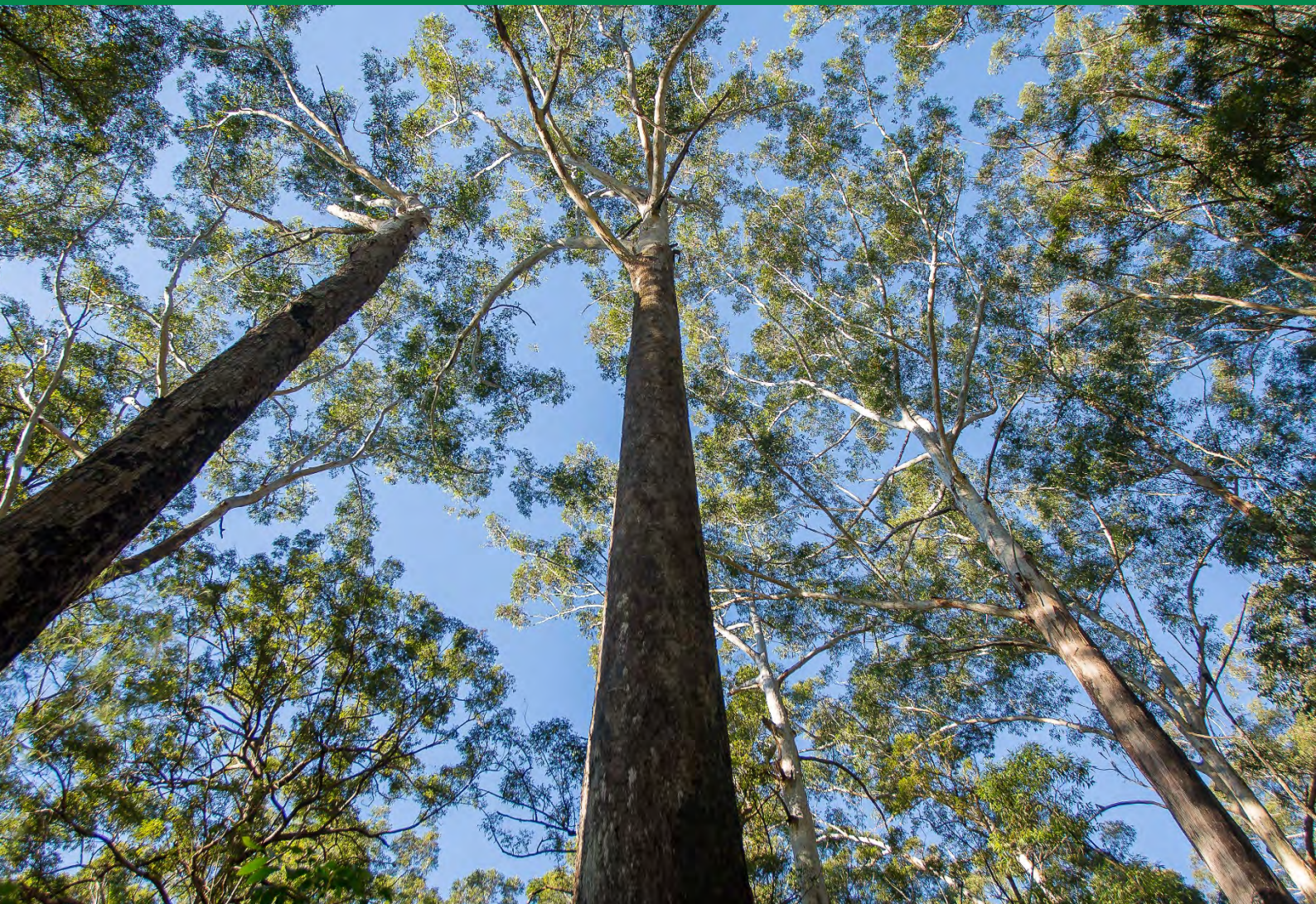


NSW Forestry Snapshot Report 2017–18



**Implementation of NSW Forest Agreements
and Integrated Forestry Operations Approvals**



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Published by:

NSW Environment Protection Authority
4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150
Locked Bag 5022, Parramatta NSW 2124
Phone: +61 2 9995 5000 (switchboard)
Phone: 131 555 (NSW only – environment information and publications requests)
Fax: +61 2 9995 5999
TTY users: phone 133 677, then ask for 131 555
Speak and listen users: phone 1300 555 727, then ask for 131 555
Email: info@epa.nsw.gov.au

Website: www.epa.nsw.gov.au

Report pollution and environmental incidents
Environment Line: 131 555 (NSW only) or info@epa.nsw.gov.au
See also www.epa.nsw.gov.au

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Overview

This is the nineteenth annual report on the implementation of the NSW Forest Agreements and Integrated Forestry Operations Approvals (IFOAs). It provides a snapshot of compliance with ecologically sustainable forest management (ESFM) conditions and the achievement of important milestones and undertakings in NSW forests.

The report also summarises key data from the national *State of the Forests Report 2018* (ABARES 2018), which reports and compares the achievement of ESFM across Australia. These summaries include data for native forest coverage, fragmentation, the proportion of native forest in protected areas and forests' role in carbon storage.

By June 2018, most milestones and undertakings set for coastal and western regions had already been completed and are described in previous reports. These ranged from short-term milestones for improving forest management to the establishment of long-term plans, frameworks and reviews. Some milestones and undertakings remain ongoing or are no longer required.

At 30 June 2018, a relatively small number of milestones and undertakings are still to be completed:

- five are awaiting finalisation of the Coastal IFOA remake (to be completed in the next reporting period)
- 11 are in progress, including:
 - five management plans or compliance methodologies that will be considered as part of the five-year statutory reviews of the three western IFOAs in 2019
 - two monitoring plans that will be considered as part of the development of a cross-tenure forest monitoring and improvement program (commencing in 2019) – in the interim, Forestry Corporation of NSW is acting in accordance with draft plans
 - five milestones have been reprioritised and no progress has been reported
- the remainder were not due in the reporting period.

Measures of ecologically sustainable forest management need to be carefully monitored. These include rates of sustainable harvesting, regeneration, regulation, Aboriginal management, tourism and biodiversity conservation outcomes.

This report finds timber harvesting has been maintained at or below permissible volumes and quantities approved under the IFOAs. There were no significant changes in the harvesting of non-wood forest products. Forestry Corporation regeneration surveys found 77% of survey plots were successfully regenerated with commercial species. This is above the 65% regeneration threshold which the Corporation considers adequate for commercial species. Forestry Corporation surveys found low levels of pests and disease in softwood plantations and the hardwood estate.

The 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 during this period focused on high-risk operations. These included the selection and protection of hollow-bearing and recruitment trees, koala habitat, stream and soil protection, forest structure and exclusion zones to protect threatened species and ecological communities. The EPA visited 21 operations in state forests which resulted in Forestry Corporation being issued:

- warning letters for two operations
- official cautions for five operations
- a clean-up notice for one operation
- advisory letters for eight operations.

The Forestry Corporation was convicted of an offence for not complying with the IFOA in Glenbog State Forest and fined \$8,000 by the Land and Environment Court. Forestry Corporation was also acquitted of an offence in Badja State Forest.

The *NSW Forestry Industry Roadmap* is the NSW Government's plan for sustainable forest management into the future. Several regulatory reform actions were progressed during 2017–18:

- Finalisation of the combined 10- and 15-year review of the Regional Forest Agreements (RFAs), including a joint NSW and Australian government response to the recommendation of the appointed independent reviewer – These bilateral agreements between the Australian Government and four state governments provide 20-year plans for the sustainable management and conservation of Australia's native forests and are due to be renewed in the next reporting period.
- Finalisation of legislative reforms to how native forestry is regulated on public and private land – The *Forestry Legislation Amendment Act 2018* was passed by NSW Parliament in June 2018 and comes into effect in the next reporting period. The Act delivers stronger penalties and a broader suite of regulatory tools for regulating the industry; allows the EPA to adaptively manage the IFOAs by enabling them to adopt protocols made by the EPA from time to time; and transfers private native forestry approval responsibilities to Local Land Services.
- public consultation on a draft coastal IFOA, including the release of related reports and advice prepared by the Natural Resources Commission.

Visitor surveys found continued high levels of satisfaction with recreational facilities in national parks and state forests.

Hundreds of Aboriginal people across the state participated in cultural activities, training and joint management of national parks and state forests. A new formal consultation and land management agreement (Indigenous Land Use Agreement) was established with the Western Bundjalung People this year.

Biodiversity conservation highlights this year included the addition of 2,877 hectares of land to 17 reserves, including one new reserve.

Introduction

This is the nineteenth annual report on the implementation of the NSW Forest Agreements (FAs) and integrated forestry operations approvals (IFOAs), prepared under Section 69H of the *Forestry Act 2012*. It reports on compliance with ecologically sustainable forest management (ESFM) conditions, and achievement of important milestones and undertakings in NSW coastal forest regions. It also reports on timber harvesting, compliance and the achievement of milestones and undertakings for the Riverina Red Gum, Brigalow-Nandewar and South Western Cypress regions (western NSW IFOAs).

NSW Forest Agreements and IFOAs provide a strategic and operational framework to manage public forests in NSW, with the overall objective of achieving forest conservation and ESFM.

Implementation of the agreements and approvals is a cooperative undertaking between the following NSW Government agencies and a state-owned corporation, who have all contributed to this report:

- Department of Planning, Industry and Environment (DPIE), including –
 - the NSW Environment Protection Authority (EPA)
 - the National Parks and Wildlife Service (NPWS) that manages, conserves and cares for more than seven million hectares of land in national parks and reserves
 - 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 the Forestry Corporation and as FCNSW in the appendices).

The report provides a snapshot of progress for the period 1 July 2017 to 30 June 2018.

Chapter 1 provides a summary of results of monitoring important ESFM criteria and indicators for forestry areas in NSW coastal regions (and timber supply in coastal and western IFOA regions). This report adopts the *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement Regions 2016* (EPA 2017a).

Chapter 2 outlines compliance with licence conditions and other IFOA requirements in all regions.

Chapter 3 and **Appendices 1 to 4** provide information on progress of key milestones and undertakings within the Forest Agreements and IFOAs 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:

- *New South Wales State of the Environment 2018* (SoE) report (EPA 2019)
- the Forestry Corporation *Sustainability Data Report 2017–18* (FCNSW 2018b)
- 2017–18 annual reports of relevant agencies.

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)
- the *NSW Report on Native Vegetation 2014–16* (OEH 2018).

Availability of SOFR 2018, a five-yearly report, has allowed additional reporting of ecologically sustainable forest indicators compared to the previous snapshot.

What regions are reported

This document reports on four coastal forestry regions and three western NSW forest regions. These regions are mapped in Figure 1. Note that the Riverina Red Gum region overlaps with the South Western Cypress region, but they have separate IFOAs in place for their operations.

The four coastal forestry regions had NSW Forest Agreements and IFOAs in place during the reporting period:

- Upper North East (UNE)
- Lower North East (LNE)
- Eden
- Southern (including the Tumut sub-region).

The three western NSW inland forestry regions have IFOAs in place but are not covered by NSW Forest Agreements:

- Brigalow–Nandewar, including an area under a community conservation area (CCA) agreement
- Riverina Red Gum
- South Western Cypress.

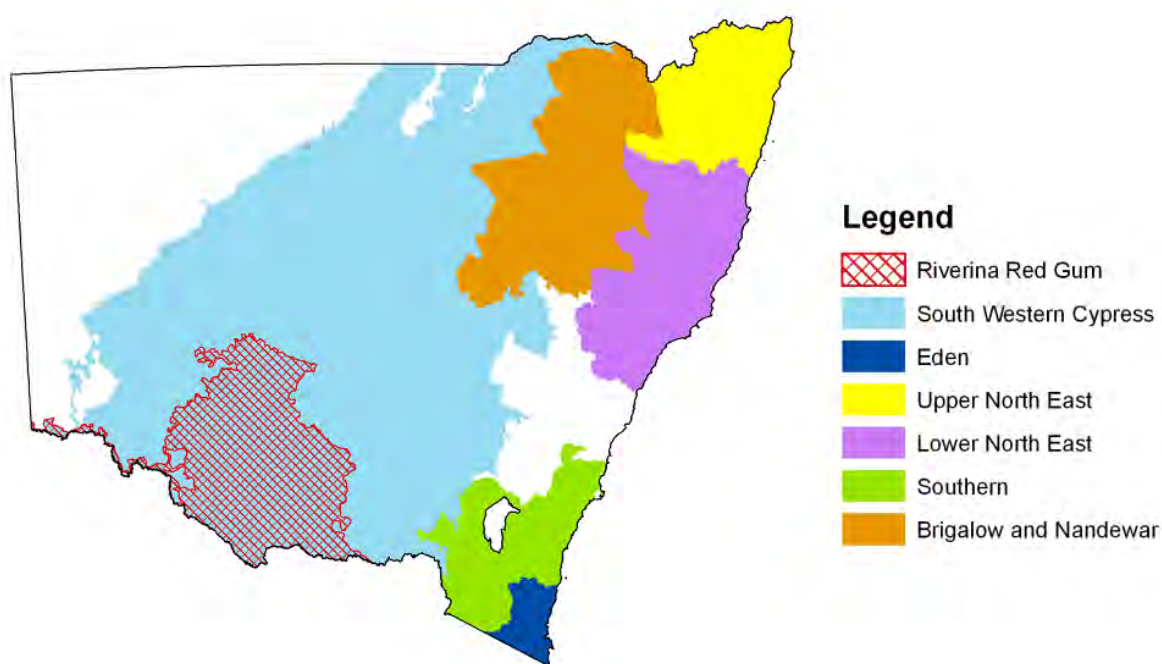


Figure 1: Integrated Forestry Operations Approval (IFOA) regions

More information about the regions is available on the EPA website.

See Appendix 5 for the start and end dates of each Agreement and IFOA.

NSW Forest Industry Roadmap

The *NSW Forestry Industry Roadmap*¹ envisions ‘a sustainably managed forest estate that underpins a dynamic, economically efficient forestry industry, which continues to support regional economies and delivers social and environmental benefits’.

The whole-of-government strategy is supported by four priority pillars:

1. delivery of 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 to ensure the forestry industry is economically viable and ecologically sustainable into the future. A number of these actions are already underway or have been completed as summarised below. More information is available on the [NSW DPI website](#)².

Roadmap implementation 2017–18

Pillar 1 – Regulatory modernisation

Regulatory modernisation involves updating regulations, licences, codes and compliance tools to ensure they keep pace with changing best practices in the regulatory, environmental and forest management field.

The Roadmap outlines commitments to:

- review and develop options for the renegotiation of the Regional Forest Agreements with the Australian Government
- review the regulatory arrangements for both public and private native forestry and develop a modern and simple regulatory framework in line with the recommendations of the Independent Biodiversity Review Panel
- review, consult on and remake a new Coastal Integrated Forestry Operations Approval (IFOA), which involves combining 12 separate licences and about 2,000 conditions into a single, streamlined, modern document
- start a review of Western (Cypress and Red Gum) Integrated Forest Operations Approvals with public consultation
- review and consult on the existing Code of Practice for private native forestry.

Regional Forest Agreements

Regional Forest Agreements (RFA) are bilateral agreements between the Australian Government and the NSW Government under the *Commonwealth Regional Forest Agreements Act 2002*. They are 20-year plans for the sustainable management and conservation of Australia’s native forests. The NSW and Australian governments are required to review the three NSW RFAs every five years to assess progress against agreed milestones and commitments to deliver ecologically sustainable forest management for NSW. These agreements provide a simplified regulatory approval process and promote certainty for forest-based industries to support the sustainable management and protection of native forests.

¹ www.dpi.nsw.gov.au/_data/assets/pdf_file/0005/711851/nsw-forestry-industry-roadmap.pdf

² www.dpi.nsw.gov.au

The RFAs are an agreed form of assessment and approval for the purposes of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. They also provide an exemption from national export legislation that affects the international sale of timber from native forests and plantations.

During 2017–18, the government finalised the 10- and 15-year reviews of the RFAs which started in the previous reporting period. The review of the NSW and Australian government progress against set milestones and commitments (NSW Government 2016) generated over 4,000 submissions. The independent reviewer Ewan Waller's report [Independent review of the report on progress with the implementation of the New South Wales Regional Forest Agreements for the second and third five-yearly reviews 2004 – 2014](#)³ was tabled in the Commonwealth Parliament on 25 June.

The report reviewed the NSW and Commonwealth implementation of the RFAs between 2004 and 2014 and set out 16 recommendations for the governments to consider in their preparation of the future RFAs. The NSW and Commonwealth governments will table the response to the independent review report in the next reporting period.

In conjunction with the review, public consultation on renewal of the RFAs started in December 2017. This included a series of regional consultation meetings in northern and southern NSW during the first quarter of 2018, with more than 300 people participating. The consultation also received over 2,000 written submissions and feedback. Targeted consultation with Aboriginal stakeholders occurred at several locations.

All feedback was collated by an independent consultant for consideration. In this reporting period, the NSW and Commonwealth governments agreed on most of the form and content for the future RFAs. The extension of the RFAs and any amendments will be finalised in the next reporting period.

New Native Forestry Bill

The [Forestry Legislation Amendment Act 2018](#)⁴ was passed by the Parliament of NSW on 27 June 2018. This legislative package amended the *Forestry Act 2012*, *Local Land Services Act 2013*, *Biodiversity Conservation Act 2016* and the *Local Land Services Regulation 2014*. The Act will commence in the next reporting period.

The new legislation increases potential penalties for not complying with IFOA requirements from \$1,100 to \$15,000, bringing these into line with what already applies to forestry operations on private lands and other regulated industries in NSW. It also provides a broader suite of regulatory tools for the EPA, such as stop work and remediation orders, which are tailored to regulating native forestry operations.

The new legislation formally transferred the responsibility for administering and regulating Private Native Forestry (PNF) into a new Part B5 of the *Local Land Services Act*. Approval and landholder extension functions for PNF were transferred from the EPA to Local Land Services while the EPA retains compliance and enforcement functions for PNF. Other minor changes integrated PNF with the new land management framework for greater consistency and application of allowable activities available to landholders.

Because Forest Agreements largely duplicate the NSW RFAs and other processes, each NSW Forest Agreement will lapse when it reaches its expiry date (see dates in Appendix 5). Any outstanding issues contained in these instruments will be rolled into other mechanisms. Letting the NSW Forest Agreements lapse will not affect environmental protections or timber supply, nor will it impact on the design, management or implementation of the IFOAs.

³ <https://www.agriculture.gov.au/forestry/policies/rfa/regions/new-south-wales#combined-second-and-third-fiveyearly-review-20042014>

⁴ <https://www.epa.nsw.gov.au/your-environment/native-forestry/forestry-regulatory-reforms>

Private Native Forestry (PNF) Review

PNF Codes set the minimum environmental standards that must apply to forestry operations on private land to ensure achievement of ESFM. They include forest management requirements and specific protections for important ecosystems, plants, animals and streams.

The Department of Planning, Industry and Environment (DPIE) has begun scoping a review of the four PNF Codes of Practice, including the rules and regulations that govern private native forestry, the authorisation process and systems, and training and advice services, to ensure they are consistent with recent forestry and land management reforms.

Local Land Services is leading the review, in collaboration with the Department of Primary Industries and the EPA. Terms of Reference inviting public feedback will be released in the next reporting period. Information on the progress of the PNF Review is on the [Local Land Services website](#)⁵.

Coastal IFOAs

IFOAs integrate the environmental planning and assessment, environment and water protection and threatened species conservation regulatory requirements for forestry operations on State forests and other Crown-timber lands. A remake of the four coastal IFOAs has been in progress since February 2014. The remake aims to reduce complexity, recognise innovations in best regulatory practice and incorporate advances in technology.

In May 2018, a draft Coastal IFOA was released with an eight-week public consultation period. The EPA, DPI, Natural Resources Commission (NRC) and Forestry Corporation completed a series of stakeholder information briefings with key industry and environment stakeholders in Sydney and regional centres. A comprehensive 'Have your say' website provided fact sheets, narrated presentations, videos and case studies and extensive questions and answers for the general public.

A total of 3,148 submissions were received via email, post and the 'Have your say' website. Of the total, 419 were unique individual and peak group submissions and 2,729 were campaign submissions.

The government remains committed to the Coastal IFOA meeting the twin commitments of safeguarding environmental values and no change in wood supply. To this effect, the NSW Government announced in May 2018, a proposal to remap of old growth forest in northern NSW using modern mapping technology. The NRC were engaged under a Terms of Reference to start work in the next reporting period.

The finalisation of the Coastal IFOA is expected in November 2018, following consideration of public feedback.

Pillar 2 – Balancing supply and demand

Wood Supply Agreements (WSAs) are long-term contracts between Forestry Corporation and timber processors for the supply of timber from NSW State Forests. As outlined in the Roadmap, 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. A government-commissioned independent review of current coastal wood supply agreements, conducted by Australian National University Enterprises in 2017, is being used to inform policy decisions and other WSA negotiations.

See page 39 for details of government investment in plantations during the reporting period.

⁵ <https://www.lls.nsw.gov.au/sustainable-land-management/pnforestry>

Pillar 3 – Community understanding and confidence

NSW Forest Industries Taskforce

The NSW Forest Industries Taskforce plays 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. The taskforce represents key sectors of the forestry industry and provides timely and comprehensive advice to the NSW Government.

During the reporting period the taskforce was co-chaired by the Minister for Lands and Forestry Paul Toole and the Hon Rick Colless MLC, Parliamentary Secretary for Natural Resources, and had 15 members representing key parts of the industry. DPI provides secretariat support to the taskforce.

Sectors represented by the taskforce include:

- Forestry Corporation of NSW
- Timber NSW
- Australian Forests Products Association
- Australian Forest Contractors Association
- the Institute of Foresters of Australia
- VISY
- Timber Communities Australia
- the Australian Forest Growers
- independent forest consultancy companies.

The taskforce provides valuable advice and assists in guidance related to the implementation of the *NSW Forestry Industry Roadmap*. It has identified key strategic issues to reposition the industry so that it may more effectively contribute to the goals and targets of the NSW State Priorities.

The taskforce has prepared a wide range of information papers for the NSW Government's consideration. These include timber resource sustainability, native forest management, forests and the carbon economy and forestry regulation. The taskforce also identifies opportunities and challenges facing the plantation sector, renewable biomass energy and the role of government in supporting the industry and koala management.

The taskforce is currently developing papers dealing with private native forestry, the use of forest harvesting residues, industry productivity and community education. It also provides guidance to DPI's forestry research projects through an advisory group.

Research and development

DPIE undertakes research and development activities relevant to the sustainability of the native forest industry.

With the release of the draft Coastal IFOA for public consultation, the NSW Government announced that a cross-tenure statewide forest monitoring and improvement program would be funded to improve the evidence base for long-term forest management decisions. This will include targeted research and trend monitoring, as well as projects to test the effectiveness of the IFOAs and the delivery of NSW commitments to ESFM under the RFAs. The NRC will independently oversee this program with support from relevant entities and independent experts. Consultation on the design of the program will occur in the next reporting period. See page 20 for more details.

The DPI Forest Science team provides forest research services that underpin the sustainable use of native forests and productive plantations in NSW. The team has extensive technical expertise and capability in field-based research, biometrics, spatial modelling, GIS and cost-benefit analysis. DPI Forestry provides research and development services to the forestry sector and stakeholders, including contracted research projects that assist

Forestry Corporation in its management of publicly-owned State forest. The team also works with organisations with an environmental and/or forestry socio-economic focus.

DPI Forest Science has an ongoing suite of research projects related to:

- ecology and sustainability
- resource assessment
- health and biosecurity
- carbon, wood products and bio-energy.

Recent examples of research include:

- the [impacts of thinning cypress](#)⁶ on biodiversity
- the status of koalas in north east forests – see case study page 19.

Pillar 4 – Industry innovation and new markets

A sustainable timber industry is important to many towns in regional NSW. DPI Forestry initiated the development of a business case proposal for consideration by the NSW Government to foster industry investment in innovation. The development of the Forestry Industry Innovation Fund loan scheme is to be considered in the NSW Government's 2018 budget and will be outlined in the next reporting period.

This loan fund (to be announced in October 2018) will drive new investment and innovation and position the industry to adjust and capitalise on new opportunities. The low-interest loans will be accessed for a range of projects – all aimed at helping the timber industry access new markets, drive operational efficiencies and invest in new technologies. Specific projects could include mill upgrades, developing new products or processing capabilities and initiatives to better access new domestic or international markets.

⁶ www.dpi.nsw.gov.au/forestry/science/thinning-cypress-regrowth

Section 1:
**Performance
indicators**

1. Snapshot of ecologically sustainable forest management

Ecologically sustainable forest management (ESFM) is an internationally recognised approach that aims to maintain forests' broad range of environmental, economic, and social values for current and future generations. The NSW Forest Agreements include ESFM criteria and performance indicators that reflect these key values.

This report provides a snapshot of progress in achieving ESFM in Forest Agreement areas, including details of sustainable timber harvesting volumes and wood products.

Forest Agreements are not in place for the western regions, but the report summarises a range of undertakings made under western IFOAs and reports on timber supply and allowable limits.

More information on ESFM and the indicators is available in *Ecologically Sustainable Forest Management Criteria and Indicators for the NSW Forest Agreement Regions 2016* (EPA 2017a).

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 latest report is *State of the Forests 2018* (ABARES 2018) and NSW-related information has been accessed for this snapshot.

Biodiversity conservation

Protecting forest habitat

State of the Forests 2018 provides updates on Australia's forest area by jurisdiction. See Table 1 for the latest available NSW data at 2016. Note that this is intended for national reporting and includes all forest areas in NSW, not only forests in IFOA regions.

Table 1: NSW forest area (in 2016)

Description	Hectares ('000)
Total native forest area	19,925
Commercial plantation area	380
Other forest area*	62
Total forest area (all types)	20,368
Total land area**	80,141

Source: SOFR 2018 (ABARES 2018)

* 'Other forest' comprises mostly non-commercial plantations, planted forests of various types and non-planted forests dominated by introduced species of trees

** Forests take up 25% of the state's land area

There are 19.9 million hectares of native forest in NSW, comprising 9.4 million hectares of woodland, 9.2 million hectares of open forest, and 507,000 hectares of closed forest. Forest type is unknown for 707,000 hectares (ABARES 2018). Over 75% of native forests in NSW are eucalypt forest types. More detail is available in SOFR 2018.

State of the Forests 2018 also provides information about the proportion of forest under different types of tenure in each jurisdiction. Table 2 shows data for native forests in NSW in 2016.

Table 2: Area of NSW native forest by tenure (2016)

Tenure type	NSW (‘000 hectares)	Proportion of total NSW native forest
Leasehold forest	4,249	21.3%
Multiple-use public forest (State forests)	1,856	9.3%
National parks and nature conservation reserve	5,569	27.9%
Other Crown land	755	3.7%
Private forest	7,414	37.2%
Unresolved tenure	81	0.4%
Total	19,925	(100%)

Source: *State of the Forests Report 2018* (ABARES 2018).

Note that totals may not tally due to rounding.

Area of forest in protected area categories

Reserving a proportion of forested land in protected areas helps ensure the conservation of biodiversity. In NSW, 6.4 million hectares of public native forest is protected in a range of formal and informal categories (ABARES 2018). These 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 2012*, informal Crown reserves and areas with values protected by prescription, such as scenic protection areas and timber harvesting exclusion zones. Twenty-eight percent 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 2017–18, 2,877 hectares of land was added to 17 reserves (including one new reserve) in the national parks system in NSW. Of this, 2,249 hectares (11 reserves) fell within the Forest Agreement regions. 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.

Comprehensive, adequate and representative

Comprehensive: includes examples of regional-scale ecosystems in each bioregion

Adequate: includes sufficient levels of each ecosystem within the protected area network to provide ecological viability and maintain the integrity of populations, species and communities

Representative: includes areas at a finer scale, to encompass the variability of habitat within ecosystems

Source: DEE undated

Table 3 shows SOFR data for the area of forest in different types of CAR reserves in NSW.

Table 3: Area of native forest in the CAR reserve system on public and private land in New South Wales, by CAR reserve type

Forest area measure	Formal reserves	Informal reserves	Values protected by prescription	Private CAR reserves	Total native forest in CAR reserve system
Native forest (,000 hectares)	5,602 [*]	188 ^{**}	355 ^{**}	244	6,389
Proportion of native forest on public land ^{***}	45%	2%	3%	n/a	51%
Proportion of total native forest ^{****}	28%	1%	2%	1%	32%

Source: *State of the Forests Report 2018* (ABARES 2018).

CAR: Comprehensive, Adequate and Representative; n/a.: not applicable.

^{*} Native forest in nature conservation reserves, plus native forest in Special Protection Zones in multiple-use public forest.

^{**} Includes some native forest on other Crown land managed by the Australian Government Department of Defence.

^{***} Calculated based on NSW native forest area on public land of 12.43 million hectares.

^{****} Calculated based on NSW total native forest area of 19.93 million hectares.

Components of the CAR system

Formal reserves are publicly managed land tenures that cannot be revoked without parliamentary approval.

Informal reserves on public land are protected through administrative instruments by public agencies.

Values protected by prescription: where inclusion in formal or informal reserves is impractical, land is protected through other instruments. In NSW these include Harvest Exclusion and Special Prescription Zones in multiple-use public forest.

Private CAR reserves are areas of private land that are managed in the long term for the protection of CAR values, for example through contractual agreements.

Source: SOFR 2018

Fragmentation of native forest cover

This indicator provides information of about the loss of forest cover and the spatial configuration of that loss. Fragmentation can impact on forest-dwelling species and gene pools through changes in the connectivity of populations and the loss of species genetic variability. Less fragmentation of forest is considered to be favourable to the conservation of biodiversity.

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. Rates of clearing are reported in the [NSW Woody Vegetation Change spreadsheet 2017–18](#)⁷.

State of the Forests 2018 (ABARES 2018) provides the most recent information on forest fragmentation at national and jurisdictional scales. Table 4 shows levels of fragmentation in NSW forests with 73% of forest classed as ‘Forest

⁷ www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/reports-and-resources/reports

interior'. Forest-interior cells are native forest cells where all neighbouring cells are also forest. A higher proportion of forest-interior cells implies a forest that is relatively unfragmented.

Table 4: Native forest area by fragmentation class, by jurisdiction.

Number of neighbouring cells forested	Fragmentation class	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
		Area as a proportion of total native forest (%)								
4	Forest interior	89	73	64	74	64	75	88	66	72
3	Forest exterior	6	12	17	13	15	14	6	15	14
2	Forest exterior	3	8	11	8	11	7	3	10	8
1	Forest exterior	1.0	4	6	3	7	3	1.5	5	4
0	Forest exterior	0.3	2	3	1.3	4	0.7	0.6	3	2
Mean number of neighbouring cells forested		3.83	3.49	3.34	3.57	3.27	3.61	3.80	3.37	3.49

Source: *State of the Forests 2018* (ABARES 2018)

Higher numbers of 'neighbouring cells forested' imply less fragmentation. The cells for this analysis are the 100 m x 100 m grid cells used by the National Forest Inventory.

Totals may not tally due to rounding.

As shown in Table 5, between 2011 and 2016 the area of native forest in NSW reduced slightly, although the proportion of forest interior cells increased. This suggests a slight decrease in fragmentation with SOFR 2018 warning that with only two time points compared this may not be meaningful data.

Table 5: Change in native forest fragmentation, by jurisdiction, over the five years from 2011 to 2016

	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
Forest coverage in 2016									
Native forest area ('000 ha)	130	19,925	23,686	51,580	4,856	3,342	7,645	20,450	131,615
Areal proportion of woodland forest	29%	47%	65%	77%	93%	41%	37%	89%	69%
Mean number of neighbouring cells forested	3.83	3.49	3.34	3.57	3.27	3.61	3.80	3.37	3.49
Proportion forest interior	89%	73%	64%	74%	64%	75%	88%	66%	72%
Forest coverage in 2011									
Native forest area ('000 ha)	128	22,270	15,173	50,782	4,377	3,361	7,729	18,752	122,574
Areal proportion of woodland forest	29%	47%	51%	76%	94%	40%	36%	88%	67%
Mean number of neighbouring cells forested	3.80	3.36	3.32	3.57	3.22	3.57	3.71	3.38	3.47
Proportion forest interior	89%	68%	64%	75%	62%	74%	84%	66%	71%

Source: *State of the Forests 2018* (ABARES 2018)

The Department of Planning Industry and Environment (DPIE) continues to report on landcover change annually. The most recent data available is up to 2017–18. It includes the rates of woody vegetation change for forestry, land use, fire and clearing. The Biodiversity Conservation Trust is responsible for reporting on conservation on private land and Local Land Services reports on land management, authorisations and approvals.

Data summarising the actions by private and public land managers to conserve and manage native vegetation is available up to 2016–17 (DPIE 2019a). This includes monitoring vegetation change, compliance and enforcement, and private native forestry.

Protecting forest-dwelling species

Forest-dwelling species are species that may use forest habitat for all or part of their life cycle. 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.

Australia's State of the Forests Report 2018 summarises national state and territory reporting on forest-dwelling species for which ecological information is available from 1998 to 2016. Table 6 lists the numbers of forest-dwelling vertebrate species reported in NSW which have increased over time due to changes and improvements in species surveys.

Table 6: Number of forest-dwelling and forest-dependent vertebrate species in NSW

Taxonomic group	Forest-dwelling	Forest-dependent
Fish	134	41
Amphibians	82	32
Reptiles	212	92
Birds	344	199
Mammals	124	70
Total 2016	896	434
Total 2011	827	–
Total 2006	760	–
Total 2001	780	–
Total 1998	504	–

Source: *State of the Forests 2018* (ABARES 2018)

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. A significant proportion of this research is funded by Forestry Corporation.

Case study: Listening for koalas in north-east forests



**Brad Law from DPI Forestry Science checks a SongMeter used to detect bellows of male koalas.
Photo: Forestry Corporation**

A three-year study of koalas in the hinterland forests of north-east NSW has been conducted by DPI Forest Science with the support of the Forestry Corporation. The study collected over 14,000 hours of audio from SongMeters (acoustic recorders) installed for 7–14 nights at 171 sites across 1.7 million hectares of state forests, national parks and reserves. Based on recordings of male bellows, koalas were detected at around 60% of sites sampled.

The study found that lower rates of koala occupancy were associated with some elevations, including above approximately 800 metres, and the extent of wildfire in the last 10 years. Occupancy means a koala was recorded as present by the SongMeter. In the areas surveyed, habitat suitability was predicted to be higher at low elevations. Occupancy did not appear to be influenced by timber harvesting intensity, time since harvesting, landscape extent of harvesting or the extent of old growth forest. More information is available on the [DPI website](https://www.dpi.nsw.gov.au/forestry/science/koala-research)⁸.

Further research overseen by the NRC is being undertaken under the *NSW Koala Strategy* (see below) to assess how koalas respond to harvesting practices, particularly intensive harvesting.

⁸ <https://www.dpi.nsw.gov.au/forestry/science/koala-research>

Other government monitoring programs

In this reporting period, the Premier asked the Natural Resources Commission to independently oversee and advise on a state-wide monitoring, evaluation, reporting and improvement program for NSW forests. The Program will improve the evidence-base for decision-making for forest management across tenures and will strengthen the NSW Government's ability to strategically and adaptively manage forests over time, including state forests, national parks, private native forests and crown forested land.

The program will build on a range of existing forest monitoring, evaluation and research initiatives, including NSW's obligation to report against ESFM indicators. It will provide opportunities for coordination and partnership, and the NRC will consult the public on the design of this framework in the next reporting period.

The NSW Government maintains a comprehensive [threatened biodiversity profile search facility](#)⁹ for the public to view and contribute sighting records and profiles of species, populations and communities, including those that are forest-dwelling. Forestry Corporation also uses and contributes to this database.

NSW Koala Strategy

On 6 May 2018, the State Government released its *NSW Koala Strategy*. The strategy commits \$44.7 million to fund a range of conservation actions that will provide more habitat for koalas, support local community action, improve koala health and safety and build our knowledge on improving koala conservation. This is the biggest commitment by any state government to secure koalas in the wild. The strategy also sets out the NSW Government's longer term vision to stabilise and increase koala populations across the State.

The strategy responds to the NSW Chief Scientist and Engineer's 2016 *Independent Review into the Decline of Koala Populations in Key Areas of NSW*, which recommended a whole-of-government koala strategy for NSW. An expert advisory committee chaired by the NSW Chief Scientist and Engineer guided the strategy's development, along with extensive community and stakeholder consultation.

Actions under the NSW Koala Strategy include:

- Protecting koala habitat through new koala reserves – The strategy commits to set aside more than 20,000 hectares of state forest on the Central Coast, Southern Highlands, North Coast, Hawkesbury and Hunter with koala habitat as new koala reserves. Over 4,000 hectares of native forest with koala habitat will be transferred to the national park estate including on the Mid North Coast. This land will be actively managed to ensure prime habitat is conserved and key habitat corridors are linked to provide habitat for koalas being returned to the wild.
- Create a statewide koala habitat information base to inform koala conservation decisions – A statewide koala habitat information base with the best available data on koala habitat and koala occurrence throughout New South Wales will inform:
 - the relevant parts of the planning system including the review of *State Environmental Planning Policy – Koala Habitat (SEPP 44)*
 - future policy development to protect koalas.
- Research on koala responses to native forest harvesting – The Natural Resources Commission will deliver an independent research project to better understand how koalas are responding to regeneration harvesting on the North Coast of NSW. The project will be government funded and peer-reviewed.
- Monitoring – A statewide monitoring program in partnership with other agencies will monitor koala populations and their habitat and measure the effect of the actions in this strategy. All information collected about koalas will be publicly available through the NSW Government's Sharing and Enabling Environmental Data (SEED) portal.

⁹ www.environment.nsw.gov.au/threatenedspeciesapp



Koala eating fresh eucalypt leaves and drinking water supplied at Gunnedah Research Centre during a heatwave. Photo: John Lemon/DPIE

WildCount

WildCount is a 10-year program that uses motion-sensitive cameras to monitor animals across NPWS estates in eastern NSW. Many of the monitored parks are in Forest Agreement regions. WildCount is the broadest fauna monitoring study of its kind in Australia and one of the biggest in the world. 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.

NSW Bionet¹⁰ provides 2018 survey data, including a new record of long-nosed potoroo in Nowendoc National Park. A report on analysis of WildCount data for 2012–16 is in preparation. More information on the program is available on the WildCount [webpage](#)¹¹.

Biodiversity Indicator Program

The Biodiversity Indicator Program has been established to assess the status of biodiversity and ecological integrity in NSW, as required by the *Biodiversity Conservation Act 2016*. This work is a partnership between DPIE, CSIRO, the Australian Museum and Macquarie University. A suite of indicators has been established to report on the status and trends in biodiversity and ecological integrity. The method used to develop the indicators has been peer-reviewed and is available in a [technical report](#)¹². The first assessment of the status of NSW biodiversity and ecological integrity will become available in the NSW Biodiversity Outlook Report. Assessments will continue at recommended intervals, including contributing to the five-year review of the Biodiversity Conservation Act.

¹⁰ <http://www.bionet.nsw.gov.au>

¹¹ www.environment.nsw.gov.au/topics/animals-and-plants/surveys-monitoring-and-records/native-animal-monitoring

¹² www.environment.nsw.gov.au/research-and-publications/publications-search/measuring-biodiversity-and-ecological-integrity-in-nsw-method

Forestry Corporation monitoring programs

Forestry Corporation undertakes monitoring programs to gather data on targeted species in forestry areas. These include routine pre-harvest surveys. In 2017–18, a total of 2,188 surveys were undertaken, with 2,557 sightings of threatened species. Most sightings were of arboreal mammals such as gliders and bats, or non-raptor birds, such as honeyeaters, storks, cockatoos and parrots. Refer to Forestry Corporation’s *Sustainability Report 2017–18* for more information (FCNSW 2018b).

Maintaining the productive capacity of forests

Land available for timber production

Monitoring the productive capacity of native forests helps ensure that 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 plantations across NSW. Around half of the forest area managed by Forestry Corporation is available for timber production, with the remainder set aside in formal or informal reserves or otherwise protected areas. Forestry Corporation has Forest Management Plans (FMPs) for coastal hardwood forests and softwood plantations which outline legal and regulatory frameworks for managing these forests and demonstrate the organisation’s commitment to ESFM and to maintaining its Responsible Wood Scheme and ISO 14001 certifications.

The forests within the Western IFOA region continue to be managed under the Ecological Sustainable Forest Management Plan for the Western Region. An updated Forest Management Plan for the Western Forests of NSW was drafted during 2017–18 and is to be published in 2018–19. The plans are a summary of the Forest Management System implemented by Forestry Corporation to meet its objectives and explain how the organisation uses a land classification system called Forest Management Zoning (FMZ). This system is detailed in *Managing Our Forests Sustainably: Forest Management Zoning in NSW State Forests* (SFNSW 1999). FMZ maps and Forest Management Plans are available from the Forestry Corporation website.

Table 7 provides a description of the zone type and the number of hectares classified under each zone across all IFOAs. Table 8 shows the area of state forest in each IFOA region, while Table 9 details timber reserves on Crown land where Forestry Corporation has the right to harvest timber. These are included in the Western IFOAs.

Table 7: Forestry Corporation of NSW Defined Forest Areas* under the Australian Forestry Standard by zone classifications across all IFOAs

Zone and description	Area (hectares)
Zone 1 – Formal reserves (flora reserves)	28,291
Zone 2 – Informal reserves	299,161
Zone 3 – Protected by prescription	201,458
Zone 4 – General Management Zone (native forest available for timber production)	1,228,736
Zone 5 – Hardwood Plantations Zone	51,909
Zone 6 – Softwood Plantations Zone	182,016
Zone 7 – Non-Forestry Use Zone	6,804
Zone 8 – Areas for further assessment	460
Zone 9 - Unzoned	20,139
Total	2,018,974

* Detailed information for Defined Forest Areas is available in interactive charts on the Forestry Corporation website.

Table 8: Forestry Corporation of NSW Defined Forest Areas under the Australian Forestry Standard and timber reserves within the IFOA areas

State forests	Hardwood Forests Division	Softwood Plantations Division	Total (hectares)
Brigalow Belt South	262,759	0	262,759
Eden	152,338	43,262	195,600
Lower North East	481,294	15,022	496,316
Nandewar	12,927	1,601	14,528
Riverina Red Gum	36,776	0	36,776
South Western Cypress	148,912	0	148,912
South Coast sub-region	200,398	12,138	212,536
Tumut sub-region	67,884	143,822	211,706
Upper North East	416,635	23,207	439,842
Totals	1,779,923	239,052	2,018,975

Table 9: Timber reserves within the IFOA areas

Timber reserves by IFOA	Hardwood Forests Division
Brigalow Belt South	1,569
Nandewar	1,101
Riverina Red Gum	5,305
South - Western Cypress	100,987
South Coast Sub Region	9
Tumut Sub Region	421
Upper North East	824

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). During the reporting period, the EPA continued to regulate private native forestry under the *Native Vegetation Act 2003* and the *PNF Code of Practice*¹³ up to 29 April 2018. After this, LLS undertook PNF approval functions. The PNF Codes of Practice during this period aimed to ensure the supply of timber products at a regular rate that could be maintained indefinitely for present and future generations.

Landholders wishing to carry out forestry operations on private land are required to hold a PNF Plan. This is a legally binding agreement between a landholder and the relevant regulatory authority (now LLS) which is valid for up to 15 years. PNF Plans give landowners the security they need to make long-term forest management decisions. In August 2017, PNF Plans replaced the previous system of property vegetation plans (PVPs). Existing PVPs continue to be recognised under transitional arrangements.

¹³ www.epa.nsw.gov.au/your-environment/native-forestry/about-private-native-forestry/private-native-forestry-code-practice

Private native forestry approvals

Forestry operations within approved areas may occur on a cyclical basis at any time during the term of the approval. Only a small percentage of the total approved area will have active forestry operations occurring in the reporting period. 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 PNF Code. The code also contains provisions for retaining habitat trees and recruitment trees capable of forming hollows for habitat in the near future.

Local Land Services (LLS) assumed responsibility for the approval of PNF Plans on 30 April 2018. The EPA continues to regulate compliance and enforcement of PNF Plans and the PNF Codes of Practice. In 2017–18, a total of 31,653 hectares were approved under 253 new PNF Plans.

Table 10: Area (hectares) of private native forestry plans approved July 2013–June 2018

Forest region	2013–14	2014–15	2015–16	2016–17	2017–18
Northern NSW	35,190	24,671	41,464	33,177	24,584
Southern NSW	494	577	756	701	259
Riverina Red Gum	1,694	871	7,286	2,416	2,549
Cypress and Western Hardwood	3,521	1,837	2,155	1,892	4,261
Totals	40,899	27,956	51,661	38,186	31,653

Sources: LLS, EPA Forestry database; *NSW Report on Native Vegetation 2014–16* (OEH 2018).

Table 11: Total number of private native forestry plans approved July 2013–June 2018

Forest region	2013–14	2014–15	2015–16	2016–17	2017–18
Northern NSW	248	202	306	314	229
Southern NSW	6	7	13	11	2
River Red Gum	16	11	18	10	11
Cypress and Western Hardwood	11	2	2	3	11
Totals	281	222	339	338	253

Source: LLS, EPA Forestry database.

Additional PNF trends are reported in the *NSW Report on Native Vegetation 2014–16* (OEH 2018).

Land available in plantations

The area, age class and growing stock of native and exotic species indicate the volume of timber that plantations can supply now and into the future. This information is reported at a national level in *State of the Forests Report 2018* (ABARES 2018). Forestry Corporation's *Sustainability Report 2017–18* (FCNSW 2018b) provides information about the net stocked area of NSW plantations by age group.

New plantations approved under the *Plantations and Reafforestation Act 1999* in coastal forest areas since 2011 are listed in Table 12. For earlier data, refer to the *NSW Forest Report 2014–15* (EPA 2017c). Figures for timber volumes and other products supplied from these plantations are not routinely collected.

In addition to the coastal areas, 79 hectares of new plantations were authorised in the Murrumbidgee Catchment Management Authority (CMA) region (now Riverina Local Land Service) and 387 hectares of new plantations were authorised in the central west.

Table 12: Area (hectares) of new plantations approved under the Plantations and Reafforestation Act in coastal areas (includes state forests and private plantations)*

Year	North Coast	Hunter	South Coast
2011–12	1,998	1	18
2012–13	3,364	0	2,226
2013–14	55	73	0
2014–15	69	13	21
2015–16	423	0	604
2016–17	481	0	181
2017–18	1,404	0	1,474

* Derived from data provided by DPI and reported across previous forestry reports

Sustainable timber harvesting

Monitoring helps ensure that wood and wood products are removed from forests at levels which meet society's need for forest products each year, but do not negatively impact biodiversity or the forest's ability to function and regenerate. SOFR 2018 calculates a sustainable timber yield as: 'the volume of wood (specifically, higher-grade sawlogs) that can be removed each year from an area of forest while ensuring maintenance of the functioning of the native forest system as a whole and the supply of wood products in perpetuity' (ABARES 2018).

The coastal and western IFOAs specify the types, volumes and quantities of native forest timber products that Forestry Corporation is permitted to harvest. Actual versus specified volumes (or tonnage) harvested are reported here. The IFOAs permit annual variations to the specified volumes to accommodate changes in environmental and economic circumstances. For example, some timber products may be harvested at levels above average annual quantities if specified 20-year limits are not exceeded over the life of the IFOA. During 2017–18, harvested amounts for most regions were within the yearly permitted amount or annualised average. The only region where this was exceeded was the River Red Gum region, although the volume was still allowable as a short-term increase under the IFOA.

Compliance with sustainable forestry certifications

Forestry Corporation produces timber which is certified sustainable under the internationally recognised Responsible Wood® (Sustainable Forest Management) *AS4708:2013*, previously known as the Australian Forestry Standard. Forestry Corporation is also certified to the Environmental Management Standard *ISO14001:20015*. 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 *AS4708:2013*.

Forestry Corporation underwent independent, external recertification audits in November 2017 for its Hardwood Forests Division and December 2017 for its Softwood Plantations Division as part of maintaining its Responsible Wood and *ISO14001:20015* certifications. Both operating divisions were deemed to meet the requirements for both standards and were successfully recertified. A small number of minor non-conformances with the standards were identified and action plans accepted by the auditors. These will be checked by the auditors as part of subsequent audits to ensure they have been resolved. Summary audit reports are available from the [Forestry Corporation website](https://www.forestrycorporation.com.au/sustainability/certification).¹⁴

¹⁴ <https://www.forestrycorporation.com.au/sustainability/certification>

Timber harvested in coastal IFOA areas

Figure 2 depicts volumes of logs harvested as a percentage of the volumes specified in the IFOAs. For consistency with earlier reports, the figure excludes poles, piles and girders (which are also specified in the IFOAs). Detailed data for the volumes and quantities of timber extracted from the coastal regions, including poles, piles and girders, are shown in Table 13 and described for each region on the next two pages. The coastal IFOAs do not cover operations conducted in softwood plantations.

Volumes of logs increased from the previous year in the Lower North East (LNE) and Southern regions and decreased in the Upper North East (UNE) and Eden regions. Volumes of pulp increased in Eden. These trends were within natural variability of timber supply and demand, and there were no relevant commercial, environmental or policy changes.

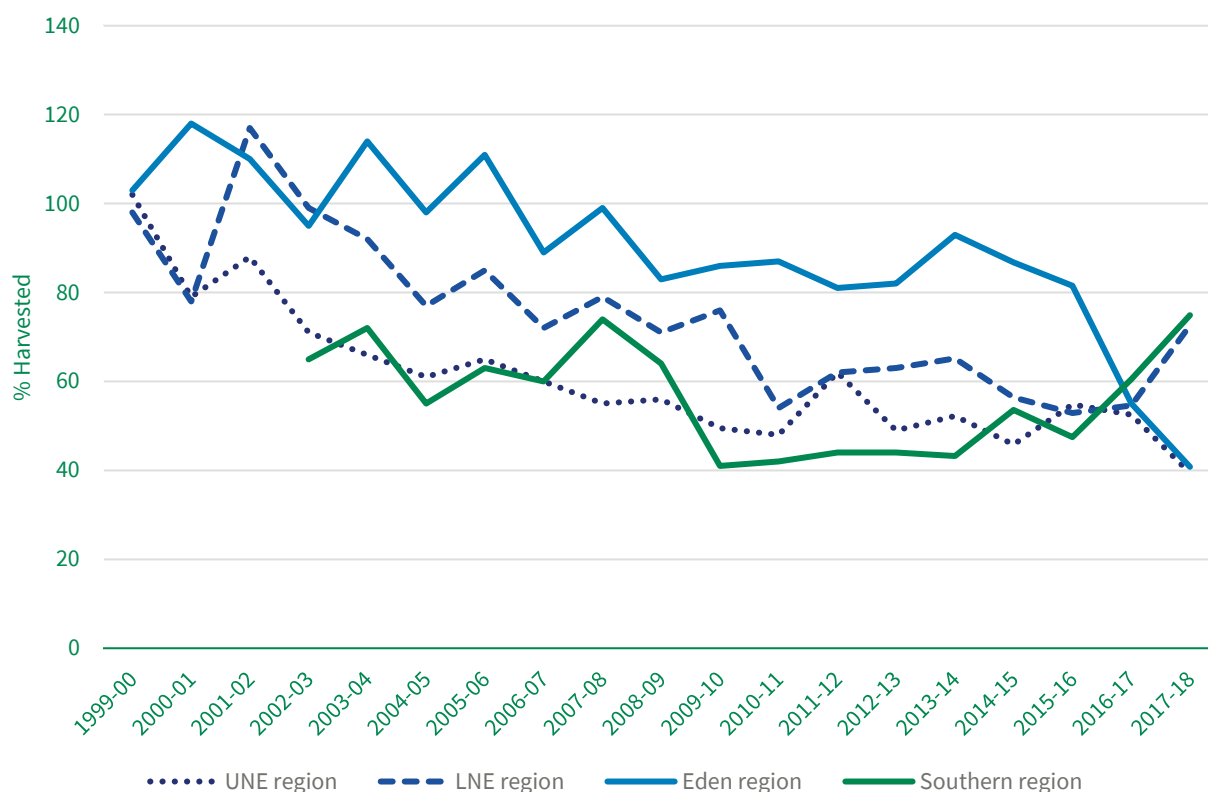


Figure 2: Log volumes harvested as a percentage of volumes specified in IFOAs – all coastal regions

Source: Forestry Corporation data

Quota sawlogs harvested are from native forest and hardwood plantations as permitted under the Forest Agreements.

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

In the UNE region, 42,933 cubic metres of high-quality large sawlogs and large veneer logs were harvested from native and hardwood plantation forests during 2017–18. This represents 39.3% of the permitted annual volume (109,000 m³) and is a decrease from the amount harvested in the previous year (57,223 m³). The Forestry Corporation also supplied 3,961 m³ of poles, piles and girders.

In the LNE region, 116,239 cubic metres of high-quality large sawlogs and large veneer logs were harvested from native and hardwood plantation forests, representing 72.6% of the permitted annual volume (160,000 m³). This is an increase from the amount harvested in the previous year (87,371 m³). Forestry Corporation also supplied 15,295 m³ of poles, piles and girders.

In the Eden region, 9,374 cubic metres of high-quality large sawlogs were harvested from native forests, representing 40.7% of the permitted annual volume (23,000 m³). This is a decrease from the amount harvested in the previous year (12,650 m³). No piles, poles or girders were supplied from the Eden region.

In 2017–18, a total of 232,997 tonnes of pulp grade timber was harvested in this region, representing 67.5% of the permitted annual volume (345,000 tonnes). This was a decrease from the previous year (248,592 tonnes or 72% of permitted annual volume). The volume of pulp grade timber harvested from the Eden region since 1999–2000 remains below the specified annual volume, as shown in Figure 3.

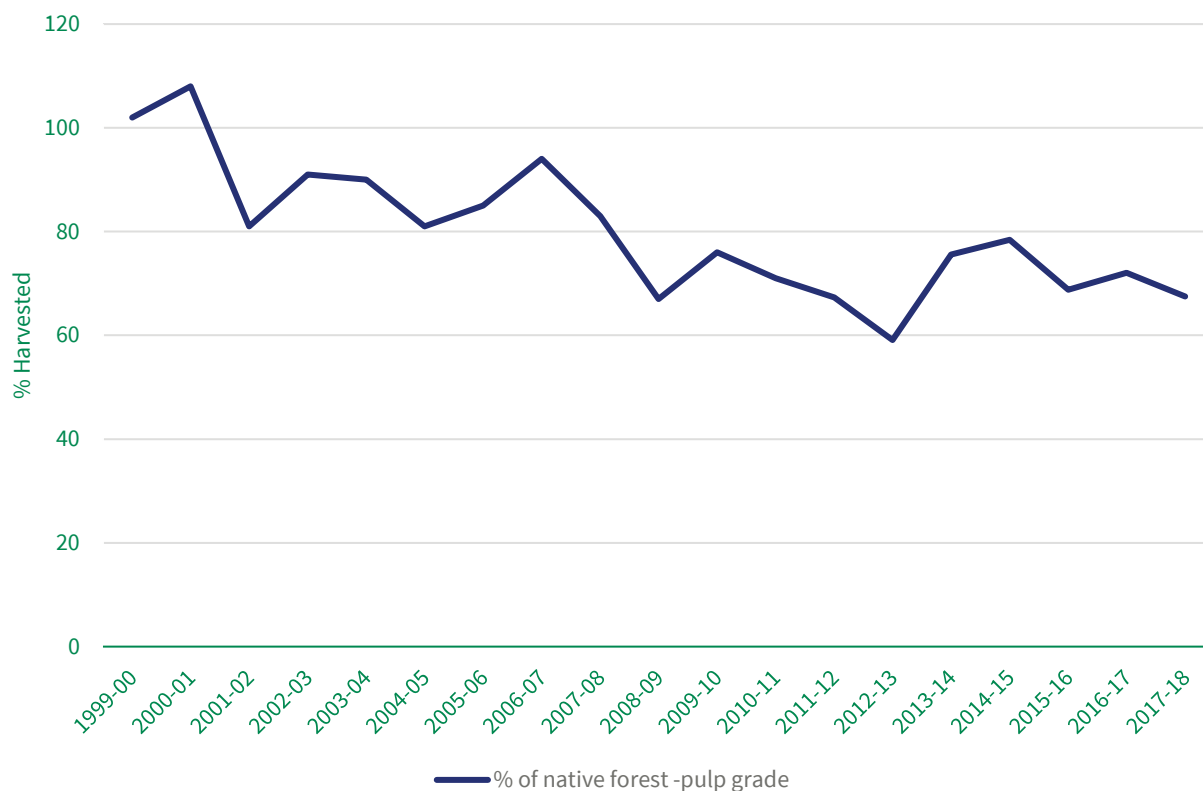


Figure 3: Pulp grade timber harvested as a percentage of the permitted volume specified in the Eden IFOA

Source: Forestry Corporation data

Pulp quotas are not specified in other IFOAs

In Southern region 72,278 cubic metres of high-quality large sawlogs and veneer logs were harvested. This represents 74.8% 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 an increase of 23.8% from the previous year. The quantities by sub-region are:

- South Coast sub-region: 43,473 cubic metres (89.6% of permitted volume), an increase from the previous year (37,335 m³).
- Tumut sub-region: 28,806 cubic metres (60% of permitted volume), an increase from the previous year (21,018 m³).

No piles, poles or girders were harvested from Southern region this year.

Volumes and quantities not specified in the Forest Agreements and IFOAs

The Forest Agreements do not set volume limits for certain timber products which form part of integrated harvesting operations, including low quality sawlogs, firewood and landscape timbers.

In 2017–18, a total of 358,982 cubic metres of non-specified (unregulated) logs were harvested from Forestry Corporation native forests and hardwood plantations across all coastal Forest Agreement and IFOA regions. This is slightly more than in 2016–17, when 353,999 m³ were harvested. This year, 155,393 tonnes of non-specified pulp grade timber were produced (see Table 13 for further detail). This is a 94% increase from the previous year. The increase is mainly attributed to the amount of hardwood pulp harvested from plantations in UNE.

Table 13: Quantities (m³) of native forest and hardwood plantation timber products – coastal regions (2017–18)

Log type	Southern region		Eden region		LNE region		UNE region	
	South Coast sub-region	Tumut sub-region	Native forest	Hardwood plantation	Native forest	Hardwood plantation	Native forest	Hardwood plantation
Large veneer*	0	0	0	0	5,004	1,463	1,014	148
High quality large sawlogs*	43,473	28,806	9,374	0	89,906	9,996	35,931	1,053
Small veneer	6,366	0	0	0	0	685	0	625
High quality small sawlogs	19,461	119	0	0	28,136	6,212	25,783	448
Low quality sawlogs	0	13,663	0	0	98,069	28,031	53,084	1,999
Large poles/piles and girders	0	0	0	0	8,242	1,629	3,757	131
Small poles/piles and girders	0	0	0	0	12,194	3,100	3,961	216
Biomass	0	0	0	0	0	685	0	625
Firewood/Misc.	38,090	2,808	9,904	0	9,594	295	3,358	0
Sub-total	107,389	45,396	19,279	0	246,141	50,633	125,874	5,096
Pulp grade and chipwood**	52,381	6,701	232,997	0	25,448	18,850	84	51,930

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

* The IFOAs specify quotas for these products.

** Figures include both regulated pulp (Eden region) and unregulated pulp. Only the Eden Forest Agreement and IFOA set pulp grade timber quota requirements. Pulp timber in other regions is reported as 'non-specified'.

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 for the period 1 July 2013 to 30 June 2019. Figure 4 reports on the volume of sawlogs and residue from these operations in the Riverina Red Gum region between 2011–12 and 2017–18.

During 2017–18, a total of 3,981 cubic metres of high-quality large sawlogs were harvested from state forests and western lands lease areas. This was below the annualised volume (4,413 m³) and within the 20-year limit

(90,253 m³). Since 2011, 33,839 m³ of high-quality sawlogs have been harvested, accounting for 37% of the allowed 20-year volume (over seven years).

As shown in Figure 4, a total of 5,412 cubic metres of low-quality sawlogs and 24,490 tonnes of residue grade log were generated in the course of producing the high-quality sawlogs. A further 36,392 tonnes of residue were harvested from western lands lease areas.

A total of 41,559 tonnes of residue grade logs were harvested from early thinning operations in Riverina state forests. While this is above the annualised average (35,370 tonnes), the cumulative quantity harvested during the period remains within the 20-year cap (212,220 tonnes).

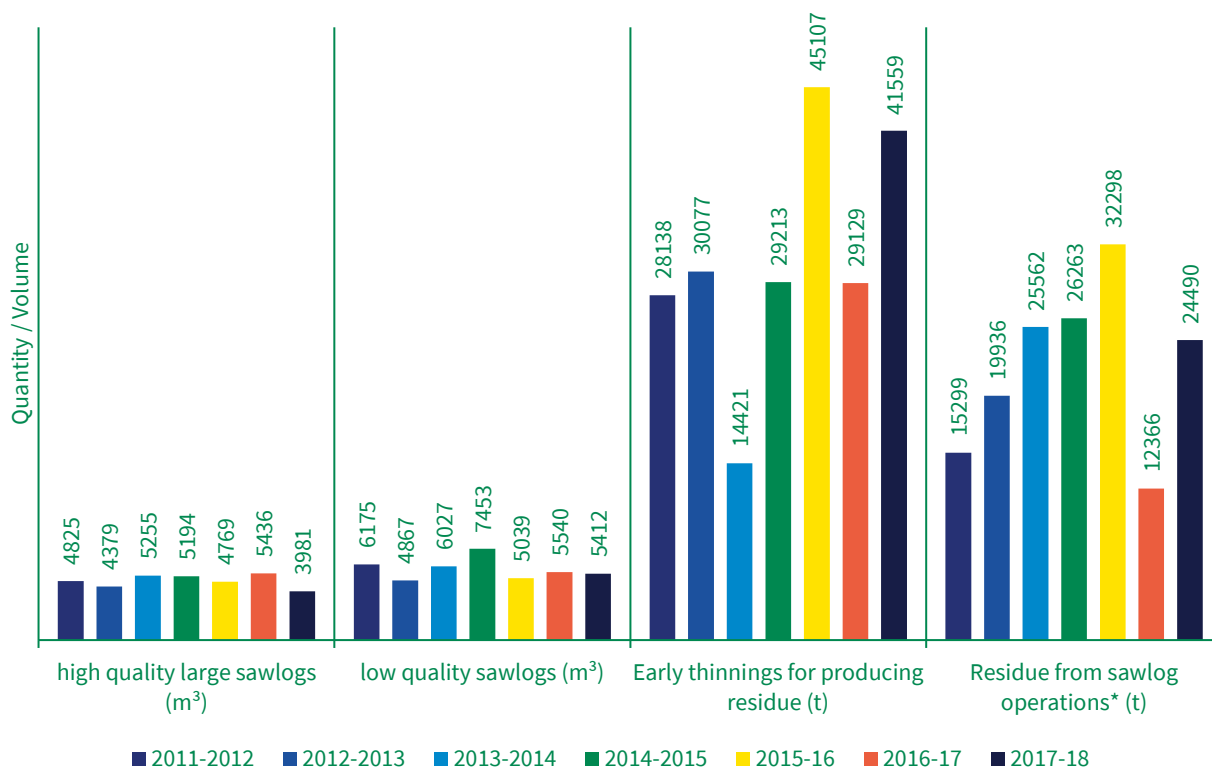


Figure 4: Volume (m³) of high-quality large sawlogs and low-quality sawlogs and quantity (t) of early thinnings obtained from the Riverina Red Gum region since the IFOA commenced

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 5 shows the volumes of cypress and ironbark sawlogs and fencing, and quantity of firewood obtained from this region in 2017–18 compared with previous years. Figure 6 shows trends in volume harvested, compared to the quota.

In 2017–18, a total of 10,394 cubic metres of cypress logs were harvested in the region, representing 25% of the annual average permitted volume (41,000 m³). A total of 1,028 m³ of ironbark sawlog and fencing timber were harvested, representing 50% of the specified annual limit (2,050 m³) and 2,399 tonnes of firewood were harvested, representing 25% of the average yearly allocation (9,800 tonnes).

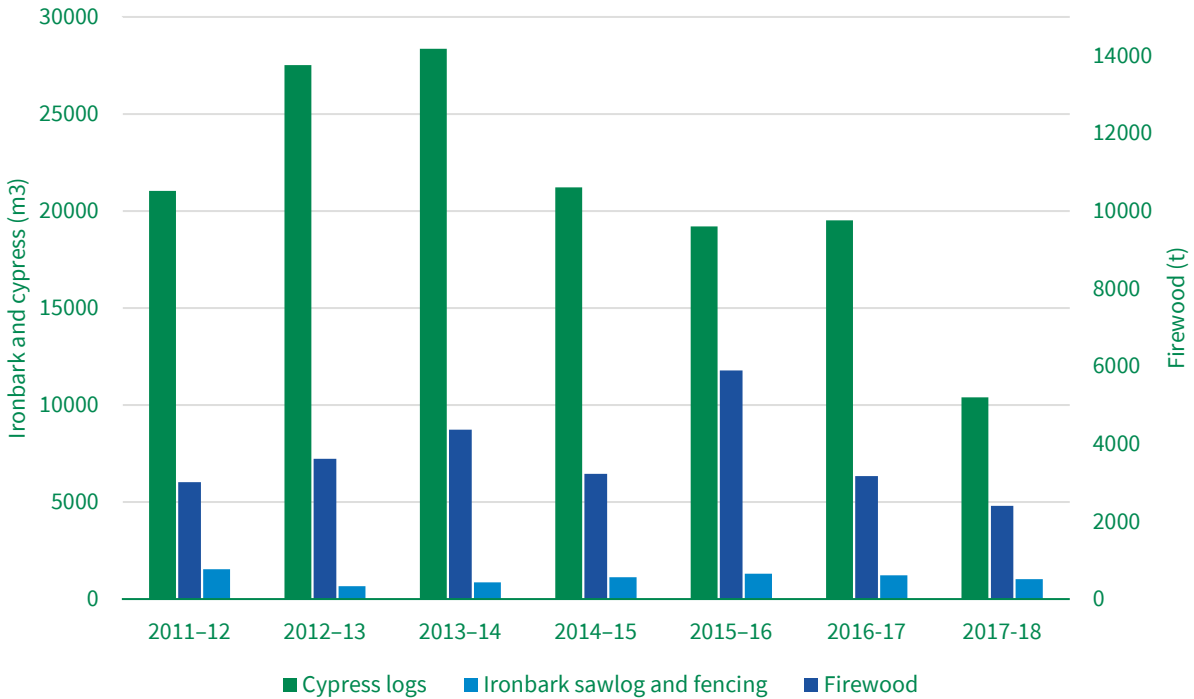


Figure 5: Volumes (m³) of cypress sawlogs and ironbark sawlogs and fencing and quantity (t) of firewood obtained from the Brigalow and Nandewar region since the IFOA commenced

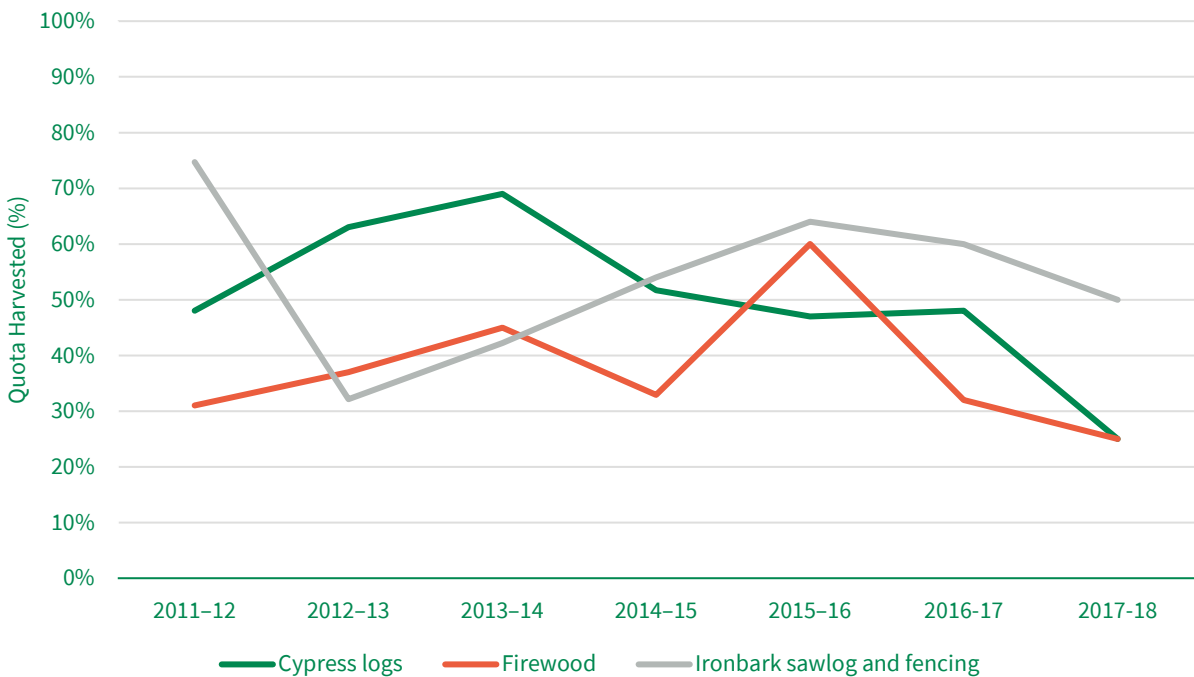


Figure 6: Trends in the percentage of allowable volume over time in the Brigalow–Nandewar region

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 7 shows the volumes and quantities of timber, residue and other products obtained from the South Western Cypress region in 2017–18 compared with previous years.

The allowable volume of cypress logs from south of the Mitchell Highway is no more than 328,895 cubic metres for the 14.5-year period that commenced 1 July 2011.

During 2017–18, a total of 20,773 cubic metres of cypress logs were harvested from **south** of the Mitchell Highway, representing 93% of the maximum permitted annual volume (22,390 m³). **North** of the Mitchell Highway, 274 m³ of cypress log 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 5,464 tonnes 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.

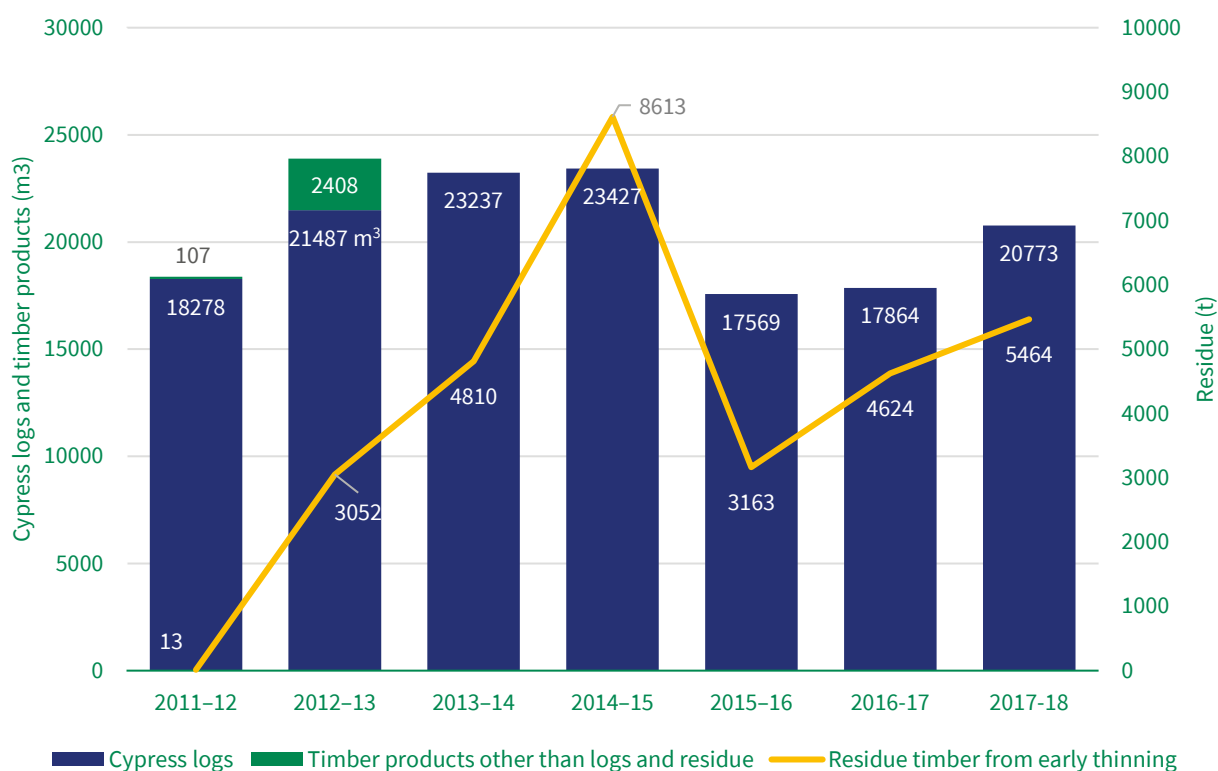


Figure 7: Volume (m³) of cypress sawlogs, timber products other than logs and residue and quantity (t) of residue timber from early thinning obtained from the South Western Cypress region

Note that zero (0) quantities of other timber products were harvested from 2013–14 to 2015–16.

Table 14 summarises timber products obtained from state forests and western lands leases covered by the three western IFOAs in 2017–18.

Table 14: Timber and forest products harvested from western IFOA regions in 2017–18

Product	Volume (m ³) or quantity (t)		Estimated net harvest area (ha)
Riverina Red Gum region			
High quality sawlog	3,981 m ³		1,073
Low quality sawlog	5,412 m ³		
Residue	24,490 t		
Early thinning	41,559 t		822
Residue (western lands leases)	36,392 t		1,781
Firewood permits issued	Number	Quantity	n/a*
	555	1,419 t	
Brigalow–Nandewar region			
Cypress log	10,394 m ³		4,023
Ironbark log	1,028 m ³		745
Timber products (including ironbark and cypress fencing)	0		0
Firewood (not including permits under the <i>Forestry Act 1916</i>)	2,399 t		Undertaken in conjunction with cypress sawlog and integrated residue operations
Firewood permits issued – see IFOA cl. 82	Number	Quantity	n/a
	442	517 t	
Didgeridoo	0		0
Broombush	302 t		n/a
South Western Cypress region			
Cypress log–south of Mitchell Highway	20,773 m ³		2,018
Cypress log–north of Mitchell Highway	274		108
Cypress log (western lands leases)	0		0
Residue	5,464 t		974
Timber products	0		n/a
Didgeridoo	0		n/a
Firewood permits issued – see IFOA cl. 82	Number	Quantity	n/a
	109	134 t	

Source: Forestry Corporation

* n/a – 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.

Table 15 shows recent trends in selected non-wood forest products and services in state forests across all forestry regions.

Table 15: Recent trends in selected non-wood forest products from NSW state forests compared to baseline

Selected forest products	2013–14	2014–15	2015–16	2016–17	2017–18
Apiculture (sites)	3,919	4,015	3,937	4,130	4,167
Broombush (tonnes)	2,396	4,582	2,032	1,597	785
Charcoal (tonnes)	1,763	1,124	1,664	1,016	639
Telecommunications (sites)	131	138	141	141	143
Firewood–non-commercial (tonnes)*	9,053	10,150	10,101	9,783	3,971
Gravel/sand/rock (tonnes)	66,232	37,696	67,167	95,162	82,981
Grazing (hectares)	288,176	284,748	219,702	297,544	332,987

Sources: Forestry Corporation sustainability reporting (FCNSW 2016b, 2017b, 2018b) and *A Draft Report on Progress with Implementation of the NSW Regional Forest Agreements (RFAs)* (EPA 2009)

* Some values have been derived using conversion factors due to multiple units of measure used.

Fluctuations in the supply of firewood are not unusual. The reported amounts of gravel, sand and rock are dispersed across the estate. Most of this material is used in road maintenance and fluctuations in the amounts reported reflect changes in demand.

Table 16 shows trends in the total area Forestry Corporation has authorised for grazing in state forests over the past four years.

Table 16: Information about grazing operations in IFOA regions

IFOA area	Grazing area (ha) 2014–15	Grazing area (ha) 2015–16	Grazing area (ha) 2016–17	Grazing area (ha) 2017–18
Brigalow–Nandewar	4,660	4,204	4,163	5,653
South Western Cypress	43,181	55,935	38,410	35,521
Riverina Red Gum	2,569	3,386	3,368	3,666
Coastal IFOAs	234,338	156,177	251,603	288,147

Source: Forestry Corporation

Forest regeneration

State forests are managed sustainably, ensuring the same forests continually produce timber and regrow in perpetuity. Re-establishment of forests after harvesting is essential for maintaining forest health, productive capacity and a requirement under the Responsible Wood® Standard under which Forestry Corporation operates.

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 and establishment of plantations is effective and timely. Techniques vary across regions and conditions. In 2017–18, a total of 8,033 hectares of forest in the north coast region were harvested using various silvicultural prescriptions. For the south coast this figure was 5,365 hectares.

An assessment of survey plots during the period found 76% were effectively stocked with commercial species, including regenerated seedlings and trees retained after harvesting (Table 17). A regeneration threshold of 65% of assessed plots in any given harvest area is considered adequate stocking. Areas that do not meet the 65% threshold are listed for further assessment and potential remedial actions. Non-commercial native species that naturally regenerate in the forest after harvesting are not counted in regeneration surveys but remain important for forest biodiversity. Forestry Corporation uses a sampling methodology to assess regeneration success and is planning to move towards remote assessments using drones to allow census recording of regeneration success.

More information is available in Forestry Corporation’s sustainability reporting (FCNSW 2018b).

Table 17: Percentage of survey plots stocked with commercial species in coastal IFOA areas

Year*	Percentage of plots stocked
2012–13	69
2013–14	78
2014–15	81
2015–16	91
2016–17	77
2017–18	76

Source: Forestry Corporation

* Year corresponds to the period assessed, which is between two to five years after the harvesting event.

Plantations

No new (first rotation) plantations were established on previously cleared land during the 2017–18 planting season. The Forestry Corporation reports planting seasons by calendar year. In 2017, a total of 8,136 hectares of the softwood plantation forests were re-established, along with 342 hectares of hardwood plantations.

Effective re-establishment has occurred if more than 80% of seedlings survive after one year. In 2017, no hardwood plantations and only 2% of softwood plantations required restocking.

Maintaining ecosystem health and vitality

Measuring the scale and impact of pest animals, weeds, disease and insect infestations in forests helps inform the development of adequate management responses. *NSW State of the Environment 2018* (EPA 2019) provides the most recent overview of pest threats, monitoring and control strategies in NSW.

Monitoring and control of pests and disease

Natural Resources Commission (NRC) reviews in 2014 and 2016 recommended a strategic and coordinated approach to managing weeds and pest animals. The *Biosecurity Act 2015* and associated regulations, which commenced in July 2017, support this approach.

Other NSW Government initiatives during the reporting period were:

- formation of the State Pest Animal Committee
- establishment of 11 Regional Pest Animal Committees which include representatives from Forestry Corporation where necessary – The committees started drafting Regional Strategic Pest Animal Management Plans which will guide resource allocation and investment across the state and provide a consistent basis for regional planning and delivery.
- research by DPI vertebrate pest and weeds research units into improved monitoring and management tools to help support implementation of the regional weed and pest animal plans
- the Vertebrate Pest Management Course (held twice a year) which is accessed by Forestry Corporation staff to enhance their skills in strategic pest animal management
- collection of biosecurity mapping data across NSW to map weed occurrence and guide compliance activities.

Saving our Species pest management actions and strategies

The Saving our Species (SoS) 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.

Forestry Corporation surveys

Forestry Corporation conducts annual surveys to determine the impacts of disease and pests on the health of the timber plantations it manages. In 2017–18, surveys were conducted on most of the softwood plantations and around 33% of the hardwood estate. Overall, the surveys found low levels of pests and diseases that affect plantation health. The main issues of concern included:

- softwood plantation estate – slight increases in the area affected by sirenix wood wasp and some evidence of low-level drought damage (needle browning or burning)
- hardwood plantation estate – a slight increase in bell miner associated dieback (BMAD) and damage from herbivorous insects such as Christmas beetles and weevils.

In 2017–18, Forestry Corporation spent around \$2.4 million on pest animal and weed control in areas under its management. Further details are available in Forestry Corporation’s *Sustainability Report 2017–18* (FCNSW 2018b).

Pest monitoring and control on NPWS estate

Over 1,000 critical pest and weed management activities were implemented and reported on the NPWS estate in 2017–18. More than 75% of the effort was recorded against critical programs, primarily for threatened species conservation and protection of neighbouring agricultural enterprises. During this period, over 39,000 pest animals were removed and more than 118,000 dog and fox baits laid.

Impact of fire

Fire is an important part of many forest ecosystems in Australia and may have positive or negative impacts on forest health and vitality.

The NPWS Enhanced Bushfire Management Program has significantly increased the area treated for bushfire hazard reduction since the inception of the program. In 2017–18, NPWS treated 96,987 hectares, covering 1,398 ha of mechanical works and 95,589 ha of prescribed burning. This represents 72% of the NPWS annual target of 135,000 ha, which is calculated on a rolling five-year average to take account of variability from season to season.

In 2017–18, unseasonal weather conditions meant that it was not safe to burn in many locations across the state. In addition to the hazard reduction efforts, there were 487 wildfires on the park estate, affecting an area of 121,835 hectares.

During the reporting period Forestry Corporation treated 26,493 hectares, of which 5,938 hectares were pre- and post-harvest burns. When these burns are excluded, Forestry Corporation achieved 69% of the annual target set by the Rural Fire Service. Wildfires impacted 32,193 hectares of area managed by Forestry Corporation.

Forestry Corporation carries out fuel reduction activities in more than 350,000 hectares of State forest, which is around 17% of the State forest estate. This includes around 20,000 hectares of hazard reduction burning and more than 350,000 hectares used for grazing. Forestry Corporation also works with Aboriginal communities to carry out low-intensity burns using traditional methods in State forests.

Both Forestry Corporation and NPWS are formal firefighting authorities and work in close collaboration with the Rural Fire Service to manage fire risk and contribute to the State’s combined firefighting response. This includes employing and training firefighting staff and maintaining large networks of roads and fire trails, firefighting fleet and equipment, and a network of fire towers that allow for rapid detection and response to new ignitions. During 2017–18 both agencies assisted in the control of a significant number of fires outside of the areas under their management.

State of the Forests Report 2018 (ABARES 2018) provides details on the extent of forest burnt by planned and unplanned fire across all jurisdictions. Table 18 summarises the report’s findings for NSW over a five-year period from 2011 to 2016. This represents only a small portion (1.7%) of the area of all forest fires nationwide.

Table 18: Total NSW forest area burnt by planned and unplanned fire – 2011–16 (‘000 hectares)

Fire category	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Planned	75	221	125	122	248	791
Unplanned	11	318	485	119	41	975
Total	85	540	610	241	289	1,766

Source: SOFR 2018 (ABARES 2018).

Covers fires recorded for all NSW forest areas, including areas outside the FA and IFOA areas. Totals may not tally due to rounding.

In north coastal areas, DPIE is identifying koala populations and habitat areas as identified assets for protection in fire planning tools. These are being considered in a Koala Fire Management Risk Plan with the NSW Rural Fire Service, local councils and other land managers to identify fire management protocols that minimise impacts on koalas and their habitat during prescribed burns or wildfires that scorch or burn the tree canopy.

Conserving soil and water resources

Protecting the soil and water in forests ensures that they can continue to provide important ecosystem services, such as clean water, biodiversity and the prevention of soil erosion, and are able to 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. These risks can be mitigated through robust legislative and regulatory frameworks and best practice management.

Australia’s *State of the Forests Report 2018* (ABARES 2018) found that, as of 2016, a total of 6.1 million hectares of public forest in NSW were managed primarily for protection of soil and water. Refer to the report for an overview of soil and water management in NSW forests.

The IFOAs contain conditions for the protection of soil and water during forestry operations. These include conditions to ensure that snig tracks, road building and maintenance do not cause erosion or block waterways. The EPA monitors compliance with these conditions and Forestry Corporation reports on non-compliance incidents requiring corrective action – see Section 2, page 49.

As part of the Coastal IFOA reform, the NSW Government invested in Light Detecting and Ranging (LiDAR) technology to better identify landscape features such as drainage lines. This will be considered in the design of the Coastal IFOA and will improve Forestry Corporation’s ability to manage roads when planning a harvesting operation and thus protect water quality.

The EPA and Forestry Corporation monitor the stability of roads and crossings during harvesting to ensure appropriate drainage and crossings are in place to minimise erosion and protect the integrity of nearby waterways. These include compliance checks for snig track drains and crossings, road crossings and riparian exclusion zones. Forestry Corporation also has long-term water monitoring programs in place that have gathered more than four decades of water quality data for forests.

The PNF Codes of Practice contain provisions to address potential impacts to soil and water during forestry operations on private land. These include riparian buffer zones, wet weather limitations and infrastructure controls to keep soil erosion and potential water pollution impacts in check. The EPA monitors compliance with the PNF Codes of Practice.

Drought and temperature

Climate modelling predicts a continued trend of increasing mean annual temperatures resulting in altered rainfall patterns and more severe droughts and heatwaves. Drought can increase the levels of pests and disease in plantations and state forests, and water availability may be affected by forestry activities through, for example, water use in plantations or non-compliance with waterway protection requirements. Drought conditions began in mid-2017 and have shown no sign of abating.

Legislative approaches to maintaining water quantity are reported in SOFR 2018. The IFOAs and the NSW Regional Forest Agreements contain provisions to mitigate potential impacts on water quantity. These include harvesting in a mosaic pattern across space and time so that potential impacts on waterways are not concentrated in small areas. Forestry Corporation monitoring programs include checking for signs of drought-related impacts. The results from these surveys are considered in the ongoing management of plantations and native forests.

A DPIE modelling project to map refuges for inland koalas, including over future climatic changes, is identifying attributes of these refuges in inland areas, where drought and heatwaves are key threats. A range of spatial data will be collated and utilised to delineate scenarios for future koala distribution, habitat quality and long-term koala resilience and viability.

Maintaining forests’ contribution to global carbon 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. Table 19 shows data from SOFR 2018 for carbon storage in 2016.

Table 19: Carbon stored in forests and wood products by state and territory, 2016 (megatonnes)

Forest category	NSW	Australia
Non-production native forests	5,301	18,668
Production native forests [*]	1,335	3,009
Total native forests	6,636	21,676
Post-1990 environmental plantings	4	15
Total other forests	4	15
Softwood plantations	31	147
Hardwood plantations	11	110
Total plantations	42	258
Forests total	6,682	21,949
Wood products in use	29	94
Wood products in landfill	21	50
Harvested wood products total	50	144
Total forests and harvested wood products	6,731	22,093

Source: State of the Forests 2018 (ABARES 2018)

NSW figures include figures for the Commonwealth territory of Jervis Bay.

^{*} Includes both multiple-use public forests and private native forests managed for wood production

Totals may not tally due to rounding.

Forestry Corporation calculates that in 2017–18 softwood forests under their management sequestered a net 3.4 megatonnes of carbon and hardwood and cypress forests 8.2 megatonnes. More information is available in its sustainability report (FCNSW 2018b).

Socio-economic benefits of forests

Forests provide a range of socioeconomic benefits, including timber and non-wood forest products and services such as honey, cattle grazing, recreation and tourism.

Value of forest products and services

Wood and wood products are important contributors to the national and state economies. SOFR 2018 reports that NSW is the second largest contributor to the national log harvest (after Victoria), with 5.6 million cubic metres of logs harvested from NSW forests between 2011 and 2016, worth \$458 million.

Non-wood forest products also play an important role in state and regional economies. These products are of biological origin and include honey, meat and skins from kangaroos and feral animals, firewood and products derived from native vegetation such as eucalyptus oils. SOFR 2018 provides information about the value of these products on a national scale.

Honey is an example of the value of non-wood products, with 1,964 commercial bee sites in the NPWS estate providing a revenue source of approximately \$382,980 as well as commercial opportunities for the apiary industry. This is complemented by 4,493 sites in the Forestry Corporation estate, which generated \$574,296 in revenue.

Investment in forest management and research

Commitment to effective forest management is critical to the long-term sustainability of NSW's forest resource. Investment in research, development, extension and use of new and improved technologies enables forest managers and governments to maintain and improve sustainable forest management practices. Investment in new and existing plantations helps ensure continued supply of wood. In a major development for the forestry industry, the NSW Government announced a \$24 million equity injection to the Corporation to fund land acquisition to establish new timber plantations. This will significantly bolster Forestry Corporation's plantation investments.

Forestry Corporation manages the two million hectares of State forest in NSW for multiple purposes and values and reports on sustainability indicators annually at www.forestrycorporation.com.au. Table 20 shows Forestry Corporation expenditure on a selection of key forestry management activities since 2014–15.

In 2017–18, Forestry Corporation ensured quality regeneration of native forests and replanted over 8,000 hectares of plantations with around 9 million seedlings ensuring future timber production. Following the successful integration of a significant 11,000-hectare acquisition in 2016–17, several small plantations and plantable areas were added to the estate in 2017–18.

Forestry Corporation also invested in the future of forestry through technology upgrades around supply-chain optimisation and safety of forest operations. The use of drones in fire management was explored with the agency integrating the new technology to find fires early and pinpoint the best locations to deploy crews quickly and effectively.

Table 20: Expenditure on public native and plantation forests by Forestry Corporation – 2014–15 to 2017–18

	2014–15	2015–16	2016–17	2017–18
Total operating expenses* (\$ million)	192	206.9	241.9	263.9
Forest management expenses (selected)				
Harvest management (hardwood forests)				
Supervision and environmental compliance	5.5	5.9	6.4	6.8
Harvest planning and pre-harvest surveys	4.5	5.0	5.6	6.0
Other forest management activities				
Fire prevention and fighting	10.6	11.2	13.3	15.2
Post-establishment pest management	0.6	0.6	0.6	0.7
Weed management	0.7	0.7	0.6	0.7
Animal pest management	0.7	0.9	0.6	1.1

Source: State of the Forests 2018 (ABARES 2018); Forestry Corporation

* Total operating expenses of FCNSW, not just expenditure on forest management.

NPWS has undertaken a trial of drone technology to determine the operational areas where this emerging technology could assist its staff. The program involved the use of NPWS-owned drones and contract operators to assess the capability and application of different drone types and sensors. Under the NPWS Chief Remote Pilot, NPWS has used drones to assess hazardous trees, detect fires, assess fire intensity, and track wildlife. NPWS will continue to investigate how best to integrate drones to make the daily operations of staff safer and more efficient.

Case study: Drones assist fire management

Forestry Corporation has continued to trial new technologies to enhance its operations. During 2017–18, the number of its accredited drone pilots increased to 15. Drone training has helped staff improve fire management, as the drone footage integrates with Forestry Corporation’s mapping app to find fires very early and pinpoint the best point to send a crew to extinguish the fire quickly and effectively.

Drones have also proved useful for:

- inspecting fire towers, allowing staff to undertake these inspections more safely and with significant cost saving
- identifying opportunities to enhance operations and improve accuracy, safety and efficiency.



Drones enable staff to monitor the development of a fire and pinpoint the exact location.
Image: Forestry Corporation

Recreation and tourism

Recreation and tourism activities in native forests are highly valued by the NSW community and forests are managed to accommodate these activities. In 2017–18, a total of 5,536,000 hectares of forested land were available or recreation and tourism in NSW.¹⁵ This includes Forestry Corporation’s two-million-hectare estate (except during harvesting operations).

The 2018 Park Visitor Survey estimated that there were over 35 million domestic visits to parks and reserves in areas covered by Forest Agreements that year (see Table 21).

¹⁵ Calculation by NPWS, based on Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) data and changes to the national parks estate.

Table 21: Estimated visits to NPWS reserves in 2018

Regional Forest Agreement region	Approximate NSW NPWS branch equivalent*	Combined number of domestic visits
Upper North East Lower North East	North Coast, Hunter/Central Coast, Blue Mountains	25,213,461
Southern Eden	South Coast, Southern Ranges	10,100,023
Total		35,313,484

Source: OEH/NPWS Park Visitor Survey 2018. These surveys are undertaken every two years.

* The survey collects and presents data based on NSW NPWS branch boundaries in 2017–18. These have been approximated to reflect the NSW regions covered by Regional Forest Agreements.

Popular activities in these parks include:

- picnicking
- touring, sightseeing and nature appreciation
- exercise and sport, including walking, cycling, water and snow sports
- children’s play
- camping and accommodation.

The survey found high levels of visitor satisfaction, with an average 94% of those surveyed ‘satisfied’ or ‘very satisfied’ with their last visit. The next State of the Parks survey is due in 2020.

Managing recreational assets - NPWS

In 2018, the NSW Government announced an \$80 million investment in nine projects over seven years to create iconic, world class nature-based experiences in national parks across NSW. Separate funding announcements of three additional projects brought the NPWS Visitor Infrastructure Program to a total of 12 inspiring projects across 13 protected areas, with a total investment of \$123 million.

The projects will develop and expand visitor facilities and infrastructure, including tracks and trails, new and upgraded lookouts, picnic areas, eco-accommodation and campsites. The new trails will be accessible to a range of ages and abilities, offering part-day, single-day and multi-day walking or cycling opportunities.

Managing recreational assets – 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. 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 can use State 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.

Funding for the provision of tourism and recreation in State forests is partially provided through Community Service Obligation (CSO) grants from the State Government.

North Coast State forest provides world-class tourism

In recent years, the Forestry Corporation has made a significant investment in transforming Bruxner Park Flora Reserve in Orara East State Forest into an award-winning tourist destination that is also environmentally sensitive. Initiatives that enhance the visitor experience include:

- the Forest Sky Pier at Sealy Lookout, an ideal vantage point for viewing the spectacular coastline and whale watching
- the new Gumbaynggirr people experience along the [Gumgali Track to Korora Lookout](#),¹⁶ which includes interpretative sculpture, street art and sound – the track was developed in partnership with Bularri Muurlay Nyanggan Aboriginal Corporation
- a network of rainforest walking tracks.



The Forest Sky Pier at Sealy Lookout. Photo: Forestry Corporation

The reserve is the first attraction in Coffs Harbour to be eco-certified by Ecotourism Australia. The lookout won a gold award at the NSW Tourism Awards in November 2017 and was acknowledged as one of the top three tourist attractions in Australia at the national awards, taking out bronze in the Tourist Attraction category. The Gumgali Track to Korora Lookout has also won awards in the USA.

These changes have contributed to an increase in park visits, with visitor numbers more than trebling over the past five years.

¹⁶ www.forestrycorporation.com.au/visit/forests/orara-east

Aboriginal connections to forest

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. SOFR 2018 identifies four different types of Indigenous ownership and management.

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.

Table 23 shows the area of NSW for each category in 2016.

Source: SOFR 2018

Table 22: Area of land and forest in the Indigenous estate by Indigenous land ownership and management categories, nationally and for NSW

Management category	Land cover type	Area ('000 hectares)	
		NSW	Australia
Indigenous owned and managed	All	342	124,317
	Forest	134	17,989
Indigenous managed	All	207	27,450
	Forest	42	4,907
Indigenous co-managed	All	3,066	22,297
	Forest	2,274	5,731
Other special rights	All	1,247	263,615
	Forest	578	40,916
Total Indigenous estate	All	4,862	437,678
	Forest	3,029	69,543
Total forest in jurisdiction		20,368	134,037
Proportion of total forest that is forest on the Indigenous estate		15%	52%

Source: SOFR 2018

Over 56,000 Indigenous heritage sites are registered across 37,548 hectares of NSW forests.

Indigenous participation in forest management helps to ensure that Indigenous values are protected, maintained and enhanced in NSW forests.

National Parks and Wildlife Service

Aboriginal joint 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 141 parks and reserves covering almost a third of the national park 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 2017–18, NPWS arranged training sessions attended by 20 Aboriginal community members. Topics included:

- fence construction
- tourism product development
- horticulture.

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 2017–18, activities were conducted across 25 parks and reserves.

Nine Aboriginal businesses were contracted to the value of \$50,000.

Cultural events held on NPWS parks and reserves were attended by 400 Aboriginal people. These events included four cultural camps with 60 participants. A typical example of these events is the cultural camp and bark canoe building workshop in New England National Park. The workshop included producing a short film: *Dhandarr Wuuyi – Making a Stringybark Canoe*.

Fifty-nine Aboriginal people were employed on short-term contracts across a range of projects, including restoration works.

Forestry Corporation

As at June 2018, the area under Forestry Corporation management included:

- six gazetted Aboriginal Places
- 3,453 protected Aboriginal sites
- 1,140 hectares managed for Aboriginal cultural heritage.

Six Aboriginal Liaison Officers in the 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),¹⁷ there are eight agreements with communities across the state to manage areas of state forest for camping, teaching and practising culture.

Aboriginal groups are regularly contracted to Forestry Corporation for archaeological site surveys as part of the planning process for harvesting and roading operations.

Case study: Traditional Aboriginal fire practices used for contemporary cultural burns

Aboriginal people have used fire to shape and manage forest health for thousands of years. Regular cool burns help forests develop a denser canopy and lower the risk of bushfires from the fuel load on the forest floor. Forestry Corporation has been working with Aboriginal communities to use traditional burning practices for contemporary cultural burns.

This year there were cultural burns using traditional fire practices at East Boyd State Forest near Eden and Bruxner Park Flora Reserve in Orara East State Forest near Coffs Harbour. The area in Orara State Forest is also known as Niggii, which means ‘charred’ in Gumbaynggirr. This indicates that the area was traditionally burnt, making it a very special burn for the local community.

Each cultural burn started with a traditional ceremony, with strategic burning over the following days and weeks. The aim of the burns was to bring traditional fire practices back to the area, which helps keep culture alive as well as improving the health of the forest.

Protection of non-Indigenous 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 which show connections to the past, or be valued for their beauty and the opportunities for recreational activities. Table 23 shows the area of forest in NSW where non-Indigenous heritage sites occur in 2016.

In 2018, NPWS completed a full heritage assessment of Cutters Camp complex, the former Forestry Commission of NSW forestry camp in Mebbin National Park. The complex has been assessed as having local significance. Recommendations for adaptive re-use of the complex to ensure its conservation and ongoing use form the basis of funding bids for works over the 2018–19 and 2019–20 financial years.

¹⁷ ILUAs are voluntary agreements between native title groups and other stakeholders covering the use of land and water. Current ILUAs related to forestry include Gundungurra in the Moss Vale and Lithgow area and Githabul on the north coast. For more information see the Forestry Corporation’s forest management plans and sustainability supplement at www.forestrycorporation.com.au

Table 23: Area of forest on non-Indigenous heritage-listed sites by tenure and jurisdiction ('000 hectares)

Tenure	NSW	Australia
Leasehold forest	10	1,013
Multiple-use public forest	38	72
Nature conservation reserve	2,120	6,598
Private land	20	1,626
Other Crown land	6	1,609
Unresolved tenure	0	46
Total	2,194	10,964
Total forest in jurisdiction	20,368	134,037
Proportion of total forest that is forest on non-Indigenous heritage-listed sites	11%	8%

Source: SOFR 2018

Employment in the forestry sector

Employment in the forest sector is a direct measure of how forests contribute to the NSW economy. Forestry sector jobs include harvesting, support services, wood product, pulp and paper manufacturing, conservation and reserve management. Figure 8 shows trends in forest sector employment over the 10 years to 2016 (ABARES 2018).

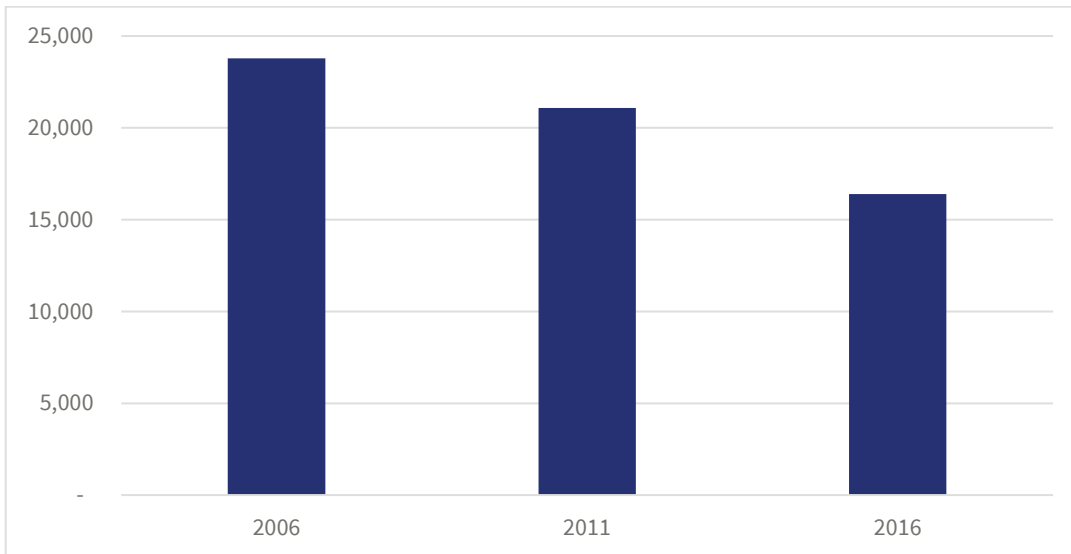


Figure 8: Number of people employed in the NSW forest sector, 2006–2016.

Source: SOFR 2018

In 2016 (most recent data), 16,396 people worked in NSW forestry and forest products manufacturing industries (ABARES 2019). This included workers in the forestry, harvesting and support services sectors. The employment figures below are based on average full-time equivalent staffing, including casual employees and overtime, and are subject to seasonal fluctuation, depending on demand for services such as firefighting.

Forestry Corporation employed 520 full-time equivalent staff at 30 June 2018, not including seasonal staff engaged over the fire season.

NPWS employed the equivalent of 1,818 full-time staff during this period. The agency continued to benefit from a strong representation of Aboriginal people in its workforce.

DPI's Forestry Unit employed 36.5 full-time equivalent (FTE) staff, comprising 22 in the DPI Forests Science team, 5.5 to administer the Plantations and Reafforestation Act, four in management and five in policy and industry development roles.

During the reporting period, Local Lands Services employed 7.8 FTE staff to administer the PNF program under Part 5B of the Local Lands Services Act, comprising 4.8 private native forestry operations staff and three staff in policy roles.

Legal, institutional and economic frameworks

Changes to the legal framework

During this period, the EPA led the preparation of the *Forestry Legislation Amendment Act 2018*, which was passed by the NSW Parliament in June 2018 to commence in November 2018. The Act delivers more streamlined, transparent and enforceable environmental laws for native forestry, including stronger penalties for non-compliance and a broader suite of compliance tools. See Section 1 for more information.

The *Native Vegetation Act 2003* and the Native Vegetation Regulation 2013 were repealed on 25 August 2017 and replaced by the *Biodiversity Conservation Act 2016* and the *Local Land Services Act 2013* (as amended in 2016).

This package of amendments and supporting Regulations and products¹⁸ establishes a modern and integrated legislative framework for land management and biodiversity conservation. Biodiversity elements include major innovations to offsetting and private land conservation, as well as improvements to threatened species conservation and management of human-wildlife interactions.

Research and monitoring capacity

Levels of investment in research and development provide a broad measure of commitment to continual improvement of sustainable forest management practices.

Forestry Corporation maintains research and development capacity through a service level agreement (SLA) with the Forest Science Unit of DPI Forestry. In 2017–18, the Corporation invested \$2.2 million in research, of which \$1.7 million was through the SLA. Research activities this year included:

- completion of several research projects, including pre-thinning biodiversity surveys and a three-year koala study in north-east forests (see case study, page 19)
- securing federal funding for forestry biosecurity surveillance to detect exotic pests and diseases in high-risk locations
- development of new methods and technologies for assessing forest resources
- completion of the North Coast residues project, which investigated use of forestry biomass for bioenergy generation.

Further detail is available in *Forestry Corporation Annual Report 2017–18* (FCNSW 2018a).

Other agencies did not provide an update for 2017–18.

¹⁸ www.environment.nsw.gov.au/biodiversitylegislation



Section 2:

Compliance

2. Compliance with integrated forestry operations approvals and other requirements

Integrated forestry operations approvals (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. At 30 June 2018, there were seven IFOAs, covering the Upper North East, Lower North East, Southern (including Tumut), Eden, Brigalow–Nandewar, South Western Cypress and Riverina Red Gum regions (see Appendix 5).

The EPA regulates the compliance of Crown forestry operations with the IFOAs and the compliance of private forestry operations with the Private Native Forestry Codes of Practice.

During 2017–18, the approvals, made under the Forestry Act, contained non-licence terms and terms of licences, including:

- Environment Protection Licences (EPLs) under the *Protection of the Environment Operations Act 1997* (POEO Act)
- Threatened Species Licences (TSLs) under the *Threatened Species Conservation Act 1995*
- Fisheries Licences (FLs) under the *Fisheries Management Act 1994*.

The non-licence terms, TSLs and EPLs are administered by the EPA and the FLs by the NSW Department of Primary Industries (Fisheries).

Non-licence terms describe the forestry operations covered by the approval and include a description of the area of the state to which they apply. Conditions in non-licence terms include requirements for preparation and maintenance of strategic management plans, annual reports and operational plans (see appendices).

EPLs contain conditions that aim to protect the aquatic environment from water pollution caused by forestry activities. In the Upper North East, Lower North East, Southern and Eden regions, EPLs are only required for harvesting operations that meet criteria set out in clause 24 of Schedule 1 of the POEO Act. For harvesting operations that do not meet these criteria, the Forestry Corporation can elect not to apply an EPL, but must still comply with section 120 of the POEO Act that prohibits the pollution of waters.

Forestry operations in the Brigalow–Nandewar, South West Cypress and Riverina Red Gum regions are required to apply an EPL to all operations.

TSLs contain conditions that set out minimum measures that protect threatened species, populations, habitat and ecosystems from activities associated with timber harvesting. TSLs must be applied during all native forestry operations.

FLs include conditions to protect threatened fish species, populations, ecological communities and habitat from activities associated with timber harvesting.

There were no amendments to existing IFOAs and no new IFOAs were established during 2017–18, although a comprehensive remake of the four coastal IFOAs continued (see page 10).

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, respectively.

In 2017–18, the EPA carried out a strategic compliance and enforcement program. The compliance program comprises a proactive risk-based program as well as a program responsive to concerns raised by the community.

Proactive compliance activities

The EPA focuses its efforts by delivering proactive compliance and enforcement activities 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 key environmental criteria. The environmental criteria are broad and largely based on annual compliance priorities (outlined in previous annual reports). The environmental criteria used in risk assessment are shown in Table 24.

Table 24: Crown and private native forestry environmental risk assessment criteria

Environmental risk criteria	Crown forestry	Private native forestry
Hollow-bearing and recruitment trees – the potential of occurrence	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 – 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

Environmental risk criteria are intended to be adaptable and responsive to emerging environmental issues, industry compliance (both changed behaviour or trends in regulatory non-compliance) and where improved data is available to assist in the assessment of risk.

The EPA also considers the public interest when assessing risk, including predicted or actual elevated community concern around a proposed harvesting operation and the proximity of proposed forestry operations to 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 as required, such as having a regulatory presence in geographic areas where environmental risks are less likely or past regulatory issues were prevalent.

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.

Range of regulatory tools to achieve compliance

The EPA uses a range of regulatory tools to promote compliance of native forestry operations with the IFOAs or PNF Code. Regulatory tools include audits, field inspections, investigations, desktop assessment, notices, orders,

penalty notices and education. Compliance audit reports for individual public forestry operations are available on the EPA's public register. These activities are explained in more detail in the EPA's Compliance Policy.

In this reporting period, the EPA purposefully shifted away from audits as the primary tool for assessing the compliance of forestry operations. Instead, the EPA has increased its use of field inspections. Inspections focus on compliance with conditions required by the licences or activities that have the potential for causing environmental impacts. This change allowed the EPA to increase its regulatory oversight and focus its proactive program on assessing potential and known compliance and environmental issues.

Compliance audits still have a place and are used for assessing systemic compliance issues or forestry operations that need a comprehensive assessment of compliance or otherwise.

The EPA carries out investigations to respond to incidents and community concerns about the impacts of harvesting.

The EPA may also carry out investigations where potential non-compliances are found as a part of undertaking proactive activities. Unlike audits, investigations are designed to suit a specific incident or set of allegations. The investigative process is more flexible but aligns to principles of procedural fairness. Investigations can result in a range of actions such as no action, education, improving awareness of the law and environmental issues, remediation action, warnings, cautions, orders, penalties, prosecutions and recommendations for policy and regulatory changes. The EPA's compliance policy guides the way in which the EPA investigates and responds to each of these matters.

Crown native forestry compliance and enforcement activities

This section reports on outcomes from the EPA's native forestry compliance and enforcement activities on State forests. For results of EPA compliance and enforcement activities on private native forests, see page 55.

In 2017–18, as part of its compliance program the EPA inspected 21 operations. These inspections were conducted either in response to reports of non-compliance from the public, to support investigations or as a part of proactive compliance activities.

Of the proactive compliance activities assessed for compliance this year:

- three were desktop assessments focused on planning and operational documents which resulted in recommendations for follow-up field inspections for two operations
- two field audits were conducted and subsequently finalised for two high risk operations
- another high-risk operation was inspected for compliance in the field with no further action occurring.

In 2017–18, the EPA issued Forestry Corporation with warning letters for two operations, official cautions for five and a clean-up notice for another operation. Advisory letters were also issued for eight operations. The Forestry Corporation was convicted of an offence for not complying with the IFOA in Glenbog State Forest and fined \$8,000 by the Land and Environment Court. The Corporation was acquitted of an offence in a second matter in Badja State Forest. Details of these two matters were outlined in the previous reporting period.

Final audit reports are available on the EPA's [compliance audit report register](https://www.epa.nsw.gov.au/your-environment/native-forestry/native-forestry-nsw-overview/regulating-native-forestry/compliance-audit-report-register).¹⁹

¹⁹ <https://www.epa.nsw.gov.au/your-environment/native-forestry/native-forestry-nsw-overview/regulating-native-forestry/compliance-audit-report-register>

IFOA regional summary

Upper North East region (UNE)

Audits and proactive inspections

The EPA undertook and subsequently finalised one audit during the reporting period in Clouds Creek State Forest. This operation was identified as high risk as part of the EPA's proactive compliance program assessment. This audit focused on mark-up and protection of retained trees and exclusion zones and EPL requirements for road crossing drainage and drainage feature protection. The final audit report is available on the EPA's compliance audit report register.

The EPA also proactively inspected another high-risk operation in this region after a desktop assessment was conducted and found further issues for assessment. The field inspection focused on hollow-bearing and recruitment tree selection, retention and protection, and koala primary browse tree selection and retention. The EPA is continuing to investigate this matter and details of the investigation will be released upon the conclusion of the investigation in the next reporting period.

Investigations

The EPA finalised an investigation of a forestry operation in Oakes State Forest this year. This investigation was initiated in response to a report from a member of the public.

As a result of this investigation an official caution was issued for:

- a tree being felled within protection zones on an unmapped drainage line
- not marking up a ridge and headwater exclusion zone
- the felling of several trees within that exclusion zone.

In addition, a warning letter was issued for one operation for non-compliances with certain EPL conditions. The EPA is continuing to investigate other matters associated with this operation and details will be released upon the conclusion of the investigation in the next reporting period.

Lower North East region (LNE)

Audits and proactive inspections

The EPA undertook and subsequently finalised one audit in Kippara State Forest during the reporting period. This operation was identified as high risk as part of the EPA's proactive compliance program assessment. The audit focused on the mark-up and protection of a rainforest exclusion zone and the protection of retained trees. The final audit report is available on the EPA's compliance audit report register.

The EPA also proactively inspected another operation in Enfield State Forest that was identified as high risk. This inspection focused on the selection, retention and protection of hollow-bearing and recruitment and yellow-bellied glider feed trees and assessing the protection of a rainforest exclusion zone. No further compliance action was required for this operation.

Investigations

The EPA finalised investigations into four harvesting operations in this region this year. Three of these investigations were started in response to community reports to the EPA alleging non-compliance in Barrington Tops, Bellangry and Lansdowne State Forests. A fourth investigation was initiated by the EPA following a proactive audit by the EPA in Kippara State Forest (see above) earlier in the financial year.

Three official cautions were issued following three of these investigations. The first official caution was issued for failure to include records for a locally occurring threatened species on harvest plan documentation and harvesting

within a rocky outcrop exclusion zone. The second was issued for failure to include records of threatened species on a harvest plan documentation. The third caution was issued for operating harvesting machinery within a rainforest exclusion zone. Two advisory letters were also sent to Forestry Corporation for two of the forestry operations subject to official cautions.

The other investigation into a forestry operation in Bellangry State Forest resulted in no further action.

A clean-up notice was issued for water pollution from a harvesting operation in Gladstone State Forest. An advisory letter was also issued to Forestry Corporation. The EPA is continuing to investigate other matters associated with this operation and details of the investigation will be released upon the conclusion of the investigation the next reporting period.

Southern region

Audits and proactive inspections

The EPA undertook and subsequently finalised two audits this year in North Brooman and Dampier State Forests. The audits focused on the mark-up and protection of a ridge and headwater habitat area and the selection, retention and protection of hollow-bearing and recruitment trees. The final audit reports are available on the EPA's public register.

In response to community concerns about an impending harvesting operation, the EPA proactively inspected Corunna State Forest to ensure threatened species protections were being correctly applied in the field. An advisory letter was issued to Forestry Corporation, identifying key risk areas that the EPA will concentrate on when the operation commences and requiring the Corporation to undertake voluntary remediation work to reduce any risks of roads and tracks impacting on local waterways. The EPA will continue to actively engage with the local community and Forestry Corporation around the conduct of this operation during this reporting period.

The EPA proactively inspected another forestry operation in Currowan State Forest. The focus of this inspection was on hollow-bearing and recruitment tree retention, selection and protection as well as the identification and protection of stream exclusion zones. No further compliance action was required for this operation.

Investigations

The EPA finalised one investigation in Mogo State Forest this year. As a result of the investigation an official caution was issued to Forestry Corporation for non-compliances related to felling of hollow-bearing trees, leaving harvesting debris around retained hollow-bearing and recruitment trees and excessive ground disturbance on snig tracks and crossbanks. An advisory letter for the same operation was also issued for other matters noted during the investigation. The letter highlighted concerns around insufficient retention and inadequate selection of hollow-bearing and recruitment trees.

On 16 February 2018, the Land and Environment Court handed down its decision on a prosecution which related to searching and protection of a cliff in Badja State Forest. Forestry Corporation pleaded not guilty to an offence under the now repealed s. 133 (4) of the *National Parks and Wildlife Act 1974*. The organisation was acquitted of the offence. Further detail of the decision can be found on the [Case law website](#).²⁰

Eden region

Audits and proactive inspections

No audits or proactive inspections were undertaken in this reporting period.

²⁰ www.caselaw.nsw.gov.au/decision/5a83bbbee4b074a7c6e1c53c

Investigations

In 2017–18, the EPA continued an investigation into alleged non-compliances by one operation raised through a community report received by the EPA. Details will be released on conclusion of the investigation in the next reporting period.

On 5 October 2017, the Land and Environment Court handed down its decision on a prosecution which related to searching and protection of rocky outcrops in Glenbog State Forest. Forestry Corporation pleaded guilty to an offence under the now repealed s. 133 (4) of the *National Parks and Wildlife Act 1974*. The organisation was found guilty of the offence and ordered to pay a fine of \$8,000 as well as the EPA's legal costs and to place a notice in the *Bega District News*. Further detail of the decision can be found on the [Case law website](#).²¹

A third matter also relating to searching and protection of rocky outcrops in Glenbog State Forest was lodged with the court, but this was withdrawn for reasons relating to evidence.

Brigalow–Nandewar region

Audits and proactive inspections

No audits or proactive inspections were undertaken, as no high-risk operations were recorded during this reporting period.

Investigations

No investigations were finalised for this region during this reporting period.

Riverina Red Gum region

Audits and proactive inspections

The EPA conducted five proactive inspections on western lands lease properties this year. These were initiated to ensure regional coverage of the EPA's regulatory efforts, although they were determined to be low risk operations. The inspections had to be limited in scope due to recent flooding events on some properties. No compliance action was required as a result of these inspections.

Investigations

A formal warning was issued to Forestry Corporation after an investigation at a western land lease operation that started in the previous financial year. The warning was issued for felling river red gum trees with diameters greater than 70 centimetres, felling a dead standing tree exclusively for firewood and operation of machinery within a 20-metre exclusion zone of the Murrumbidgee River.

South Western Cypress region

Audits and proactive inspections

The EPA proactively inspected three operations in Balgay, Talgong and Mulyandry State Forests this year. These inspections were initiated to ensure regional coverage of the EPA's regulatory efforts, although they were determined to be low-risk operations. The inspections focused on the mark-up of exclusion zones and mark-up and protection of retained trees. These matters resulted in further investigations (see below).

²¹ www.caselaw.nsw.gov.au/decision/59d4a156e4b074a7c6e19381

Investigations

As a result of the proactive inspections in Balgay, Talgong and Mulyandry State Forests, Forestry Corporation was issued with an advisory letter. The letter acknowledged a good level of operational compliance but raised concerns around the lack of accessibility of harvest plans and harvest plan operational maps on the organisation's website. Concerns were also raised about a lack of clarity in mark-up symbols at one operation and the adequacy of the stream ordering assigned to drainage lines at another.

Private native forestry compliance and enforcement activities

The EPA undertakes inspections and investigations into PNF operations, supported by regulatory extension activities.

During 2017–18, the EPA visited 62 planned or actual harvesting sites in the field to offer regulatory extension, conduct inspections and as a component of ongoing investigations. As a result of this compliance work, the EPA issued warning letters for 12 operations, official cautions for another eight and penalty notices for four.

Non-compliances included clearing without a PNF Plan, not having a forest operation plan, conducting forestry operations in exclusion zones and pollution of waters. The EPA also terminated two PNF Plans for non-compliance with the PNF Code. A stop work order was issued for another operation.

The EPA successfully prosecuted two matters in local courts, both of which related to non-compliances with the PNF Codes resulting in water pollution.

Forestry Corporation internal compliance program

Forestry Corporation publishes the number of non-compliance incidents requiring corrective action annually. Table 25 summarises incidents recorded in the three years to 2017–18.

Table 25: Number of non-compliance incidents that required corrective action recorded across all State forests by the Forestry Corporation – 2015–2018

	2015–16	2016–17	2017–18
Number of compliance check sheets conducted by Forestry Corporation supervisors			
Compliance monitoring	1,291	2,211	2,517
Systems implementation	293	567	679
Forest management system internal audits	2	3	4
Number of non-compliances recorded by staff for incidents in moderate and above categories			
Extreme	0	0	0
Major/severe	1	3	0
Moderate	20	19	6
Total	20	22	6

Fisheries

Compliance with the Fisheries Licences (FLs) contained in the IFOAs is audited by DPI (Fisheries).

The department reported the following compliance responses in 2017–18:

- one formal caution issued in relation to a FL breach at Burrawan State Forest in relation to the harvesting of three trees in the buffer zone of an unmapped drainage line (condition 7.5 (b))
- no further action taken in relation to 16 trees harvested in the exclusion/buffer zones of unmapped drainage lines in Conglomerate State Forest and one tree harvested in an exclusion zone of an unmapped drainage line in Gibberagee State Forest (Conditions 7.4 (b) and 7.5 (b))
- letter sent to Forestry Corporation regarding the Conglomerate and Gibberagee State Forest matters outlining the mitigating circumstances taken into consideration in those instances.



Section 3:

Milestones and undertakings

3. Achievement of milestones and undertakings for NSW forest regions

Milestones and undertakings are tasks specified in the Forest Agreements and IFOAs that provide a way of measuring the achievement of ecologically sustainable forest management. These tasks range from short-term milestones for improving forest management to the establishment of ongoing and long-term undertakings, such as plans, frameworks and reviews.

At June 2018, most milestones and undertakings had been completed or were no longer applicable and have not been listed in more recent reports. Refer to earlier annual forestry reports and the five- and 10-year review (DECCW 2010) for information about previous milestones and undertakings that are complete or no longer apply.

Milestones

Tasks and required timeframes for continual improvement in the management of forested areas include:

- developing environmental management systems
- preparing management plans for areas of high conservation value
- reporting harvested volumes of timber and other forest products such as firewood
- coordinating approaches to land management issues, such as pest and weed control
- entering joint venture initiatives with local landholders and Aboriginal people
- monitoring criteria and indicators
- preparing management plans for tourism and recreation within forest areas.

Undertakings

Other tasks agreed between State agencies that are listed in approvals or licences include:

- any remaining documents to be prepared, such as monitoring and management plans
- training to be provided
- monthly reports and annual reports
- systems for providing public access to documents.

Of those milestones and undertakings not completed by June 2018:

- Approximately 55 relate to ongoing work such as reporting, periodic reviews and updates to plans and Aboriginal employment and training. Updates are provided in each report where available for these ongoing yet important undertakings. When no update has been provided by the reporting agency or is not available, the progress update will state the year when an update was last provided.
- Four are awaiting finalisation as part of the NSW Government Coastal IFOA remake (due to be completed in November 2018 after the reporting period). These are for an operational research trial, draft methodologies for tree retention and a field protocol for measuring distances.
- eight are in progress but overdue, including:
 - five management plans or compliance methodologies that will be considered as part of the five-year statutory reviews of the three western IFOAs in 2019, including plant and species management plans in the

Brigalow–Nandewar Region and South Western Cypress Region and a sustainable yield study in Brigalow–Nandewar.

- two monitoring plans that will be considered as part of the development of a cross-tenure forest monitoring and improvement program commencing in 2019 – in the interim, the Forestry Corporation of NSW is working in accordance with draft plans.
- a review of the early thinning program in the Riverina Red Gum region to determine a sustainable annual maximum yield which is on track for completion in the next reporting period.
- Four undertakings have been identified as having long-range timeframes for completion:
 - the Gondwana heritage listing (Coastal region)
 - enterprise development and initiation of employment opportunities for Aboriginal people in the Hume and Riverina regions (two undertakings in the Coastal region)
 - Community Conservation Advisory committees (Brigalow–Nandewar region).

Appendix 1 reports on progress in completing milestones and undertakings in the NSW Forest Agreements for the UNE, LNE, Eden and Southern regions.

Appendix 2 reports on progress in completing milestones and undertakings in the Brigalow and Nandewar Community Conservation Area Agreement (CCA Agreement) (CCC 2009) and the Brigalow–Nandewar IFOA (EPA 2010a).

Appendix 3 reports on progress in completing milestones and undertakings in the Riverina Red Gum region as set out in the Riverina Red Gum IFOA (EPA 2010b).

Appendix 4 reports on progress in completing milestones and undertakings in the South Western Cypress region as set out in the South Western Cypress IFOA (EPA 2011).

Appendix 1: Milestones and undertakings – Coastal IFOAs

This appendix reports on progress in 2017–18 in achieving the milestones and undertakings specified in the NSW Forest Agreements for the UNE, LNE, Eden and Southern regions. Milestones and undertakings previously recorded as complete or no longer applicable are not listed.

Milestone number	Milestone	Progress in 2017–18
1. Environmental Management Systems – no further reporting, see 2013–14 report (EPA 2017b)		
2. Management planning		
Milestone 2.1 Agency: NPWS	Plans of management for the NPWS estate Refer to UNE, LNE and Eden Forest Agreements (FAs) section 2.3.2, Att. 8; Southern FA section 2.3.2	<p>Of the 395 reserves in the UNE and LNE regions, 284 have plans of management adopted by the NSW Minister for the Environment and 34 have draft plans that have been publicly exhibited. A statement of management intent is in place for 67 reserves. Statements of management intent are in preparation for five reserves and a plan of management for one park is in preparation by its Aboriginal board of management. Four reserves (two Aboriginal areas and two co-managed nature reserves) do not have a current plan.</p> <p>Of the 17 reserves in the Eden region, 16 have plans of management adopted by the NSW Minister for the Environment and one has a draft plan that has been publicly exhibited but is yet to be adopted.</p> <p>Of the 128 reserves in the Southern region, 116 have plans of management adopted by the NSW Minister for the Environment and five draft plans have been publicly exhibited. A statement of management intent has been prepared for six reserves. A statement of management intent is in preparation for the remaining reserve (an Aboriginal area).</p>
Milestone 2.4 Agency: FCNSW	Report on meeting targets in ecologically sustainable forest management (ESFM) plans Refer to UNE, LNE, Eden, Southern FAs section 2.2.6	FCNSW continues to report at a statewide level on performance across a range of social, environmental and economic areas through its annual report and sustainability report (FCNSW 2018a, FCNSW 2018b). Indicators contribute to the delivery of ESFM reporting outcomes.
Milestone 2.7 Agency: FCNSW	Working plans for flora reserves to be incorporated into ESFM plans	Draft flora reserve management plan templates have been developed. The new templates have two components: a generic document covering standard conditions and management aims and a supporting site-specific document which includes local issues and objectives. Management plans will be progressively prepared for new reserves.

Milestone number	Milestone	Progress in 2017–18
	Refer to UNE and LNE and FAs section 2.2.2; Eden FA section 2.2.2; Southern FA sections 2.2.2, 2.3.2	
3. CAR reserve system		
Milestone 3.2 Agency: Fisheries	Aquatic reserves declared under the <i>Fisheries Management Act 1994</i> that affect forestry operations in the UNE, LNE, Eden or Southern regions Refer to LNE, UNE, Eden, Southern FAs section 2.3.4	No new aquatic reserves have been declared since 2002. Aquatic reserves are now managed under the <i>Marine Estate Management Act 2014</i> . Refer to the DPI website ²² for information about marine protected areas.
Milestone 3.3 Agencies: NPWS with FCNSW	Upgrading of forest management zones (FMZs), reviewing mineral objections and lands for further consideration (FURCONS) Refer to UNE and LNE FAs sections 2.3.1, 2.3.3, 6.16.2; Eden FA section 6.16.1; Southern FA section 2.3.3	There were no formal reviews of forest management zones, mineral objections or lands for further consideration in 2017–18. There were minor reductions in the area of Forest Management Zones due to the Government converting some areas of State Forests to another tenure (revocations). None of these revocations were related to protected areas. <ul style="list-style-type: none"> • Zone 1 increased by 8 hectares • Zone 2 reduced by 28 hectares • Zone 3A reduced by 687 hectares • Zone 3B reduced by 21 hectares • Zone 4 reduced by 300 hectares • Zone 5 reduced by 30 hectares • Zone 7 reduced by 214 hectares <p>On 29 June 2018, around 728 hectares of Forest Land State Forest was set apart as Forest Land Flora Reserve, with NPWS appointed as the land manager of that reserve. Parts of the flora reserve are either an inholding of Washpool National Park or adjacent to the park and will provide for more efficient conservation management, for example for fire, pests and weeds.</p>
4. Crown reserves and assessment of Crown land		

²² <https://www.dpi.nsw.gov.au/fishing/habitat/protecting-habitats/mpa>

Milestone number	Milestone	Progress in 2017–18
Milestone 4.1 Agency: NPWS	Management and five-year review of Crown reserves/state conservation areas Refer to UNE, LNE and Eden FAs 2.3.3; UNE and LNE FA section 2.3.3; Eden FA section 2.2.3; Southern FA section 2.3.3	NPWS has started the third five-yearly review of state conservation areas as required under section 47M, NPW Act. As at October 2017, 142 state conservation areas are being reviewed. Once finalised, a review report will be published on the agency's external website.
Milestone 4.2 Agency: NPWS	Identification and assessment of additional areas available for formal reservation Refer to UNE and LNE FAs section 6.16.2	Land use and management decisions about additional Crown land now occur as part of the government's progressive response to recommendations arising from the <i>Crown Lands Management Review 2014</i> (NSW Government 2014).
5. Threatened species management – no further reporting, final update was in the 2010–11 report (EPA 2014)		
6. Pest, weed and feral animal control – no further reporting, final update was in the 2014–15 report (EPA 2017c).		
7. Managing for other forest values and uses		
Milestone 7.4 Agencies: OEH, which chairs Occupation Permit Taskforce (NPWS, FCNSW and NSW Farmers)	After consultation, the Occupation Permit Taskforce must oversee the phasing out of occupation permits in state forests in areas identified as formal and informal reserves and permissive occupancies on Crown land identified as formal and informal reserves. Refer to UNE, LNE, Eden FAs section 2.3.3; Southern FA section 2.3.3	This milestone is considered complete and will not be reported in future.
8. Private land		
Milestone 8.1 Agency: OEH Veg. mapping	Identification of private land of conservation priority Refer to UNE and LNE FAs section 2.9.1 – 1 January 2000; Southern FA section 2.9 – 30 June 2002	Processes in place for identifying private land of conservation priority are listed on page 26 of the <i>Review of NSW Forest Agreements and Integrated Forestry Operations Approvals</i> (DECCW 2010). No update was provided by OEH for this report.

Milestone number	Milestone	Progress in 2017–18
		New conservation areas on private land up to 2016–17 are reported in the NSW native vegetation 2016–17 data spreadsheet, available on the DPIE website ²³ .
Milestone 8.5 Agency: FCNSW	Improve administrative arrangements and cooperation and coordination by state agencies to facilitate the timber industry utilising private forest resources including marketing and pricing Refer to Southern FA Att. 6 (3)	The <i>Review of NSW Forest Agreements and Integrated Forestry Operations Approvals</i> (DECCW 2010) summarised programs and arrangements by state agencies and non-government organisations, including marketing and pricing, to assist in the use and management of private forest resources. The next review will start in 2020. DPI Forest Science group has undertaken a broadscale study of the private native forestry estate and resource on the north coast to determine its extent, condition and contribution to regional timber supply and socio-economic outcomes. The project has produced a detailed map of north coast PNF productivity, technical reports on remote survey technologies and an attitudinal survey report for PNF growers and operators. Details are available on the DPI website.
9. Private native forestry and plantations – no further reporting required – final update was in the 2010–11 report (EPA 2014)		
10. World heritage and wilderness		
Milestone 10.1 Agency: NPWS	Review of Gondwana Rainforests of Australia (previously known as the Central Eastern Rainforest Reserves of Australia – CERRA) World Heritage Area to identify any additional rainforest to be included Refer to UNE and LNE FAs section 2.7	Agreement to retain the Gondwana Rainforests of Australia World Heritage Area (extensions to an existing property) on Australia’s Tentative List at the Meeting of Environment Ministers on 15 December 2016. No further action has occurred to progress the preparation of a nomination.
Milestone 10.2 Agency: NPWS	Studies of the dedicated reserve system to identify World Heritage values, including eucalypt-dominant vegetation and religious beliefs embedded in the landscape Refer to UNE and LNE FAs section 2.7; Eden FA section 2.6; Southern FA section 2.7	There were no World Heritage values assessments for the areas covered under the Forest Agreements during the reporting period.

²³ <https://www.environment.nsw.gov.au/topics/animals-and-plants/native-vegetation/reports-and-resources/reports>

Milestone number	Milestone	Progress in 2017–18
11. Cultural heritage – no further reporting required – final update was in the 2010–11 report (EPA 2014)		
12. Aboriginal interests		
Milestone 12.4 Agencies: NPWS, FCNSW	NPWS and FCNSW to undertake joint management arrangements with local Aboriginal communities and examination of state forests for co-management arrangements Refer to UNE, LNE and Eden FAs section 5.1.1; Southern FA section 5.1.1	<p>A new formal consultation and land management agreement (Indigenous Land Use Agreement) with the Western Bundjalung People was implemented across public tenures in an area in UNE. This followed recognition of the native title rights and interests of the Western Bundjalung People by the Federal Court in August 2017.</p> <p>NPWS</p> <p>NPWS continued implementation of existing Joint Management agreements for Gulaga and Biamanga Aboriginal-owned parks on the South Coast.</p> <p>In the Eden Forestry Agreement Region, NPWS created:</p> <ul style="list-style-type: none"> • a new Aboriginal-identified Ranger role based in Merimbula • a new Joint Management Officer role based in Narooma to assist with the Gulaga National Park Board of Management • an Aboriginal-identified position to manage the Murrumbidgee Reserve <p>The North Coast Branch:</p> <ul style="list-style-type: none"> • continued to implement existing Joint Management agreements – Arakwal ILUAs 1, 2 & 3, Githabul ILUA, Gaagal Wangan Aboriginal-owned park Board of Management <ul style="list-style-type: none"> • participated in interim consultative arrangements with Bandjalang and Yaegl native title holders • consulted with traditional Aboriginal owners as per the following agreements: Yarriabini Memorandum of Understanding (MOU), Saltwater MOU, Wollumbin Consultative Group. • consulted with the Western Bundjalung People about the exercise of Native Title rights and the management of parks within the Indigenous Land Use Agreement area. <p>Hunter Central Coast Branch continued to implement the existing Joint Management agreements for Woremi Aboriginal-owned park.</p> <p>FCNSW</p> <p>FCNSW welcomes Aboriginal groups to undertake traditional activities in native state forests. All programs identified in previous reports are still underway. In addition, ongoing negotiations for Native Title on state forest (various locations) enable title holders to access the forest for traditional uses and potentially for enterprise development/partnerships.</p>

Milestone number	Milestone	Progress in 2017–18
		<p>FCNSW Hardwood Forests Division has an Aboriginal Partnership Liaison Team of six Aboriginal Liaison Officers who work with Aboriginal communities to further develop these partnership arrangements. Aboriginal groups are regularly contracted to FCNSW for archaeological site surveys as part of the planning process for harvesting and road building and maintenance operations.</p> <p>FCNSW fosters partnerships with Aboriginal groups and communities including arrangements for joint management, activities and community development in state forests. For examples of joint management partnerships see previous reports.</p>
<p>Milestone 12.5</p> <p>Agencies: NPWS, FCNSW</p>	<p>Joint ventures with local Aboriginal communities and development of project plans</p> <p>Refer to UNE, LNE and Eden FAs section 5.1.1; Southern FA section 5.1.1</p>	<p>NPWS</p> <p>NPWS engaged in a range of joint ventures with local Aboriginal communities.</p> <p>At South Coast Branch:</p> <ul style="list-style-type: none"> • Aboriginal Parks Partnership Fund projects include the Cullunghutti Aboriginal Area Targeted Archaeological Survey • 28 Aboriginal people are currently employed and six vacancies in Aboriginal-identified roles are being filled. <p>In the Eden Forestry Agreement Region, NPWS:</p> <ul style="list-style-type: none"> • contributed financially to the Coastal Weeds Project, an interagency project employing Aboriginal community members to undertake weed control along the Far South Coast • is supporting the Eden Local Aboriginal Land Council in the development of an Aboriginal tourism business for the Bundian Way • is a part of the Eden Solution Brokerage Accord and is working towards the revocation of a portion of land in Ben Boyd National Park for the Eden Local Aboriginal Land Council. <p>In the Southern Forestry Agreement Region, NPWS:</p> <ul style="list-style-type: none"> • entered a four-year partnership with the local Aboriginal community to develop an Aboriginal cultural heritage interpretive walk along the southern foreshore of Burrill Lake in Meroo National Park • employed members of the local Aboriginal community to carry out a range of works associated with the interpretive walk and protection of Aboriginal heritage values • maintained Aboriginal Field Officer roles in the Enhanced Bushfire Management Program based in Nowra. <p>At North Coast Branch, NPWS met with the Clybucca Custodians Group about protection of Aboriginal cultural heritage sites. There are 59 Aboriginal people currently employed in North Coast Branch.</p>

Milestone number	Milestone	Progress in 2017–18
		<p>At Hunter Central Coast Branch, Aboriginal Parks Partnership Fund projects include Allowah Cultural Day and Mindaribba Green Team. There are xxx Aboriginal people currently employed in the branch. Allowah Day is an annual cultural day organised for all Aboriginal school students from Year 5 to Year 12 in the Hawkesbury Area (LNE Forestry Agreement Region). Over 150 Aboriginal students from five high schools and six primary schools visited Shaws Creek Aboriginal Place in Yellomundee Regional Park this year.</p> <p>The cultural day allows students to come together, build connections with each other and build networks, while on Country. The day includes a ‘Welcome to Country’ by a Darug Elder, a smoking ceremony and multiple workshops run by local Aboriginal community members who share their knowledge and skills. NPWS staff work with the local Aboriginal and wider community to deliver the program. At a ‘back to country’ day at Tyagarah Nature Reserve in the UNE Forestry Agreement Region, Bundjalung people of Byron Bay visited an important shell midden site and discussed protection measures.</p> <p>Other Aboriginal Parks Partnership projects undertaken in the UNE region were:</p> <ul style="list-style-type: none"> • Connecting and Caring for Miimiga Gaungan Aboriginal Place and Nyami Julgaa on Susan Island near Grafton • New England National Park Cultural Burning and Traditional Bark Canoe Building Workshop/Camp • Saltwater Aboriginal Camping Area Littoral Rainforest Fencing, rehabilitation and pedestrian access project in Saltwater National Park • Hastings Macleay Cultural Camping in Khappinghat National Park. <p>FCNSW</p> <p>FCNSW supports a range of Aboriginal community activities and developments. FCNSW’s Aboriginal partnerships program aims to empower local communities by providing shelters, toilets and water tanks for cultural camping centres in the forest and by improving access roads. Bark slabs and firewood are provided from existing harvesting operations. See previous reports for examples of partnerships and other activities.</p>
<p>13. Aboriginal interests in the Hume and Riverina regions of FCNSW and the South West Slopes region of NPWS</p>		
<p>Milestone 13.2 Agency: FCNSW</p>	<p>Specified enterprise development on state forests within Hume and Riverina Forestry Corporation regions Refer to Southern FA section 5.1.4.2</p>	<p>The <i>Review of NSW Forest Agreements and Integrated Forestry Operations Approvals</i> (DECCW 2010) summarised initiatives. No further update provided by FCNSW for 2017–18.</p>

Milestone number	Milestone	Progress in 2017–18
Milestone 13.5 Agency: FCNSW	FCNSW to initiate specific employment opportunities in the Forestry Corporation Hume and Riverina regions subject to external funding Refer to Southern FA section 5.1.4.4	The <i>Review of NSW Forest Agreements and Integrated Forestry Operations Approvals</i> (DECCW 2010) summarised initiatives. No further update provided by FCNSW for 2017–18.
Milestone 13.7 Agency: NPWS	Specified employment and training opportunities with NPWS Refer to Southern FA section 5.1.4.6	<p>NPWS created:</p> <ul style="list-style-type: none"> • a new Aboriginal-identified Ranger role based in Merimbula • a new Joint Management Officer role based in Narooma to assist with the Gulaga National Park Board of Management • an Aboriginal-identified position to manage the Murrah Flora Reserve. <p>There are 28 Aboriginal people currently employed in South Coast Branch, and six vacancies in Aboriginal-identified roles across the branch that are being filled.</p> <p>Four temporary (three-year) Aboriginal Field Officer positions were maintained with the NPWS Enhanced Bushfire Management Program. Two positions are based in Eden. The other two, in Narooma and Tanja, are jointly funded by OEH and the Biamanga and Gulaga boards of management.</p> <p>An Aboriginal Cadet Ranger and a trainee Aboriginal Field Officer were based in Narooma.</p> <p>A temporary (two-year) Aboriginal Field Officer was maintained for the Southern Ranges Region Enhanced Bushfire Management Program.</p> <p>A temporary full time (two-year) Aboriginal Field Officer (Aboriginal-identified position) was maintained for the South Coast Region Enhanced Bushfire Management Program. Another Aboriginal person was appointed full-time to the program but is not an identified position. These positions are based at Nowra Depot but cover the South Coast region. South Coast region continued employment of full-time Aboriginal Rangers and field officers in all its areas.</p> <p>A temporary part-time Clerk position is continuing for an Aboriginal Community Projects Officer in Nowra.</p> <p>Four Aboriginal rangers from the Bundian Way (Eden) received training in how to conduct a commercial tour operation.</p>

14. Supply arrangements

Milestone number	Milestone	Progress in 2017–18
Milestone 14.1 Agency: FCNSW	Consultation on timber arrangements through the development of plans of operation Refer to UNE, LNE and Eden FAs section 3.4; Southern FA section 4.3	FCNSW regions continue to consult with stakeholders, such as industry and neighbours, when developing the annual plan of operation for each Forestry Agreement region. This milestone is considered ongoing. FCNSW has developed an interactive map ²⁴ to allow stakeholders to view the plans.
15. Supplementing timber supply		
Milestone 15.1 Agency: FCNSW	Supplementary timber supply by actions such as purchasing private lands and/or timber rights to supply high quality large sawlogs and large veneer logs Refer to UNE and LNE FAs sections 2.9.2, 3.3, 3.6, 6.16.2, Att. 10; Eden FA section 2.8.2; Southern FA sections 3.3.3, 3.6	There was no harvesting of private native forests in these regions in 2017–18.
Milestone 15.3 Agency: FCNSW	Establishment of plantations Refer to UNE FA section 3.2; LNE FA sections 3.1, 3.3, 3.6; Southern FA section 3.6, Att. 8	FCNSW established 342.5 hectares of second rotation hardwood plantations in the UNE and LNE regions in the 2017 calendar year.
16. Forest Resource and Management Evaluation System (FRAMES) improvement, inventory, sustainable yield, volume review		
Milestone 16.1 Agency: FCNSW	Continuous FRAMES development program for the UNE, LNE, Eden and Southern regions Refer to UNE, LNE, Eden FAs section 3.5; Southern FA section 3.5 and Att. 6 (7)	Research and development in 2017–18 focused on techniques and tools that use LiDAR for predicting forest metrics at a tactical spatial scale.
Milestone 16.2 Agency: FCNSW	Inventory system for regrowth forests for Eden; improvement to inventory in UNE, LNE and Southern	In 2017, 542 inventory plots were measured, predominantly in the Blackbutt forests in Supply Zone 3 on the North Coast.

<http://fcnsw.maps.arcgis.com/apps/webappviewer/index.html?id=7bc8935c0d924d86b42de5c6c4abdde1>

Milestone number	Milestone	Progress in 2017–18
	Refer to UNE, LNE and Eden FAs section 3.5, Att. 8; Southern FA section 3.5, Att. 6 (6) (e)	
Milestone 16.4 Agency: FCNSW	Monitoring FRAMES through comparison of actual versus predicted volumes Refer to UNE, LNE, Eden section 3.5; Southern FA section 3.5, Att. 6 (6) (f), Att. 6 (7.12)	Actual versus predicted reconciliations have been completed and published for July 2005 to June 2010, July 2008 to June 2013 and July 2010 to June 2015. These reports are available on the FCNSW website ²⁵ . Further reporting has been delayed pending updates to IFOA and RFAs.
Milestone 16.5 Agency: FCNSW	Strategic and operational requirements of sustainable yield systems and processes, review sustainable yield every five years using enhanced FRAMES and publish methods Refer to UNE, LNE and Eden FAs section 3.1; Southern FA Att. 6 (8)	For 2017–18, the focus of analysis was on conventional resource assessments required to meet the 2018 RFA Review for the North Coast, South Coast Tumut and Eden. In future these assessments will be updated every five years.
Milestone 16.7 Agency: FCNSW	Review of wood supply/timber volumes Refer to UNE and LNE FAs sections 3.2, 3.5	FCNSW publishes wood supply in its Annual Reports which are available at www.forestrycorporation.com.au/about/pubs/corporate/annual-report .
17. FCNSW practices including silviculture		
Milestone 17.10 Agency: FCNSW	Liaison by FCNSW with the NSW Department of Planning, NPWS and EPA on proposed forestry operations not covered by an FA or IFOA including environmental assessment and evaluation Refer to UNE, LNE and Eden FAs section 2.2.7	This milestone is considered ongoing as liaison will occur when relevant situations arise. FCNSW did not report significant liaison with key agencies during 2017–18.

²⁵ www.forestrycorporation.com.au/about/pubs/corporate/auditor-generals-performance-audit-of-native-forest-and-hardwood-plantation-operations

Milestone number	Milestone	Progress in 2017–18
18. External auditing processes and reporting results, review processes – final update was in the 2010–11 report (EPA 2014)		
19. Charcoal provisions in NSW Forest Agreements – no further reporting required – final update was in the 2010–11 report (EPA 2014)		
20. Staff training, employment and industry initiatives – no further reporting required – final update was in the 2010–11 report (EPA 2014)		
21. Community awareness and education – no further reporting required – final update was in the 2010–11 report (EPA 2014)		
22. Community consultation – informing the public – no further reporting required – final update was in the 2010–11 report (EPA 2014)		
23. Reporting and monitoring		
Milestone 23.2 Agency: EPA	Annual reports on FAs and tabling reports Refer to UNE, LNE, Eden and Southern FAs section 6.9	Annual reports on the implementation of the NSW Forest Agreements have been completed up to and including the current report. Annual reports have been tabled up to 2016–17. All reports are published on the EPA website after tabling. Each report records progress on: <ul style="list-style-type: none"> • achievement of milestones in the NSW FAs • monitoring of key ESFM criteria and indicators by FCNSW and OEHL, including NPWS • compliance with the IFOAs.
24. Research and data management		
Milestone 24.7 Agency: FCNSW	Operational research trial Refer to Eden FA section 3.1	The project is dependent on the outcomes of the coastal IFOA remake and will be reported in 2018–19.

Appendix 2: Milestones and undertakings – Brigalow–Nandewar region

This appendix reports on progress in 2017–18 in achieving the milestones and undertakings in the Brigalow and Nandewar Community Conservation Area Agreement and the Brigalow–Nandewar IFOA. Milestones and undertakings previously recorded as complete or no longer applicable are not listed.

Milestone/clause	Detail	Timeframe	Responsibility	Progress in 2017–18
Community Conservation Area Agreement Undertakings 4.1 and 13.2	Community Conservation Area Agreement The Community Conservation Council will review the Community Conservation Area Agreement in consultation with the Community Conservation Advisory Committees after seven years. The Council may develop amendments or a replacement Agreement consistent with the Act.	10 June 2016	NPWS	No progress. The initial appointments to the three Community Conservation Advisory Committees lapsed and new committees have not been appointed.
Community Conservation Area Agreement Undertaking 10.1	Plans of management (OEH) OEH to develop plans of management for zones 1, 2 and 3 of the Community Conservation Area In consultation with the Community Conservation Advisory Committees.	Ongoing	NPWS	Of the 62 reserves under zones 1, 2 and 3, five have plans of management adopted by the NSW Minister for the Environment and 16 draft plans have been publicly exhibited. A statement of management intent is in place for 37 reserves. Statements of management intent are in preparation for the remaining four reserves (all Community Conservation Zone 2 – Aboriginal Areas).
Brigalow Nandewar Green Firewood Strategy	No further reporting is required, see 2013–14 report (EPA 2017b).			
IFOA clauses 37(1) to (5)	37. Sustainable yield study for hardwood species	Study to be undertaken within the first five years of	FCNSW	Tactical inventory is progressively collecting field data that will enable such a study to be undertaken once a

Milestone/clause	Detail	Timeframe	Responsibility	Progress in 2017–18
	<p>(1) FCNSW is to conduct (over the first five years of the term of this approval) a study of the sustainable yield for logs and other timber products from tableland hardwood and western hardwood species (other than western ironbark trees) in the Brigalow–Nandewar region for the remainder of the term of this approval.</p> <p>See IFOA for full undertakings 37 (1) to (5).</p>	<p>commencement of the IFOA (by October 2015)</p>		<p>sufficient sample has been collected. This will be supported by inventory collected from the remeasure of Continuous Forest Inventory (CFI) plots planned for 2018–19.</p> <p>This data is required prior to the five-year statutory review of the IFOA, which will commence in 2020.</p>
<p>IFOA clauses 41(1) to (7)</p>	<p>41. Travelling stock reserves</p> <p>FCNSW to draft a plan for managing logging operations and submit this plan to the EPA.</p> <p>See IFOA for full undertakings 41(1) to (7).</p>	<p>FCNSW plan for managing logging operations on travelling stock reserves in the Brigalow–Nandewar region</p>	<p>FCNSW (EPA may provide written comments)</p>	<p>Finalisation of the plans will be considered in the five-year statutory review of the IFOA, which will start in 2020. The delay in the review is due to the NSW Government’s decision to postpone it until after the finalisation of the Coastal IFOA in 2018.</p>
<p>IFOA clauses 44(1) to (3)</p>	<p>44. Assessment of regeneration in silvicultural management</p> <p>(1) FCNSW must assess the extent and nature of regeneration in areas of land within the Brigalow–Nandewar region that are logged during the term of this approval. Assessments must be carried out on a regular and periodic basis.</p> <p>See IFOA for full undertakings 44 (1) to (3).</p>	<p>The first such assessment is to be completed by the end of 2013</p>	<p>FCNSW</p>	<p>Assessment of regeneration is now being undertaken as part of the FCNSW Western Inventory and growth monitoring program, using fixed plots, remote sensing and post harvesting assessment tools. This has been ongoing for Brigalow since December 2014.</p>
<p>IFOA clauses 46 (1) to (3)</p>	<p>46. Pest animal management plan – review and amendment</p> <p>(1) FCNSW must review the pest animal management plan applying to state forests within the Brigalow–Nandewar region regularly and periodically (and at least every five years from the date of its approval for implementation).</p>	<p>The Pest Animal Management Plan 2006 Western Region NFOB (referred to in clause 45) must be reviewed by 30 June 2011</p>	<p>FCNSW</p>	<p>Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.</p>

Milestone/clause	Detail	Timeframe	Responsibility	Progress in 2017–18
	See IFOA for full undertakings 46(1) to (3).			
IFOA clauses 49 (1) to (3)	<p>49. Weed management plan – review and amendment</p> <p>FCNSW must review the weed management plan applying to state forests within the Brigalow–Nandewar region regularly and periodically (and at least every five years from its approval for implementation).</p> <p>See IFOA for full undertakings 49(1) to (3).</p>	The Weed Management Plan 2006 Western Region NFOB (referred to in clause 48) must be reviewed by 30 June 2011	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.
IFOA clauses 52 (1) to (3)	<p>52. Grazing management plan – review and amendment</p> <p>(1) FCNSW must review its grazing management plan applying to state forests within the Brigalow–Nandewar region regularly and periodically (and at least every five years from the date of its approval for implementation).</p> <p>See IFOA for full undertakings 52 (1) to (3).</p>	The Grazing Management Plan 2006 Western Region NFOB (referred to in clause 51) must be reviewed by 30 June 2011	FCNSW	Review of the current plan (1 July 2014– 30 June 2019) not due until 2019.
IFOA clauses 57 (1) to (3)	<p>57. Burning operations management plan – review and amendment</p> <p>(1) FCNSW must review the burning operations management plan applying to state forests within the Brigalow–Nandewar region regularly and periodically (and at least every five years from the date of its approval for implementation).</p> <p>See IFOA for full undertakings 57 (1) to (3).</p>	Regularly and periodically – and at least every five years from the date of its approval for implementation	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.
IFOA clauses 60 (1) to (3)	<p>60. Road and fire trail management plan – review and amendment</p>	Regularly and periodically and at least every five years	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.

Milestone/clause	Detail	Timeframe	Responsibility	Progress in 2017–18
	(1) FCNSW must review the road and fire trail management plan applying to the Brigalow–Nandewar region regularly and periodically (and at least every five years from its approval for implementation). See IFOA for full undertakings 60 (1) to (3).	from its approval for implementation		
IFOA clauses 80 to 88	80. Annual reports on forestry operations (1) FCNSW is to provide EPA and DPI (Fisheries) with a report on forestry operations undertaken in the Brigalow–Nandewar region in each financial year. The information that must be included in the annual report is set out in clauses 81 to 87. See IFOA for full undertakings 80 to 88.	The annual report for a financial year is to be provided to the EPA and NSW Fisheries by 1 September in the next financial year (A copy of each annual report under this Division is to be kept by FCNSW for the remainder of the term of this approval.)	FCNSW (to be confirmed by the EPA and Fisheries)	The EPA expects to receive FCNSW’s 2017–18 annual report on forestry operations in the western region, which includes the Brigalow-Nandewar region, in September 2018.
IFOA clauses 149 to 151	149. Species management plans for certain threatened plant species FCNSW is to prepare a species management plan for each of the following threatened species of plant to assist in identifying, managing and controlling any adverse impacts of forestry operations on the species: (a) <i>Bertya</i> sp. A Cobar-Coolabah (also named <i>Bertya</i> opponents) (b) <i>Diuris tricolor</i> (c) <i>Pomaderris queenslandica</i> (d) <i>Pterostylis cobarensis</i> (e) <i>Swainsona recta</i> (f) <i>Swainsona sericea</i> . See IFOA for full undertakings 149–151.	Within 12 months of the commencement approval and to be submitted to the EPA	FCNSW	Draft species management plans have been prepared. FCNSW is reviewing the EPA’s previous comments in consultation with experts. The drafts also require substantial updates to: <ul style="list-style-type: none"> • address new legislative requirements arising from the <i>Biodiversity Conservation Act 2016</i> • ensure that proposed actions reflect new NSW Wildlife Atlas species records. A significant number of records post-date the original drafts. Finalisation of the plans will be considered in the five-year statutory review of the IFOA, which will commence in 2020. The delay in this review is due to the NSW Government’s decision

Milestone/clause	Detail	Timeframe	Responsibility	Progress in 2017–18
				to postpone it until after finalisation of the Coastal IFOA in 2018.
IFOA clauses 152 to 154	<p>152. Monitoring plans for plant species</p> <p>To review and approve the development of FMPs for the following species: <i>Acacia jucunda</i>, <i>Monotaxis macrophylla</i>, <i>Phebalium glandulosum</i> subsp. <i>eglandulosum</i>.</p> <p>See IFOA for full undertakings 152–154.</p>	Within 12 months of the commencement approval and to be submitted to the EPA	FCNSW	As for clauses 149 to 151 above.
IFOA clauses 149, 152 and 259	<p>Approved plans</p> <p>Intention to amend IFOA to give effect to approved plans under clauses referred to above. This will result in amendment and ultimately omission of clause 259.</p>	Potentially within 12 months of the commencement approval	EPA and FCNSW	Subject to finalisation of actions 149 and 152.
IFOA clause 155	<p>155. Strategic monitoring and assessment program</p> <p>FCNSW is to develop and undertake a strategic monitoring and assessment program in the Brigalow–Nandewar region:</p> <p>(a) to improve knowledge of the habitat requirements of threatened species within the region, and</p> <p>(b) to monitor populations of native animals and plants within the region and assess the extent to which any changes in population levels may be attributable to forest management and practice.</p> <p>See IFOA for full undertaking 155.</p>	FCNSW is to develop the strategic monitoring and assessment program in consultation with the EPA before the end of the 12-month period following the commencement of this approval	FCNSW	<p>This program is considered as part of the statewide <u>NSW Forest Monitoring and Improvement Program</u>.²⁶</p> <p>The timing of delivery of the monitoring and assessment programs are linked to this initiative. In the interim, FCNSW implemented an interim monitoring framework from October 2014 in the Pilliga forests. This work is ongoing and will not be reported in future.</p>

²⁶ <https://www.nrc.nsw.gov.au>

Milestone/clause	Detail	Timeframe	Responsibility	Progress in 2017–18
IFOA clauses 233 (1) to (4)	<p>Auditing methodology for the retention of trees</p> <p>(1) FCNSW is to develop, in consultation with the EPA, a methodology for auditing compliance with the requirements for the retention of trees for the purposes of this Part (namely, clauses 197 2), 198, 199, 200, 206 and 216). FCNSW is to endeavour to have in place an auditing methodology (approved by the EPA) within 12 months of the commencement of this approval.</p> <p>See IFOA for full undertaking 233 1) to (4).</p>	Within 12 months of the commencement approval	EPA and FCNSW	<p>A draft methodology has been prepared by FCNSW.</p> <p>To ensure parity across the state, if possible, an agreed audit methodology will aim to be consistent with any tree retention assessment requirements that are developed through the coastal IFOA remake process.</p> <p>The methodology will be finalised during the first five-year statutory review, which will commence in 2020. The delay in the commencement of this review is due to the NSW Government decision to defer the review until finalisation of the Coastal IFOA in 2018.</p>

Appendix 3: Milestones and undertakings – Riverina Red Gum IFOA

This appendix reports on progress in 2017–18 in achieving the milestones and undertakings in the Riverina Red Gum IFOA. Milestones and undertakings previously recorded as complete or no longer applicable are not listed.

IFOA clauses	Detail	Timeframe	Responsibility	Progress in 2017–18
26	Five-year review Five-year review of approval, consideration on minimum basal area retention, new TSC act listings, drainage protection features	January 2016	Ministers (both agencies)	The five-year review will commence in 2019. For more information, see the NSW Forestry Industry Roadmap . ²⁷
7 (1) to (4)	Review early thinning operations (other than in the western lands leases) (1) A review of the early thinning program referred to in clause 5 will be conducted in the period 1 July 2012 to 31 December 2012 to determine a sustainable annual maximum amount of river red gum residue that may be produced from early thinning operations, taking into account the silvicultural and environmental impacts and benefits of the program and the extent of the resource. (2) The terms of reference for the review will be set jointly by the EPA and Forestry Corporation. See IFOA for full undertakings 27 (1) to (4)	Prior to 1 July 2012 – review will be conducted from 1 July 2012 to 31 December 2012	Joint FCNSW and EPA review conducted by independent scientific panel (membership mutually agreed by agencies) – jointly funded	Remote sensing data capture (LiDAR) and remeasure of permanent growth plots was undertaken March–June 2015. This information will be used to undertake yield modelling to predict sustainable timber volumes beyond 2019. This milestone will be considered as part of the Western IFOA review, which will commence in 2020.

²⁷ <https://www.dpi.nsw.gov.au>

IFOA clauses	Detail	Timeframe	Responsibility	Progress in 2017–18
28 (2), (3)	<p>Optimal basal area retention rate trial</p> <p>(2) FCNSW may carry out a trial in accordance with this clause to determine the optimal rate of basal area retention for the purposes of clause 43, in a range between six and 12 square metres per hectare, having regard to the need for both ecologically sustainable forest management and a sustainable timber supply.</p> <p>See IFOA for full undertakings 28(2) and (3)</p>	<p>Note: This research will inform the five-year review referred to in clause 26.</p> <p>Also part of RRG Structural Adjustment Package Agreements – to feed into Adaptive Management Program (by June 2013)</p>	<p>FCNSW (lead) must consult with the EPA as to the area selected and parameters of the trial</p>	<p>This milestone is voluntary and will be reported against if FCNSW chooses to initiate a trial.</p>
31	<p>Field protocol for measuring distances</p> <p>Develop a field protocol for measuring distances specified in clauses 104, 105 and 106.</p>	<p>To be undertaken within 12 months of commencement (due 1 January 2012)</p>	<p>Joint FCNSW, Fisheries and the EPA</p>	<p>As previously reported, a draft protocol has been prepared. The protocol will remain in draft until the feasibility of using improved technology around stream identification (including mapping using LiDAR) has been considered.</p> <p>FCNSW will continue using the interim conditions for measuring distances until the protocol has been finalised.</p> <p>The methodology will be finalised during the first five-year statutory review, which will commence in 2020. The delay in the commencement of this review is due to the NSW Government decision to defer the review until finalisation of the Coastal IFOA in 2018.</p>

IFOA clauses	Detail	Timeframe	Responsibility	Progress in 2017–18
47 (4), (6) and (7)	<p>Travelling stock reserves</p> <p>FCNSW must prepare a plan for managing operations on travelling stock reserves. The EPA and Local Land Services (LLS) to be consulted.</p> <p>See IFOA for full undertakings 47 (1) to (9)</p>	To be undertaken within 12 months of commencement (due 1 January 2012); the EPA to comment on FCNSW draft plan within two months of receiving draft.	FCNSW (lead) and OEH and LLS consulted	Finalisation of the plans will be considered in the five-year statutory review of the IFOA, which will start in 2020. The delay in the review is due to the NSW Government's decision to postpone it until after the finalisation of the Coastal IFOA in 2018.
50 (1) to (4)	<p>Assessment of regeneration in silvicultural management</p> <p>FCNSW must assess the extent and nature of regeneration in areas of land logged during the approval. OEH to be consulted regarding assessment of regeneration in silvicultural management.</p> <p>See IFOA for full undertakings 50 (1) to (4)</p>	To be undertaken before carrying out the first assessment, which is due by 31 December 2013	FCNSW (lead) and OEH consulted	Assessment of regeneration now occurs as part of the FCNSW Western Inventory and growth monitoring program, using fixed plots, remote sensing and post harvesting assessment tools.
52 (1) to (3)	<p>Pest animal management plan – review and amendment</p> <p>(1) FCNSW must review the pest animal management plan applying to state forests within the Riverina state forests, regularly and periodically (and at least every five years from the date of its approval for implementation).</p> <p>See IFOA for full undertakings 52 (1) to (3)</p>	Regularly and periodically and at least every five years from the date of its approval for implementation	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.
55 (1) to (3)	<p>Weed management plan – review and amendment</p> <p>(1) FCNSW must review the weed management plan applying to state forests within the Riverina state forests regularly and periodically (and at least every five years from its approval for implementation).</p> <p>See IFOA for full undertakings 55 (1) to (3)</p>	Regularly and periodically and at least every five years from the date of its approval for implementation	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.

IFOA clauses	Detail	Timeframe	Responsibility	Progress in 2017–18
58 (1) to (3)	<p>Grazing management plan – review and amendment</p> <p>(1) FCNSW must review its grazing management plan applying to state forests within the Riverina state forests regularly and periodically (and at least every five years from the date of its approval for implementation).</p> <p>See IFOA for full undertakings 58 (1) to (3)</p>	<p>Regularly and periodically and at least every five years from the date of its approval for implementation</p>	FCNSW	<p>Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.</p>
63 (1) to (3)	<p>Burning operations management plan – review and amendment</p> <p>(1) FCNSW must review the burning operations management plan applying to state forests within the Riverina state forests regularly and periodically (and at least every five years from the date of its approval for implementation).</p> <p>See IFOA for full undertakings 63 (1) to (3)</p>	<p>Regularly and periodically and at least every five years from the date of its approval for implementation</p>	FCNSW	<p>Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.</p>
66 (1) to (3)	<p>Road and fire trail management plan – review and amendment</p> <p>(1) FCNSW must review the road and fire trail management plan applying to the Riverina state forests regularly and periodically (and at least every five years from its approval for implementation).</p> <p>See IFOA for full undertakings 66 (1) to (3)</p>	<p>Regularly and periodically and at least every five years from the date of its approval for implementation</p>	FCNSW	<p>Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.</p>
71 (1) to (5)	<p>Preparation of annual program of forestry operations</p> <p>FCNSW must prepare annual program of operations for each financial year and forward a copy of the annual program to the EPA and DPI (Fisheries) before the commencement of that financial year.</p> <p>See IFOA for full undertakings 71 (1) to (5)</p>	<p>First one due 1 July 2011</p>	<p>FCNSW (lead) forward to the EPA and Fisheries</p>	<p>The EPA expects to receive the FCNSW 2017–18 annual program of forestry operations for the Brigalow-Nandewar, South West Cypress and Riverina Red Gum IFOAs in July 2018.</p>
82	<p>FCNSW to provide monthly advice on operations</p>	<p>Monthly reports commenced on 1 April 2011</p>	<p>FCNSW (lead)</p>	<p>Completed. This is an ongoing commitment and will not be reported in future.</p>

IFOA clauses	Detail	Timeframe	Responsibility	Progress in 2017–18
86 to 91	Annual reports on forestry operations Annual report for financial year must be given to the EPA and Fisheries See IFOA for full undertakings 86 to 91	By 1 September in next financial year (i.e. first report due 1 September 2012)	FCNSW (lead); report must be given to the EPA and Fisheries	The EPA expects to receive the FCNSW 2017–18 annual report on forestry operations in the western region, which includes the Riverina Red Gum region, in September 2018.
138, 140–143	New records to be forwarded to the EPA (1) FCNSW must advise the EPA of any record of a threatened species of animal or plant made or found in the Riverina state forests during the term of this approval ('new record') if FCNSW considers it may be suitable for inclusion on the Atlas of NSW Wildlife (referred to in clause 137). See IFOA for full undertakings related to new records	Within three months of the new record being made or two working days for species listed in cl. 140	FCNSW – must notify the EPA	New records are provided routinely (generally every three months) via the agreed data transfer arrangements between FCNSW and the EPA.
238–243	Environment Protection Licence annual return In addition to the annual report required (cls 86 to 91), FCNSW must prepare and give the EPA an annual return relating to its EPL.	Calendar years – from the first year within 60 days of end of year (i.e. 1 March 2012)	FCNSW – must submit to the EPA	The EPA received FCNSW's EPL annual return in February 2018.

Appendix 4: Milestones and undertakings – South Western Cypress IFOA

This appendix reports on progress in 2017–18 in achieving the milestones and undertakings in the South Western Cypress IFOA. Milestones and undertakings previously recorded as complete or no longer applicable are not listed.

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
32, 142, 144, 148, 178	New evidence of species FCNSW to notify OEH of its discovery of new evidence of plant and animal species.	Within three months of the new record being made or found or two working days for species listed in cl. 144	FCNSW	No action reported as being required for 2017–18.
41 (2), (4), (6) and (7)	Travelling stock reserves FCNSW to prepare a plan managing logging operations on TSRs. The EPA to be consulted regarding draft plan for managing operations on travelling stock reserves.	To be undertaken within 12 months of commencement (Due 1 July 2012) FCNSW cannot carry out operations on TSRs until it has considered written comments on the plan from the EPA. The EPA to comment on FCNSW draft plan within two months of receiving draft.	FCNSW (lead) LLS and the EPA consulted	Finalisation of the plans will be considered in the five-year statutory review of the IFOA, which will start in 2020. The delay in the review is due to the NSW Government's decision to postpone it until after the finalisation of the Coastal IFOA in 2018.

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
44	Assessment of regeneration in silvicultural management FCNSW must assess the extent and nature of regeneration in areas of land within the South Western Cypress region that are logged during the term of this approval. The EPA to be consulted regarding an assessment of regeneration in silvicultural management.	To be undertaken within the first five years of the IFOA (due by 31 December 2015) with the EPA consulted before carrying out the first assessment.	FCNSW (lead) and the EPA consulted	Assessment of regeneration now occurs as part of the FCNSW Western Inventory and growth monitoring program, using fixed plots, remote sensing and post harvesting assessment tools.
46, 49, 52, 57, 60	Plan reviews for South Western Cypress region Forestry Corporation must review the pest animal management, weed, grazing, road management, and burning operation plans applying to state forests within the South Western Cypress region regularly and periodically (and at least every five years from the date of its approval for implementation).	By 30 June 2016 and at least every five years for pest animal management, weed, grazing, road management plans By 30 June 2017 for review of burning operations plan Preparation of first burning operations plan – see 55 below	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.
55	Preparation of first burning operations plan within 12 months of commencement Forestry Corporation must prepare (and approve for implementation) a burning operations management plan that complies with cl. 54 within 12 months of the commencement of this approval. The EPA and Fisheries to be invited to comment on a draft burning operations management plan.	Plan is to be finalised within 12 months of commencement (due by 1 July 2012)	FCNSW (lead), Fisheries and the EPA (comments)	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
65	Preparation of annual program of forestry operations Forestry Corporation must prepare annual program of operations for each financial year and must forward the annual program to the EPA and DPI (Fisheries) before the commencement of that financial year. See IFOA for full undertakings 65 (1) to (5)	First one due 1 July 2011	FCNSW (lead) forward to the EPA and Fisheries	The EPA expects to receive the FCNSW 2017–18 annual program of forestry operations for the Brigalow-Nandewar, South West Cypress and Riverina Red Gum IFOAs in July 2018.
76	Monthly advice on operations FCNSW to provide monthly advice on operations	Monthly	FCNSW (lead)	The process of reporting is in place and reporting continues as per the requirements of the IFOA.
80 to 88	Annual reports on forestry operations Annual report for financial year must be given to the EPA and Fisheries. See IFOA for full undertakings 80 to 88	By 1 September in next financial year (i.e. first report due 1 September 2012)	FCNSW (lead); report must be given to the EPA and Fisheries	The EPA expects to receive the FCNSW 2017–18 annual report on forestry operations, which covers the Brigalow–Nandewar, South West Cypress and Riverina Red Gum regions in September 2018.

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
149 and 151	<p>Preparation of species management plans</p> <p>FCNSW must prepare and forward species management plans for the plant species referred to in cl. 149 to the EPA before the end of the 12-month period following the commencement of this approval.</p> <p>The species are: <i>Austrostipa metatoris</i>, <i>A. wakoolica</i>, <i>Diuris tricolor</i>, <i>Pterostylis cobarensis</i>, <i>Swainsona sericea</i>.</p> <p>Note: It is contemplated that if the EPA approves the contents of a species management plan, the IFOA will be amended to give effect to the plan. The EPA and FCNSW intend that the species management plans required will be finalised and approved within 12 months of the commencement of the IFOA.</p>	12 months of the commencement (due by 1 July 2012)	FCNSW (lead) and the EPA approve	<p>Draft species management plans have been prepared. FCNSW is reviewing the EPA's previous comments in consultation with experts. The drafts also require substantial updates to:</p> <ul style="list-style-type: none"> • address new legislative requirements arising from the <i>Biodiversity Conservation Act 2016</i> • ensure that proposed actions reflect new NSW Wildlife Atlas species records as a significant number of records post-date the original drafts. <p>Finalisation of the plans will be considered in the five-year statutory review of the IFOA, which will commence in 2020. The delay in this review is due to the NSW Government's decision to postpone it until after finalisation of the Coastal IFOA in 2018.</p>
155	<p>Strategic monitoring and assessment program (SM&AP)</p> <p>FCNSW is to develop and undertake a strategic monitoring and assessment program in the South Western Cypress region.</p>	Within 12 months of the commencement (due by 1 July 2012)	FCNSW (lead) and OEH	<p>This program will be considered as part of a statewide NSW Forest Monitoring and Improvement Program.²⁸</p> <p>The timing of delivery of the monitoring and assessment programs is linked to this initiative.</p>

²⁸ <https://www.nrc.nsw.gov.au>

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
233 (1) to (4)	<p>Auditing compliance with Part (namely, clauses 198 and 216) – methodology to be developed</p> <p>(1) FCNSW is to develop, in consultation with the EPA, a methodology for auditing compliance with the requirements for the retention of trees for the purposes of this Part (namely cls 198 and 216). FCNSW is to endeavour to have in place an auditing methodology (approved by the EPA) within 12 months of the commencement of this approval.</p> <p>(4) The methodology developed under this clause does not have effect unless and until the EPA has approved it in writing. It may be amended from time to time with the written approval of the EPA.</p> <p>See IFOA for complete 233 (1) to (4)</p>	12 months of the commencement (due by 1 July 2012)	FCNSW (lead) and the EPA (approval)	<p>A draft methodology has been prepared by FCNSW.</p> <p>If possible, an agreed audit methodology will aim to be consistent with any tree retention assessment requirements that are developed through the coastal IFOA remake process.</p> <p>The methodology will be finalised during the first five-year statutory review, which will commence in 2020. The delay in the commencement of this review is due to the NSW Government decision to defer the review until finalisation of the Coastal IFOA in 2018.</p>

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
240	<p>Burning operations – annual planning and mapping within five years</p> <p>Before including a burning operation in an annual program of forestry operations, FCNSW must complete a comparative assessment of the environmental impact of carrying or not carrying out the operation.</p> <p>FCNSW must, within the five years of the commencement of this approval:</p> <p>(a) identify and map vegetation types within the state forests of the South Western Cypress region and prepare post-fire age class distribution maps for those vegetation types, and</p> <p>(b) develop a theoretical post-fire age class distribution model for those vegetation types to enable a comparison to be made with actual post-fire age class distribution for those types, in accordance with the process outlined in the FCNSW Corporate Fuel Management Plan 2008 (Chapter 6.2.2).</p> <p>See IFOA for full 240 (1) to (5)</p>	Annual assessment and mapping within five years (due July 2016)	FCNSW	Review of the current plan (1 July 2014 – 30 June 2019) not due until 2019.
306 and 307	<p>Pollution incident notification</p> <p>Relating to breaches of the terms of the EPL (in carrying out logging operations and ancillary road construction). Notification and reports of pollution incidents causing or threatening material harm to the environment.</p>	<p>Details relating to a breach must be included on the register within 14 days of FCNSW becoming aware of the breach.</p> <p>Written notification within seven days of FCNSW becoming aware of the incident.</p>	FCNSW (lead) and the EPA notified	The EPA received FCNSW’s EPL annual report in February 2018. This report includes information about pollution incidents and breaches.

IFOA Clauses	Detail	Timeframe	Responsibility	Progress for 2017–18
309 to 314	Special annual return to be given to the EPA In addition to the annual report required to be prepared under Chapter 1 of the IFOA, FCNSW is to prepare and give to the EPA an annual return relating to logging operations and ancillary road construction regulated by the terms of the EPL.	Within 60 days of the end of each calendar year (first date 1 March 2012)	FCNSW (lead) and the EPA notified	The EPA received FCNSW’s special annual return relating to logging operations and ancillary road construction in February 2018.

Appendix 5: IFOAs operating in NSW at June 2018

Forest Agreements and IFOAs for coastal regions

Forest Agreement/IFOA	Commenced	In place until
Eden region Forest Agreement	5 March 1999	4 March 2019
LNE region Forest Agreement	5 March 1999	4 March 2019
UNE region Forest Agreement	5 March 1999	4 March 2019
Southern region Forest Agreement	3 May 2002	3 May 2022
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

IFOAs established for western forest regions

Agreement/IFOA	Commenced	In place until
Brigalow and Nandewar Community Conservation Area Agreement (CCA Agreement)	11 June 2009	10 June 2016
Brigalow–Nandewar IFOA	23 October 2010	31 December 2025
Riverina Red Gum IFOA	1 January 2011	31 December 2030
South Western Cypress IFOA	1 July 2011	31 December 2025

Acronyms and abbreviations

cl.	Clause from an Act or other legislation
DEE	Department of the Environment and Energy
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ESFM	ecologically sustainable forest management
FA	NSW Forest Agreement
FCNSW	Forestry Corporation of NSW
FL	Fisheries Licence
FMZ	Forest Management Zone
Forestry Corporation	Forestry Corporation of NSW
FRAMES	Forest Resource and Management Evaluation System
ha	hectares
IFOA	Integrated Forestry Operations Approval granted under the <i>Forestry Act 2012</i>
ILUA	Indigenous Land Use Agreement
LALC	Local Aboriginal Land Council
LIDAR	Light Detection and Ranging
LNE	Lower North East region
LLS	Local Land Services
m	metres
m ³	cubic metres
NPWS	National Parks and Wildlife Service (within OEH)
POEO Act	Protection of the Environment Operations Act 1997
PNF	private native forestry
PVP	property vegetation plan
SOE	State of the Environment
SOFR 2018	<i>State of the Forests Report 2018</i>
TOR	terms of reference
TSC Act	<i>Threatened Species Conservation Act 1995</i>
TSL	Threatened Species Licence
t	tonnes
UNE	Upper North East region

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