the EPA prioritises its regulatory activities for proactive work. 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 non-compliance.

Table 8 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

Range of regulatory tools to achieve compliance

The EPA uses a range of regulatory tools to promote native forestry operations' compliance with the IFOAs or PNF Code and reduce potential environmental harm. Tools include audits, field inspections, investigations, desktop assessment, notices, orders, penalty notices and education. These activities 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 and registers can be accessed on the [EPA's website](#).⁴²

Crown native forestry compliance and enforcement activities

This section tabulates the EPA's native forestry compliance and enforcement activities on state forests.

In 2019–20, as part of its compliance program the EPA inspected 47 operations (see Table 9). These inspections were conducted either in response to reports of non-compliance from the public, to support investigations, or as part of proactive compliance activities. The EPA also finalised compliance actions for several operations in IFOA regions (see Table 10).

Table 9 Number of Crown native forest operations inspected in 2019–20

IFOA (region or sub-region)	Number of operations inspected for compliance and enforcement
Coastal	46
Brigalow–Nandewar	0
Riverina Red Gum	0
South West Cypress	1
Total	47

⁴² www.epa.nsw.gov.au/your-environment/native-forestry

Table 10 Number of Crown native forest operations for which compliance action was taken in 2019–20

IFOA (region or sub-region)	Type of compliance action					
	Advisory letters ¹	Formal warnings ²	Official cautions ³	Clean-up notices	Penalty notices	Prosecutions
Coastal	3	1	2	5	2	0
Brigalow-Nandewar	0	0	0	0	0	0
Riverina Red Gum	0	0	0	0	0	0
South-Western Cypress	0	0	0	0	0	0
Non-IFOA	0	0	0	1	0	0
Total operations	3	1	2	6	2	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. As the new Coastal IFOA started during the reporting period, compliance actions for Coastal regions are linked to investigations during the former IFOAs.

¹ Advisory letters are usually issued where it is considered possible that a breach has occurred, but not enough evidence is available to prove the offence.

² Where a non-compliance is minor, the EPA may choose to issue a formal warning.

³ The EPA may issue an official caution if the offence is one for which a penalty notice may be issued. A caution is used rather than a penalty notice if the issuing officer has reasonable grounds to believe an offence has been committed and believes a caution is appropriate in the circumstances.

Private native forestry compliance and enforcement activities

The EPA undertakes inspections and investigations into PNF operations. During 2019–20, EPA officers visited 18 planned or actual logging sites in the field to conduct inspections or as a component of ongoing investigations. The EPA also finalised compliance actions for 22 operations (see Table 11).

Table 11 Number of private native forestry operations for which compliance action was taken in 2019–20

Type of compliance action	Number of operations issued with compliance action
Advisory letter	9
Directions (voluntary)	2
Formal warnings	10
Official cautions	4
Clean-up notices	0
Stop work orders	0
Penalty notices	0
Prosecutions	0

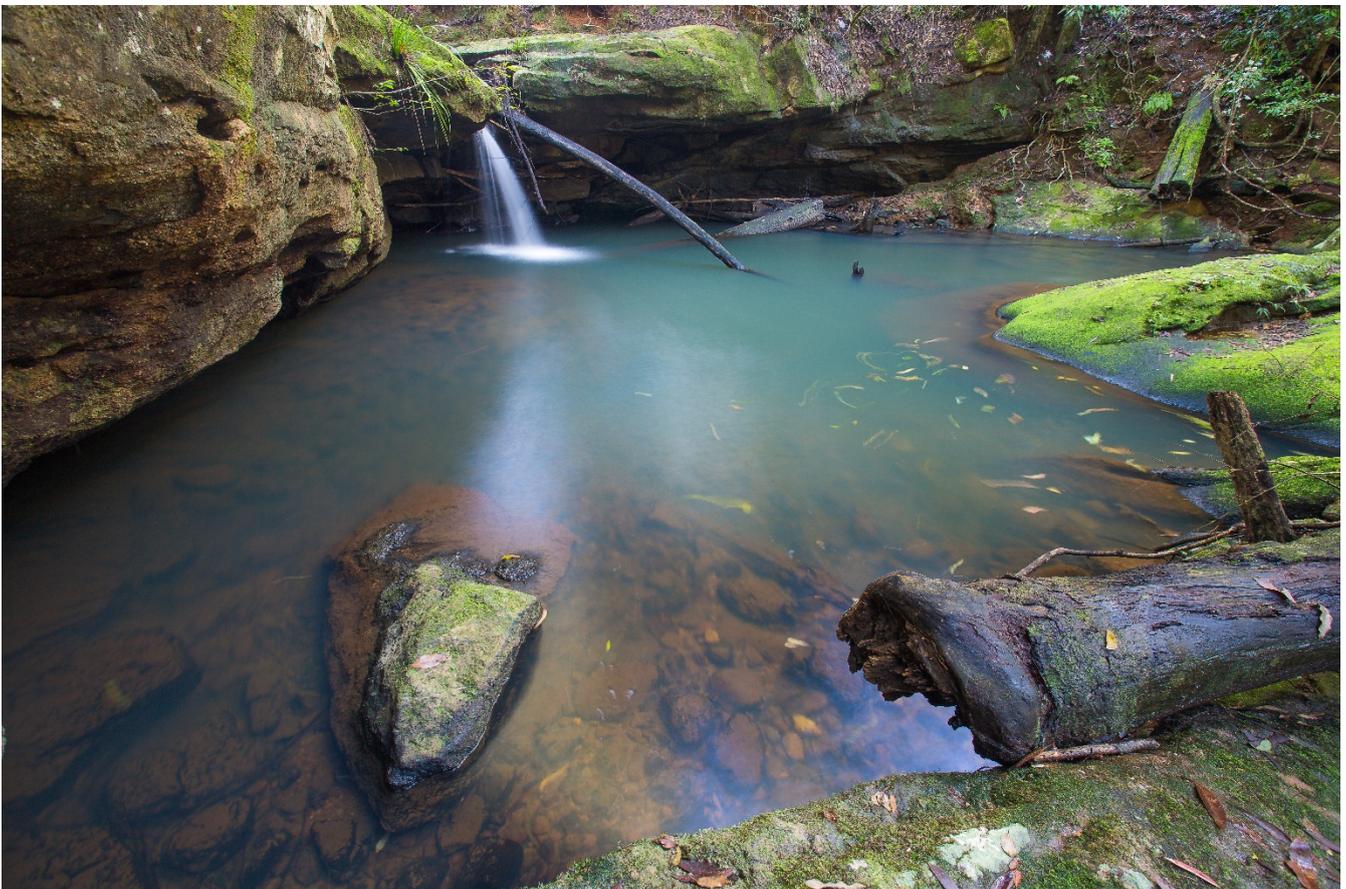
The numbers in the table represent the number of operations that were issued with a compliance action, not the total number of actions issued. If several penalty notices were issued for an operation this is recorded as one in this table. In addition, each compliance action may relate to several breaches.

Fisheries

The Forestry Legislation Amendment Act commenced on 9 November 2018, and on 18 November the Coastal IFOA commenced. 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, contrary to 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 <i>Protection of the Environment Administration Act 1991</i> , section 6(2)(a) in preventing environmental harm)	4

¹The 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 FAs – all regions at June 2020

NSW FA/IFOA	Commenced	In place until
Coastal regions		
Coastal IFOA	15 November 2018	November 2038
Southern region FA	3 May 2002	3 May 2022
Western regions		
Brigalow and Nandewar Community Conservation Area Agreement (CCA Agreement)	11 June 2009	10 June 2016 ¹
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 November 2018)

NSW FA/IFOA	Commenced	In place until
Eden region FA	5 March 1999	4 March 2019
LNE region FA	5 March 1999	4 March 2019
UNE region FA	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 RFAs between the Australian Government and 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 <i>Forestry Act 2012</i>
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 (within OEH)
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
SOFR 2018	State of the Forests Report 2018
t	tonnes
UNE	Upper North East region

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