Independent Forestry Panel

Public submission

NAME REDACTED Submission ID: 204137

Organisation:	*Animal Liberation*
Location:	*New South Wales*
Supporting materials uploaded:	*Attached overleaf*

Submission date: 10/11/2024 3:54:35 PM

Animal Liberation
Compassion without compromise

Independent Forestry Panel

Protecting NSW's native forests: a submission on forestry practices and regulatory reform

DOCUMENT DETAILS

Animal Liberation. 2024. A submission by Animal Liberation in response to the Independent Forestry Panel. Submission prepared by Alex Vince and Lisa J Ryan.

ABOUT ANIMAL LIBERATION

Animal Liberation has worked to permanently improve the lives of all animals for over four decades. We are proud to be Australia's longest serving animal rights organisation. During this time, we have accumulated considerable experience and knowledge relating to issues of animal welfare and animal protection in this country. We have witnessed the growing popular sentiment towards the welfare of animals, combined with a diminishing level of public confidence in current attempts, legislative or otherwise, to protect animals from egregious, undue, or unnecessary harm. Our mission is to permanently improve the lives of all animals through education, action, and outreach.

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Independent Forestry Panel
Via email: forestryiap@ipcn.nsw.gov.au.

11 October 2024

On behalf of Animal Liberation, we welcome the opportunity to submit our response to the Independent Forestry Panel's inquiry into forestry operations in New South Wales (NSW).

Our submission comprehensively addresses the sustainability of current and future forestry operations in NSW and the environmental and cultural values of forests. Key points in our submission include:

1. An analysis of the historical context and current state of NSW forests, highlighting the significant loss and degradation of forest ecosystems since colonisation;

2. A critical examination of the policy framework, particularly the Regional Forest Agreements, and their limitations in balancing forest access with biodiversity conservation;

3. An assessment of the environmental impacts of forestry operations, including biodiversity loss, increased fire risk, carbon emissions, and effects on water and soil quality;

4. An analysis of the economic and social implications of current forestry practices;

5. An evaluation of the threats to biodiversity, with a focus on forest-dependent species and specific case studies on koalas, pollinators, and the critical role of hollow-bearing trees;

6. An analysis of oversight and enforcement issues in the forestry sector, drawing on multiple independent reports, audits, and other analyses;

7. Recommendations for improving the sustainability of forestry operations in NSW, including an immediate commitment to end native forest logging and a transition plan towards more sustainable practices.

We believe our response provides a comprehensive and evidence-based analysis of the current challenges facing NSW forests and offers constructive recommendations for a more sustainable future.

We would be happy to provide any additional information or clarification the Panel may require.

Sincerely,

[redacted] [redacted]
[redacted] [redacted]

LIST OF ABBREVIATIONS

AONSW	Audit Office of NSW
DAFF	Department of Agriculture, Fisheries and Forestry (Cth)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cth)
DPI	Department of Primary Industries (NSW)
EDO	Environmental Defender's Office
EPA	Environmental Protection Authority (NSW)
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cth)
ESFM	Ecologically sustainable forest management
FAO	Food and Agriculture Organisation of the United Nations
FCNSW	Forestry Corporation of NSW
ha	Hectare
IFOA	Integrated Forest Operation Approvals
IPCC	Intergovernmental Panel on Climate Change
KTP	Key Threatening Process(es)
NCC	Nature Conservation Council
NPANSW	National Parks Association of NSW
NPI	National Plantation Index
OEH	Office of Environment and Heritage (NSW)
PAU	Plantation Assessment Unit
PNF	Private Native Forestry
PRA	*Plantations and Reafforestation Act 1999* (NSW)
RFA	Regional Forest Agreements
UNFCC	United Nations Framework Convention on Climate Change
WHA	Wildlife Health Australia

EXECUTIVE SUMMARY

This submission addresses the sustainability of current and future forestry operations in NSW and the environmental and cultural values of forests. Key points and considerations in this response include:

1: HISTORICAL CONTEXT AND CURRENT STATE

NSW has lost over 50% of its original forests and woodlands since colonisation. Despite this significant loss, NSW remains the second most forested state in Australia, supporting diverse ecosystems and numerous threatened species.

2: POLICY FRAMEWORK LIMITATIONS

The Regional Forest Agreements, while aiming to balance forest access with biodiversity conservation, have been criticised for exemptions from environmental protections and inconsistent implementation.

3: ENVIRONMENTAL IMPACTS

Forestry operations in NSW contribute significantly to biodiversity loss, increased fire risk, carbon emissions, and water and soil degradation. Approximately 435,000 hectares of native forest across habitats of 143 threatened species have been degraded by logging.

4: ECONOMIC AND SOCIAL IMPLICATIONS

Current forestry practices affect tourism, recreation, and community access to forests, potentially damaging Australia's international reputation. These practices also negate the purpose of public access to forests and contradict the government’s own claims about forest conservation and recreational use. By limiting public access and degrading forest ecosystems, logging operations undermine the multiple-use mandate of public forests, which includes providing opportunities for recreation, education, and nature appreciation.

5: BIODIVERSITY THREATS

With 45% of Australia's forest-dwelling animal species being forest-dependent, logging continues to threaten the habitats of approximately 150 threatened native species in NSW.

6: ANIMAL WELFARE CONCERNS

The clearing of land causes significant animal welfare issues, including direct mortality and prolonged suffering of survivors. These impacts are often overlooked in environmental decision-making processes.

7: REGULATORY CHALLENGES

Oversight and enforcement of forestry regulations face significant issues, including resource limitations and equipment shortages hampering effective monitoring. Additionally, there is increasing conflict between forestry operations and nature enthusiasts who find their recreational activities disrupted or the natural areas they value degraded by logging activities. This growing tension highlights the need for better balancing of stakeholder interests.

8: FUTURE CHALLENGES

Future challenges in NSW's forestry sector encompass a range of interconnected issues. These include the often-underestimated cumulative impacts of logging on forest ecosystems, limited oversight of private native forests, and the need to adapt to climate change. The industry must also navigate technological advancements, shifting market demands, and diverse stakeholder interests. Addressing these challenges requires a holistic, adaptive approach to forest management that balances economic needs with environmental conservation and social values.

SECTION ONE

BACKGROUND AND INTRODUCTION

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1.1 INTRODUCTION

Forests are integral to both human well-being and global ecological systems, serving critical functions in water cycles, carbon storage, wood production, and biodiversity conservation (Bormann and Likens 1979; Lindenmayer and Franklin 2002; Perry et al. 2008; Fernholz and Bowyer 2015). However, the management and use of forests often create conflicts between these various roles, particularly when economic objectives such as wood production clash with environmental goals like biodiversity protection, carbon stock maintenance, or water resource preservation (Keith et al. 2014; Watson et al. 2018; Taylor et al. 2019; Ceccherini et al. 2020; Morgan et al. 2021).

Ecologically sustainable forest management (ESFM) has emerged as a key objective for many management agencies, aiming to balance these competing interests (DAFF 2019a; Angelstam et al. 2021). However, achieving ESFM in practice presents significant challenges due to the complex interplay of ecological, economic, and social factors (Lindenmayer and Franklin 2003; Betts et al. 2021; Puettmann et al. 2008). This complexity is further compounded when forest management adheres to principles of maximum sustained yield or highly regulated forest concepts, which can conflict with broader sustainability goals (Oliver and Larson 1996; Lindenmayer and Taylor 2022).

The challenge of implementing ESFM reflects a broader issue in sustainability policy: balancing current needs with the welfare of future generations (Elliott 2005; Kuhlman and Farrington 2010). As highlighted in a report by the Australian Treasury, sustainable policies must ensure that the actions of the present generation do not diminish the well-being of future ones - a principle particularly pertinent to the management of finite resources like forests (Carmody 2012).

Australia's forests exemplify these challenges and opportunities. Covering approximately 134 million hectares (‘ha’) and ranking as the world's seventh-largest forest estate, these ecosystems provide an array of crucial services (Carnegie et al. 2022; DAFF 2024). The predominant forest types include Eucalypts (101 million ha), Acacia (11 million ha), and Melaleuca (6 million ha), complemented by smaller areas of rainforest and other forest types (Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee 2018). Additionally, about 2 million hectares of plantations, mostly privately owned, contribute significantly to the timber industry (Carnegie et al. 2022).

However, the economic importance of these forests must be balanced against their critical role in biodiversity conservation. Approximately 45% of Australia's forest-dwelling animal species are forest-dependent, underscoring the vital ecological function of these ecosystems (DAFF 2024). This statistic highlights the delicate balance required in forest management to meet both economic needs and conservation imperatives.

As we navigate the complexities of forest management in the 21st century, it is clear that forests play a vital role in addressing global challenges such as biodiversity loss and climate change (FAO and UNEP 2020). Yet, they remain among the most structurally transformed terrestrial ecosystems on the planet (Williams et al. 2020), emphasising the urgent need for sustainable management practices that can reconcile human needs with ecological preservation.

1.2 REGULATION

Forestry operations in NSW are conducted on both public and private lands under two distinct regulatory frameworks. This dual system reflects the complex nature of forest ownership and management in the state, as well as the evolving priorities in balancing economic interests with environmental conservation:

a. PUBLIC (CROWN) LAND

Public (Crown) land forestry operations have been subject to increasing scrutiny and regulation over the past few decades. This heightened oversight has led to significant reductions in the volume of logs sourced from state-owned native forests since the 1990s (ABARES 2019; Venn 2023). As a result, the hardwood timber industry has come to rely more heavily on private native forests to sustain its log supply (Francis et al. 2023). Despite this shift, public native forestry remains the largest component of hardwood supply in the state (AONSW 2023).

A total of 42.6 million hectares of Australia's forest is on public (Crown) land (DAFF 2024). Forestry operations conducted on this land, such as State forests, are primarily regulated by the Forestry Act 2012 (NSW) and Integrated Forest Operation Approvals ('IFOAs') (EDO 2015). Under the Forestry Act 2012, IFOAs are approvals jointly issued by the Minister for the Environment and the Minister for Agriculture. They permit forestry operations in State forests or other Crown timber lands.

IFOAs also outline the conditions under which operations must be carried out, including any requirements imposed by biodiversity conservation licences issued under the Biodiversity Conservation Act 2016, environment protection licences issued under the Protection of the Environment Operations Act 1997, and licences for harming threatened species or their habitats issued under Part 7A of the Fisheries Management Act 1994. There are currently four (4) IFOAs in NSW: Brigalow Nandewar, South-Western Cypress, Riverina Red Gum, and Coastal, with the latter encompassing the Upper North East, Lower North East, Southern, and Eden areas.

b. PRIVATE LAND

A total of 42.8 million ha of Australia's forests are on private land, with 48

million ha on leasehold land (DAFF 2024). By ownership, approximately 31% of Australia's 132 million hectares of native forests are in private tenure (Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee 2018). This significant proportion of privately-owned forests plays a crucial role in the overall forest management and timber production landscape of Australia. Studies have shown that landholders who cumulatively own 55% of the private native forests in northern NSW were managing their forests for timber production (Dare et al. 2017). This indicates a substantial involvement of private landowners in forestry activities, contributing significantly to the timber supply chain.

Forestry operations conducted on private land are governed by the Private Native Forestry ('PNF') provisions outlined in Part 5B of the Local Land Services Act 2013. This regulatory framework aims to balance the economic interests of private landowners with environmental conservation goals. The PNF Code of Practice ('COP') sets out the rules for the sustainable management of private native forests, including requirements for the protection of old growth forests, rainforests, and threatened species habitats (NSW EPA 2023).

Unlike public forests, which are subject to more stringent regulations, private native forestry operations often face different challenges in terms of monitoring and enforcement (Vanclay and Nichols 2007). The dispersed nature of private forests and the variability in management practices among different landowners can make it more difficult to ensure consistent application of sustainable forestry practices across all private native forests (Hislop et al. 2023).

The increasing reliance on private native forests for timber supply, especially as public forest resources become more constrained, highlights the growing importance of effective management and regulation of these private forest resources (Cameron et al. 2019). This shift also underscores the need for continued research, education, and support for private forest owners to ensure that their practices align with broader sustainability goals and contribute positively to biodiversity conservation efforts.

1.2.1 REGIONAL FOREST AGREEMENTS ('RFAs') AND THE CAR RESERVE SYSTEM

The *Regional Forest Agreements Act 2002* ('RFA Act') (Cth) and the *Environment Protection and Biodiversity Conservation Act 1999* ('EPBC Act') (Cth) are also pertinent to forestry operations conducted on land (both public and private) covered by a Regional Forest Agreement ('RFA'). RFAs are intergovernmental agreements between state and federal governments. When forestry operations are carried out in accordance with an RFA, Part 3 of the EPBC Act, which requires approval before certain 'actions' are taken, does not apply.

There are three (3) RFAs in NSW: Eden, North East, and Southern (NSW DPI n.d.). The NSW RFAs were originally established with 20-year terms and were first extended for another 20 years between 1999 and 2001, including provisions for automatic five-year rollovers, potentially allowing the RFAs to

remain in effect indefinitely. In late 2018, each of the NSW RFAs was amended to extend their terms (NSW DPI n.d.).

The RFAs establish what is referred to as the 'comprehensive, representative, and adequate reserve system', or 'CAR Reserve System', which includes areas that are reserved or protected from forestry operations to varying degrees, from dedicated reserves to specific regulations governing forestry activities under an IFOA. The concept of Ecologically Sustainable Management ('ESM') also underlies the RFAs, with Section 4 of the RFA Act defining an RFA as an agreement that, among other things, "provides for the ecologically sustainable management and use of forested areas in the region or regions" and is formed with consideration of assessments related to the principles of ESFM.

1.2.2 OVERSIGHT AND ENFORCEMENT

Ecosystem integrity, robust governance, and effective planning are recognised as key principles for achieving large-scale environmental sustainability (Morgan et al. 2021). However, current management practices in NSW are significantly undermining ecosystem integrity, disrupting ecological structures and processes, and reducing ecosystem stability and adaptability (Rogers et al. 2022; Cadman et al. 2024).

While forest regulations in NSW have relatively high levels of prescriptiveness and substantive performance thresholds compared with other international jurisdictions (McDermott et al. 2007; Maesen and Cadman 2015), its implementation remains complex, confusing, and largely at the discretion of regulators (Cadman et al. 2024). The PRA does not specifically prohibit the conversion of native forest or native vegetation to plantation, instead referring to clearing and protection of biodiversity. Clearing restrictions apply to certain areas, such as buffer zones of heritage significance and specific types of native vegetation. However, the authorisation process for clearing involves a statement demonstrating compliance with the Code's development standards, approved by the relevant Minister, with limited requirements for public consultation beyond initial stakeholder engagement.

In NSW, three (3) different government bodies have oversight and management responsibilities for forests (NSW DPI 2022):

1. **THE FORESTRY CORPORATION OF NSW ('FCNSW')**: The *Forestry Act 2012* designates the FCNSW as a State-owned corporation responsible for managing forestry in State forests and on land it owns. It supplies timber to sawmills across NSW, including from public native forests. As such, the FCNSW is the primary manager of native forests and plantations. In this capacity, FCNSW oversees over two million hectares of state forest with the primary objective of producing timber (Cadman et al. 2024). FCNSW is also responsible for ensuring its contractors follow IFOA guidelines;

2. **THE DEPARTMENT OF PRIMARY INDUSTRIES ('DPI')**: The DPI is largely responsible for plantation oversight and authorisation. The *Plantations and Reafforestation Act 1999* ('PRA') established the Plantation Assessment Unit ('PAU') of the NSW DPI as the authority for plantation approvals (Smethurst et al. 2012). The

2. PRA and the Plantations and Reafforestation (Code) Regulation 2001 are the most significant legal documents applicable to government plantation forestry in NSW, governing all plantations on public and private lands (Prest 2011; Cadman et al. 2024);

3. **THE ENVIRONMENT AND PROTECTION AUTHORITY ('EPA')**: The EPA oversees the regulation of native forestry in New South Wales (Cadman et al. 2024). Under the Protection of the Environment Administration Act 1991, one of the EPA's key objectives is to protect, restore, and improve the quality of the environment in NSW, while ensuring that ecologically sustainable development is maintained. This role includes monitoring FCNSW's adherence to IFOA conditions and implementing and enforcing a compliance program. The EPA is responsible for the oversight of native forests, but not plantations (Cadman et al. 2024).

Finally, it is worth noting that the regulatory landscape has undergone changes in recent years. The Act and Code were repealed in August 2017, with the Native Vegetation Act 2003 having been replaced by the Local Land Services Act 2013 and the Biodiversity Conservation Act 2016, which now govern the clearance of native plants. These changes, coupled with a recent change in government, have further contributed to the complexity of forest regulation implementation in NSW (Cadman et al. 2024).

1.2.3 ISSUES WITH OVERSIGHT AND ENFORCEMENT

The oversight and enforcement of forestry regulations in New South Wales have been subject to significant scrutiny and criticism over the past decade. Multiple reports, inquiries, and audits have highlighted systemic issues in the management of native forests and plantations, ranging from regulatory breaches to inadequate monitoring and enforcement mechanisms. These challenges are further compounded by NSW's approach to forest management, which diverges from both national and international standards. This inadequate approach to enforcement is having a direct and detrimental impact on the states' environment and biodiversity. The number of threatened species in NSW continues to grow at an alarming rate (NSW EPA 2021b), with over 1,000 species and ecological communities currently listed as threatened (OEH 2024a; OEH 2024b). This ongoing decline is closely linked to the continued degradation of forest habitats (NSW EPA 2021b), underscoring the urgent need for more effective regulation and enforcement of forestry practices (AONSW 2024).

This subsection examines key issues identified by various stakeholders and regulatory bodies, revealing a complex landscape of regulatory shortcomings and their potential risks and impacts on biodiversity and sustainable forest management:

a. **2011**: The Environmental Defender's Office ('EDO') and the Nature Conservation Council of NSW ('NCC') jointly released a report titled If a Tree Falls: Compliance Failures in the Public Forests of New South Wales. This report found that: "[I]t is clear that breaches of forestry regulations are systemic and occurring across the

a. state to such a degree that flora and fauna species are being impacted as a result of those breaches. It is clear that native forests are not being managed in a way that complies with the principles of ESFM and the conservation of biodiversity" (Hammond-Deakin and Higginson 2011)

b. **2013**: EDO offices in Tasmania, Victoria, and NSW collaborated on a report titled One Stop Chop: How Regional Forest Agreements Streamline Environmental Destruction. This report identified that the protection of forest biodiversity and threatened species would be more effective if regulated directly under the EPBC Act instead of under the RFA framework (Feehely et al. 2013);

c. **2014/2015**: An inquiry conducted by the NSW Legislative Council into the performance of the EPA highlighted the regulation of the forestry industry, specifically examining FCNSW's logging operations in Royal Camp State Forest near Casino in northern NSW. The Committee acknowledged the "need for a clearer and more efficient regulatory system" for forestry operations and recommended that "the NSW Government allocate significant additional funds to the Environment Protection Authority to further train staff and to facilitate the appointment of additional personnel to the Forestry Division" (NSW Parliament 2015).

   Despite these recommendations, NSW remains an outlier in its approach to forest management and plantation regulation. Unlike other Australian states that have developed policies and frameworks to identify and protect native vegetation, including remnants, NSW permits forest areas that would be considered native forests in other states to be included within the plantation estate (Cadman et al. 2024);

d. **2020**: The EPA revised its approach to regulating forestry operations. Previously, a dedicated forestry branch handled inspections and responded to complaints, but this branch was dissolved, and forestry matters are now managed as part of the EPA's general compliance operations (AONSW 2023). As part of this transition, the EPA introduced additional training for its compliance staff.

   By October 2022, 84.7% of the relevant staff had completed the "Introduction to Native Forestry Regulation" training course, while some had either not completed the course or only finished the first of two modules (AONSW 2023). The number of staff who completed the more advanced "Forestry Skills and Capability Program" remains limited. In 2022, 30 EPA staff attended the course, and the EPA indicated that more sessions would be held throughout 2023.

   However, the small number of participants restricts the number of staff qualified to carry out forestry inspections (AONSW 2023). Further, some staff lack access to essential tools, such as internet-enabled tablets with FCNSW's MapApp, tree measurement tools, and snake bite kits, often requiring them to use personal devices (AONSW 2023)

e. **MARCH 2020**: Environmental Justice Australia assessed the functioning of RFAs in the aftermath of the 2019-2020 bushfires and concluded that "the fires, particularly due to their effects on the CAR reserves, have undermined the policy foundations of the RFA system, making it untenable" (EJA 2020);

f. **SEPTEMBER 2020**: An independent report commissioned by the EPA examined whether the Coastal IFOA, both in its standard form and without Site Specific Operating Conditions ('SSOCs') issued by the EPA, adequately mitigates the ecological and environmental impacts of timber harvesting in areas affected by the 2019-2020 bushfires.

The review concluded that "the normal CIFOA [Coastal Integrated Forestry Operations Approvals] in the context of the 2019/20 wildfires will not deliver ecologically sustainable management as required under the objectives of the *Forestry Act 2012* and is likely to cause a significant impact under the NSW *Biodiversity Conservation Act 2016* and the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*".

It also noted that the "special conditions in SSOCs for the burnt areas are inadequate to mitigate fire and logging impact". It ultimately recommended the establishment of new standards that consider the impacts of both wildfire and timber harvesting at regional and landscape levels across all public tenures (Smith 2020);

g. **2023**: The Audit Office of NSW ('AONSW') published a performance report on the regulation of public forestry. As it applies to the regulatory responsibilities of the EPA and FCNSW, the AONSW audit found:

i. **INADEQUATE RISK ASSESSMENT**: The EPA does not assess risks or conduct proactive inspections in Western IFOA areas, leaving a significant gap in its inspection regime (AONSW 2023: 2);

ii. **RESOURCE LIMITATIONS**: The EPA has a limited number of trained and experienced staff to undertake forestry inspections, impacting its regulatory capabilities (AONSW 2023: 6);

iii. **EQUIPMENT SHORTAGES**: Some EPA offices lack the necessary equipment for forestry inspections, such as internet-enabled tablets or specialised measuring tools (AONSW 2023: 6);

iv. **INCONSISTENT MONITORING**: FCNSW does not consistently monitor compliance across its contractors and does not target its monitoring activities on a risk basis (AONSW 2023: 2);

v. **DATA MANAGEMENT ISSUES**: FCNSW's record keeping of quality assurance assessments is inconsistent, making it difficult to determine true levels of compliance and the cause of identified potential non-compliances (AONSW 2023: 5);

vi. **LACK OF PERFORMANCE MEASUREMENT**: FCNSW has set a target of zero non-compliances but is not measuring its overall compliance to determine how it is tracking against this target (AONSW 2023: 5-6).

h. **RECENT BREACHES AND FINES**: The frequency and severity of breaches by the FCNSW further underscore issues with oversight and enforcement.

According to data compiled by the National Parks Association of NSW ('NPANSW'), since October 2017, FCNSW has incurred fines totaling ~$589,200, with potential additional fines exceeding $18 million for ongoing prosecutions. These breaches range from failing to mark boundaries of environmentally sensitive areas to felling trees in protected zones, including koala habitats and areas home to threatened species. Notable incidents include:

i. A $230,000 fine in June 2022 for unlawful forestry activities in an exclusion zone in Dampier State Forest (NSW EPA 2022a);

ii. Fines and costs totaling $285,600 in June 2022 for tree felling in koala habitats and protected rainforest areas in Wild Cattle Creek Forest (NSW EPA 2022b);

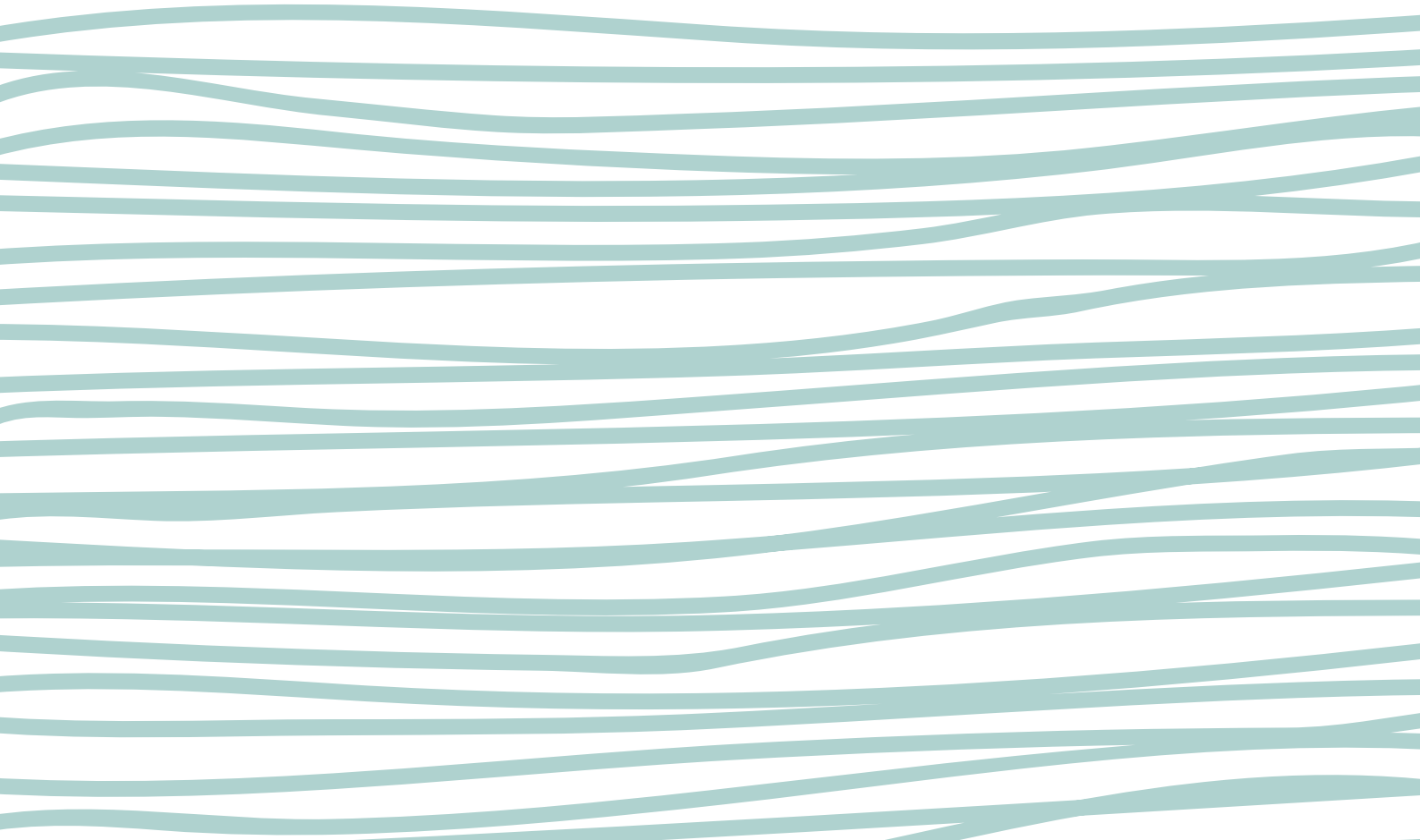
iii. Multiple fines for failing to protect habitats of endangered species, such as the Swift Parrot and Powerful Owl (NSW EPA 2021a).

The issues outlined above are further compounded by the ambiguities in NSW's legislative framework, particularly the *Plantations and Reafforestation Act 1999* ('PRA'). Unlike other states that have introduced laws, policies, and guidelines emphasising the planting of trees as a central attribute of plantations, the PRA in NSW makes no mention of conversion or deforestation. Instead, it provides a series of exceptional circumstances that allow conversion to occur. This includes permitting the clearing of areas less than one hectare, allowing larger areas to be cleared and offset, and allowing the removal of trees of minimum and maximum diameters. Native forest may even be included for plantation design purposes. These exceptions effectively leave few areas that are not available for plantation establishment (Cadman et al. 2024).

This approach contrasts sharply with international standards, such as those set by the Food and Agriculture Organisation of the United Nations ('FAO'), which makes a clear distinction between native forests and planted forests (FAO n.d.). It also diverges from the EU regulation on deforestation and forest degradation ('EUDR'), which includes definitions on the degree to which a forest is naturally regenerating or planted (European Union 2023). The lack of alignment with these international standards and the practices of other Australian states highlights the need for a comprehensive review and reform of NSW's forestry regulations and oversight mechanisms (Cadman et al. 2024).

SECTION TWO

KEY AREAS OF CONCERN



SECTION TWO

KEY AREAS OF CONCERN

2.1 SUSTAINABILITY OF FORESTRY OPERATIONS

The sustainability of current and future forestry operations in NSW is a complex issue that requires careful consideration of historical context, environmental impacts, including the current dire status of native species, economic factors, and policy frameworks.

2.1.1 HISTORICAL CONTEXT AND CURRENT STATE

Since colonisation, NSW has lost over 50% (~29 million hectares) of its original forests and woodlands, with an additional 9 million hectares degraded (Ward et al. 2024a; Ward et al. 2024b). Despite this significant loss, NSW remains proportionally the second most forested state in Australia, supporting over 1,600 plant community types and 532 threatened species, of which 233 are endemic to the state (NSW Government 2022; Ward et al. 2024a).

2.1.2 POLICY FRAMEWORK

The Regional Forest Agreements ('RFAs'), introduced following the 1992 National Forest Policy Statement, aimed to balance forest access with biodiversity conservation (Ward et al. 2024a). However, these 20-year agreements have been criticised for several reasons:

a. **EXEMPTION FROM EPBC ACT**: RFAs are exempt from complying with EPBC Act protections, even in cases of clear violations affecting threatened species' habitats (Lindenmayer and Burnett 2022; Ward et al., 2024a);

b. **INCONSISTENT IMPLEMENTATION**: The industrial logging permitted under RFAs has led to negative consequences due to inconsistent implementation, application, and enforcement of sustainability requirements;

c. **SHIFTING BASELINES**: The absence of a historical conservation perspective in logging practices reinforces shifting baselines, complicating decision-making for future management (Lindenmayer and Laurance 2012; Papworth et al. 2009; Soga and Gaston 2018).

2.1.3 ENVIRONMENTAL IMPACTS

The environmental impacts of forestry operations in NSW are far-reaching and

multifaceted, including:

a. **BIODIVERSITY LOSS**: Logging in NSW has degraded approximately 435,000 hectares of native forest across the habitats of 143 threatened species (Ashman and Ward 2022);

b. **INCREASED FIRE RISK**: Logging in native forests can exacerbate degradation by increasing the severity and frequency of wildfires (Taylor et al. 2014; Lindenmayer et al. 2020a; Lindenmayer and Zylstra 2023);

c. **CARBON EMISSIONS**: Logging contributes to reduced air quality due to increased carbon emissions and diminishes the capacity for climate change mitigation (Keith et al. 2015);

d. **WATER AND SOIL IMPACTS**: Forestry operations affect water supply and quality and contribute to soil erosion.

2.1.4 ECONOMIC AND SOCIAL IMPACTS

Forestry operations have significant economic and social implications beyond their environmental effects. These include:

a. **TOURISM AND RECREATION**: Logging operations have significant negative impacts on the tourism and recreation potential of forested areas:

   i. Nature-based tourism is a significant contributor to the Australian and NSW economies. In the year ending December 2018, NSW received 29.2 million nature-based visitors, representing 50% of all visitors to the state. These visitors spent an estimated $21.4 billion in NSW (Destination NSW 2018). Nationally, nature-based tourism accounts for over 1.6 million international visitors annually, with visitor spending growing at 8% per year (ATIC 2024). This sector is particularly important for regional areas, where nature-based activities are a primary drawcard for tourists (Tourism and Transport Forum 2017);

   ii. Logging activities in popular tourist areas can potentially impact visitation rates and tourism revenue, though the exact extent of this impact may vary depending on the specific location and circumstances (Baloch et al. 2023);

   iii. Forest ecosystems provide significant cultural services, including opportunities for recreation, tourism, aesthetic appreciation, and spiritual enrichment. The total welfare value of recreation in NSW National Parks is estimated at $3.3 billion per annum, highlighting the substantial economic value of forest-based recreation (Pelletier et al. 2021). Logging operations can

b. **INTERNATIONAL REPUTATION**: Unsustainable forestry practices pose a risk to Australia's reputation:

   i. Australia's forest management practices have been criticised by international environmental organisations, potentially impacting its global standing (Pacheco et al. 2021);

   ii. Features of Australia's natural environment are the primary generators of demand for tourism in Australia (Huybers and Bennett 2013). Negative publicity about forest degradation could impact Australia's $45 billion international tourism industry;

   iii. Unsustainable logging practises jeopardise Australia's commitments to international agreements, including the Paris Agreement and the Convention on Biological Diversity (Henders et al. 2018).

c. **FINANCIAL BURDEN ON TAXPAYERS**: Native forest logging in NSW has become an unsustainable industry that is increasingly costly for taxpayers:

   i. In the 2020-21 financial year, native forest logging operations resulted in a $20 million loss, costing NSW taxpayers $441 per ha logged (Cormack and O'Malley 2022);

   ii. The FCNSW has incurred losses from native forest logging in seven of the last ten years, with cumulative losses exceeding $70 million over this period (Frontier Economics 2022).

d. **OPPORTUNITY COSTS**: Continuing native forest logging prevents the realisation of potential benefits from alternative uses, which could provide significant economic and environmental value (Frontier Economics 2022):

   i. Intact native forests have substantial carbon storage potential. Ceasing logging in southeast Australian forests could result in additional carbon storage of 136 tonnes of CO2 per ha over 100 years (Keith et al. 2015). This represents a significant opportunity for climate change mitigation;

   ii. Native forests play a crucial role in water catchment (Ellison et al. 2017). Logging can reduce water yield and quality (Shah et al. 2022). For example, old-growth mountain ash forests can yield up to 12 million litres of water per ha annually, compared to much lower yields from logged areas (Vertessy et al. 2001; Lindenmayer 2018). Protecting these forests could secure valuable water resources;

   iii. Intact native forests offer valuable opportunities for scientific research and environmental education. While harder to quantify economically, these

iii. activities can contribute to innovation, skill development, and long-term environmental stewardship.

2.1.5 FUTURE CHALLENGES

The forestry industry in NSW faces several critical challenges, including:

a. **CUMULATIVE IMPACTS**: The EPBC Act primarily focuses on assessing individual destructive actions, often overlooking the cumulative impacts of multiple projects over time. This approach can lead to a "death by a thousand cuts" scenario for many species and ecosystems (Reside et al. 2019; Tulloch et al. 2016b).

   The incremental loss of habitat and biodiversity can also have significant long-term consequences that are not adequately captured by current assessment methods (Damiens et al. 2021). For example, between 2000 and 2017, 7.7 million ha of potential habitat for threatened species were cleared, with 93% of this clearing not referred to the Federal government for assessment under the EPBC Act (Ward et al. 2019);

b. **PRIVATE NATIVE FORESTS**: There is limited knowledge about recent harvesting in private native forests, creating a significant gap in understanding the overall forestry impacts in NSW (Hislop et al. 2023). This lack of comprehensive data hampers effective management and conservation efforts. For example, while private native forests in Australia are under increasing pressure from land-use change, they remain poorly mapped and monitored compared to public forests (Lechner et al. 2020);

c. **GLOBAL COMMITMENTS**: Current practices hinder Australia's ability to meet its international commitments, including:

   i. Sustainable Development Goals ('SDGs'): Particularly SDG 15 (Life on Land), which aims to protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss (UN n.d.);

   ii. Kunming-Montreal Global Biodiversity Framework: This framework, adopted in 2022 (Commonwealth of Australia 2024), sets targets for protecting 30% of Earth's lands, oceans, coastal areas, and inland waters by 2030 (FAO 2024). Current forestry practices are impeding progress towards these goals;

   iii. Leaders' Pledge for Nature: Australia has committed to reversing biodiversity loss by 2030, which requires significant changes in current land management practices, including forestry (Albanese 2022).

d. **CLIMATE CHANGE**: The forestry industry must adapt to the increasing impacts of climate change, including more frequent and severe bushfires, droughts, and

d. extreme weather events. These changes will affect forest growth rates, species composition, and overall ecosystem health (Keenan 2015). Projections indicate that climate change could lead to significant shifts in the distribution of major forest types in Australia by 2070 (Williams et al. 2014);

e. **BALANCING ECONOMIC AND ENVIRONMENTAL PRIORITIES**: The industry faces the ongoing challenge of balancing economic demands with environmental conservation. This includes addressing issues such as job security in regional areas while transitioning to more sustainable practices (Schirmer et al. 2016);

f. **SOCIAL LICENCE TO OPERATE**: As public awareness of environmental issues grows, the forestry industry must work to maintain its social licence to operate ('SLO') (Wang 2019). This involves improving transparency, engaging with communities, and demonstrating a commitment to sustainable practices (Edwards et al. 2016).

2.1.6 RECOMMENDATIONS FOR IMPROVEMENT

While we strongly recommend an immediate commitment to end native forest logging in NSW, including a moratorium on the commencement of all new native forest logging operations, we recognise that such a transition may take time. In the interim, we propose the following recommendations to mitigate the current impacts of forestry operations and improve their sustainability:

a. **Reform RFAs**: Align RFAs with EPBC Act protections and strengthen enforcement mechanisms. This should include removing exemptions for forestry operations from national environmental laws and introducing more stringent compliance measures;

b. **ADOPT HISTORICAL PERSPECTIVE**: Incorporate historical baselines in environmental assessments to prevent further erosion of ecological standards. This approach will provide a more accurate picture of cumulative impacts and guide more effective conservation strategies;

c. **ENHANCE MONITORING**: Improve tracking of logging activities, especially in private native forests, while implementing advanced technologies and increasing the frequency of independent audits to ensure compliance with regulations;

d. **PRIORITISE ECOSYSTEM SERVICES**: Place greater emphasis on the value of intact forests for climate mitigation, water regulation, and biodiversity conservation. This should include developing a comprehensive valuation system for ecosystem services to inform decision-making processes;

e. **BALANCE ECONOMIC AND ENVIRONMENTAL NEEDS**: Develop strategies to support communities dependent on forestry while transitioning to more sustainable practices. This could include:

i. Investing in alternative and sustainable industries, such as eco-tourism, and;

ii. Providing training and support for workers to transition to roles in forest restoration and conservation;

f. **STRENGTHEN LEGAL PROTECTIONS**: Amend the PRA to prohibit the conversion of native forests to plantations and close loopholes that allow for clearing of native vegetation;

g. **IMPROVE TRANSPARENCY AND ACCOUNTABILITY**: Establish a public reporting system for all logging operations, including detailed information on areas logged, species impacted, and restoration efforts;

h. **IMPLEMENT STRICTER ENVIRONMENTAL IMPACT ASSESSMENTS**: Require comprehensive, independent and cumulative impact assessments for all logging operations, considering long-term effects on biodiversity, water resources, and carbon storage.

These recommendations are designed to significantly reduce the environmental impact of forestry operations while steps are taken to phase out native forest logging entirely. They aim to balance the immediate need for improved practices with the long-term goal of transitioning away from native forest logging in NSW.

2.2 ENVIRONMENTAL AND CULTURAL VALUES

The environmental and cultural values of forests in NSW are multifaceted and of profound importance, encompassing biodiversity, ecosystem services, climate regulation, and Indigenous cultural heritage. This section addresses Term 2: Environmental and cultural values of forests, including threatened species and Aboriginal cultural heritage values.

2.2.1 GENERAL

Forest ecosystems hold significant value for both biodiversity conservation and human resource use (Kile et al. 2014). However, the conflicting nature of these values has placed forest management at the centre of global conservation debates (Lefoe et al. 2022). For example, while old growth Mountain Ash forests provide habitat for a wide range of species, the size and timber quality of their trees also represent high economic value (Lefoe et al. 2022).

While the forestry industry offers recognised benefits such as wood resources and employment, particularly in regional areas, its operations negatively impact native forests. These impacts include harm to threatened plants and animals, degradation of water and soil quality, and increased carbon emissions. Combined with other pressures like climate change, biodiversity loss, and

environmental disasters, these factors threaten the health and sustainability of forests and the vital ecosystem services they provide. This review must consider the industry within this context.

We note the 2018 *Australian State of the Forests* report, which states:

> "*Australia's forests are recognised and valued for their diverse ecosystems and unique biodiversity; for their cultural heritage; for their provision of goods and services such as wood, carbon sequestration and storage, and soil and water protection; and for their aesthetic values and recreational opportunities. At the same time, Australia's forests are subject to a range of pressures, including extreme weather events, drought and climate change; invasive weeds, pests and diseases; changed fire regimes; clearing for urban development, mining, infrastructure or agriculture; and the legacy of previous land-management practices*" (Australian Government 2018).

2.2.2 ENVIRONMENTAL IMPACTS OF FORESTRY OPERATIONS

Compelling scientific evidence demonstrates that forestry operations have substantial negative effects on the environment and biodiversity, including:

a. **CARBON LOSS**: Forests sequester carbon in both trees and soil. Tree removal releases carbon into the atmosphere, both immediately and over the long term as soil organic carbon diminishes due to the breakdown of roots and other materials (Dean et al. 2010; Dean et al. 2012; Dean et al. 2017);

b. **BIODIVERSITY DECLINE**: Forestry operations displace native wildlife and eliminate critical habitats. Tree hollows, which provide essential habitats for wildlife, develop only after many years in older, mature trees. In forests managed for timber and firewood production, silvicultural practices have significantly reduced the density of hollow-bearing trees, especially where repeated harvesting has occurred (Hughes 2007). Consequently, the 'Loss of Hollow-bearing Trees' has been identified as a KTP under the *Biodiversity Conservation Act 2016* (NSW). Research shows that both logging and bushfires can alter forest physiognomy, leading to declines in populations of various species, such as birds, bats, and gliders (McLean et al. 2018; Stares et al. 2018; Law et al. 2019; Lindenmayer et al. 2020b; Lindenmayer et al. 2021; Wilson et al. 2021a);

c. **INCREASED EROSION, SEDIMENTATION AND EFFECTS ON WATER**: Forests are crucial to the water cycle. Vegetation removal disrupts soil and causes erosion, resulting in increased sedimentation, possible contamination of water resources, increased water evaporation, and adverse effects on watersheds, water supply, and security.

d. I**NCREASED BUSHFIRE RISKS**: Studies demonstrate that logging and harvesting increase the susceptibility of forests to bushfires (Lindenmayer et al. 2020c).

2.2.3 THE EFFECT OF ENVIRONMENTAL IMPACTS ON FORESTRY OPERATIONS

The environmental impacts of forestry operations in NSW are not only significant for the ecosystems themselves but also have far-reaching consequences for the sustainability of the forestry industry. This subsection examines how declining biodiversity and climate change are affecting forestry practices and the long-term viability of the sector. It highlights the unique challenges faced by NSW due to its regulatory framework and explores the complex interplay between forest management, environmental conservation, and climate resilience. Understanding these impacts is crucial for developing sustainable forestry practices that can balance economic needs with ecological imperatives.

a. **DECLINING BIODIVERSITY**: Biodiversity in NSW is declining to such an extent that we are now confronting an extinction crisis. Despite this, the current regulatory framework in NSW is incapable of addressing this critical issue, particularly in the context of forestry operations and plantation management.

   While other Australian jurisdictions have recognised the importance of native vegetation and developed policies to ensure its protection, NSW remains an outlier. The state permits forest areas that would be considered native forests in other jurisdictions to be included within the plantation estate. This approach is problematic for several reasons:

   i. The PRA makes no mention of conversion or deforestation, instead providing a series of exceptional circumstances that allow conversion to occur (Cadman et al. 2024);

   ii. Under the current framework, areas of less than one hectare may be cleared, larger areas may be cleared and offset, and trees of minimum and maximum diameters may be removed. Native forest may even be included for plantation design purposes;

   iii. The EPA has a restricted role within plantations, while the DPI lacks commensurate powers to address the removal of native forest beyond the provisions of the Act and Code;

   iv. There is no formal, legally clarified role for public stakeholder consultation regarding plantation management, limiting transparency and accountability.

   This regulatory approach contrasts sharply with international standards, such as those set by the FAO, which makes a clear distinction between native forests and planted forests (FAO n.d.). It also diverges from the EU's regulation on deforestation and forest degradation ('EUDR'), which includes definitions on the degree to which a forest is naturally regenerating or planted (European Union 2023).

The consequences of this regulatory framework are significant. By the time these exceptions are taken into consideration, few areas that are not available for plantation establishment remain, potentially exacerbating the biodiversity crisis. While the Agriculture Minister may intervene if biodiversity values are affected, determining those values depends on regional vegetation schedules and precludes interventions if exceptional circumstances are invoked (Cadman et al. 2024). This creates a situation where biodiversity protection can be circumvented.

Furthermore, the scale of this issue is substantial. In addition to its hardwood plantations, NSW has around 225,000 ha of public softwood plantations, and a plantable area of over 395,000 ha containing approximately 35,000 ha of hardwood plantation and 35,000 ha of retained vegetation (FCNSW n.d.). This leaves a considerable area of native forest and native vegetation, including remnants, potentially available for conversion. In so doing, NSW has created a spatial and definitional dilemma which threatens to significantly impact biodiversity values and adversely impact Australia's international reputation as a signatory to the Glasgow Declaration (Cadman et al. 2024).

Without urgent reforms, there is no guarantee that native vegetation in plantations will be protected into the future. Consequently, forest conversion is likely to continue, as the regulatory environment allows it, and not all managers are certified. Without such reform, the state's unique biodiversity will likely continue to decline, potentially leading to irreversible losses in our native flora and fauna. This situation not only threatens the ecological integrity of NSW's forests but also poses risks to the long-term sustainability of the forestry industry itself.

b. **CLIMATE CHANGE**: Research indicates that the world is on track for 2.7°C of warming this century, significantly exceeding the Paris Agreement goals (Newsome and Ripple 2024). This level of warming would have severe consequences for forest ecosystems, including:

   i. Increased frequency and intensity of extreme weather events, particularly droughts and heatwaves (NSW EPA 2023b), which could lead to widespread forest die-offs (Menezes-Silva et al. 2019);

   ii. Shifts in species distributions, potentially disrupting forest composition and ecosystem functions (Price et al. 2024);

   iii. Greater vulnerability to disease, further threatening forest health (Newsome and Ripple 2024);

   iv. Heightened risk of catastrophic wildfires, which could dramatically alter forest landscapes (Doerr et al. 2022).

Australia's climate has warmed by approximately 1.4°C since 1910, and current

scientific data indicates that average temperatures are expected to rise further (CSIRO 2022). Australia is already facing the effects of climate change, including ocean warming and acidification, rising sea levels, reduced rainfall in the southern regions, increased rainfall in the north, and a long-term rise in extreme fire weather. Extreme heat days, extended dry periods, and more severe fire conditions are likely to become increasingly common.

The Intergovernmental Panel on Climate Change ('IPCC') is confident that without supplementary mitigation efforts to support those currently in place, warming by the end of the century will lead to "high to very high risk of severe, widespread, and irreversible impacts globally" (IPCC 2014). Predicted impacts in NSW include: longer and more intense bushfire seasons; accelerated biodiversity loss; increased and irreversible soil erosion; increased crop failure, as well as human and animal deaths (CSIRO 2021; CSIRO 2024).

Logging of native forests interacts with the climate in a number of key ways. For example, logging increases the risk and severity of bushfires, worsening the already elevated bushfire risks associated with climate change. Scientific research conducted after the 2019-2020 bushfire season specifically examined the impact of logging and forest management on recent bushfires in Australia, revealing "compelling evidence that Australia's historical and contemporary logging regimes have made many Australian forests more fire prone and have contributed to increased fire severity and flammability" (Lindenmayer et al. 2020).

Similarly, forests capture carbon, both in trees and in the soil. The removal of trees, including through timber harvesting, releases carbon into the atmosphere - immediately in the short term and over the long term as soil organic carbon decreases due to the breakdown of roots and other materials (Dean et al. 2010; Dean et al. 2012; Dean et al. 2017).

2.2.4 ECOSYSTEM SERVICES

Ecosystems that function effectively rely on strong mutualistic networks (Pascual-García and Bastolla 2017). However, the loss of critical interactions can lead to a decline in the functioning of these networks (Kearns et al. 1998). For example, the loss of remnant forests further diminishes ecosystem integrity, leading to a decline in ecosystem services and overall ecosystem value (Morgan et al. 2022; Buckwell and Morgan 2022).

Protecting networks of species interactions is essential for conservation and for maintaining ecosystem functions, including rainfall generation, landscape cooling, and air purification (Ellison et al. 2017), as well as animal-mediated pollination (Tylianakis et al. 2010). The following points outline key aspects of forest ecosystem services and their importance:

a. **FOREST COVERAGE AND VALUE**: Seventeen percent (134 million hectares) of Australia's land area is covered by forests, which hold substantial ecological, economic, and cultural value. These forests offer important provisioning services

a. (e.g., food, fibre, materials, and biodiversity), regulating services (e.g., climate, soil, and water), and cultural services (e.g., cultural significance, spirituality, and aesthetics) (Carnegie et al. 2022);

b. **TYPES OF ECOSYSTEM SERVICES**: Ecosystem services provided by forests can be categorised into four (4) main types:

   i. Provisioning services: Forests provide timber, food, medicinal plants, and genetic resources (MEA 2005);

   ii. Regulating services: Forests play a crucial role in climate regulation, carbon sequestration, water purification, flood control, and erosion prevention (Brockerhoff et al. 2017);

   iii. Supporting services: Forests contribute to soil formation, nutrient cycling, and primary production, which are essential for ecosystem functioning (Thompson et al. 2009);

   iv. Cultural services: Forests offer recreational opportunities, aesthetic value, spiritual significance, and education resources (MEA 2005).

c. **ECONOMIC VALUE OF ECOSYSTEM SERVICES**: The economic value of these services is substantial. For example, the global value of forest ecosystem services is estimated to be $16.2 trillion per year (Costanza et al. 2014). In Australia, the value of carbon sequestration by forests alone was estimated at AUD 1.8 billion in 2014-15 (ABS 2017);

d. **ROLE OF BIODIVERSITY**: Biodiversity plays a crucial role in maintaining these ecosystem services. Species richness and functional diversity contribute to ecosystem resilience and the provision of multiple services (Gamfeldt et al. 2013). For example, diverse forest ecosystems are more effective at carbon sequestration and water regulation than monocultures (Thompson et al. 2009);

e. **KOALAS AS AN UMBRELLA SPECIES**: Koalas serve as a key umbrella species in Australian forest ecosystems, illustrating the interconnectedness of species and ecosystem services. As arboreal folivores, koalas play a vital role in nutrient cycling and maintaining forest health (McAlpine et al. 2015). Their presence indicates a healthy forest ecosystem that supports a wide range of other species. Conservation efforts focused on koalas and their habitat can therefore have far-reaching benefits for overall forest biodiversity and ecosystem services (TSSC 2022);

f. **THREATS TO ECOSYSTEM SERVICES**: The provision of these ecosystem services is threatened by deforestation, forest degradation, and climate change. The loss of forest cover not only reduces habitat for biodiversity but also diminishes the capacity of forests to provide crucial services (Watson et al. 2018). For example, deforestation in Australia has led to increased soil erosion, reduced water quality, and decreased carbon sequestration capacity (Evans 2016).

To maintain and enhance forest ecosystem services, it is crucial to adopt sustainable forest management practices, protect remaining intact forests, and restore degraded areas. This approach should consider the multiple values of forests and aim to balance conservation with sustainable use (Lindenmayer et al. 2012).

2.2.4 HABITAT LOSS AND DEGRADATION

Habitat loss and degradation represent two of the most significant threats to global biodiversity, with particularly severe impacts in Australia. These processes are intricately linked to human activities, including forestry operations, and have far-reaching consequences for ecosystems and species survival.

a. **DEFINING HABITAT**: Habitat is a species-specific concept, defined as "the resources and conditions present in an area that produce occupancy" (Callaghan et al. 2011). This definition underscores the complexity of habitat conservation, as each species has unique requirements;

b. **SCALE OF THE PROBLEM**: Australia has experienced extensive land transformation, with approximately 63% of its land area altered for human use (ABS 2010; Kireta et al. 2024). This transformation has been disproportionate across different ecosystems:

   i. Some woodland types have been reduced to as little as 3% of their original extent (Yates and Hobbs 1997);

   ii. Remaining forest cover is significantly fragmented (Gathmann and Tscharntke 2002; Bradshaw 2012).

   These changes have contributed to Australia having one of the world's highest extinction rates, including the highest mammal extinction rate globally (Woinarski et al. 2015). This crisis is largely attributed to major changes in land management, including land clearing, logging, and extensive grazing (Ward et al. 2020);

c. **DRIVERS OF HABITAT LOSS**: Timber harvesting is a leading cause of global deforestation, surpassed only by land clearing for agriculture and animal farming (Curtis et al. 2018). The impacts of these activities are severe:

   i. Overexploitation (e.g., logging) affects 72% of imperilled species worldwide (IUCN 2016);

   ii. Agriculture impacts 62% of imperilled species (Maxwell et al. 2016).

   While deforestation has immediate and visible impacts on biodiversity, habitat

c. degradation is often more subtle but equally detrimental (Thorn et al. 2020). Both processes represent KTPs for many species (Evans et al. 2011; Lefoe et al. 2022).

d. **COMPOUNDING FACTORS**: Natural processes, such as wildfires, exacerbate the impacts of habitat loss and degradation (Jolly et al. 2015; Lesmeister et al. 2019). As climate change increases the frequency and severity of wildfires, and with continued native forest logging, some species face the risk of local or widespread extinctions (Mantyka-Pringle et al. 2015; Lefoe et al. 2022);

e. **IMPACT IN NSW**: The situation in NSW is particularly concerning:

   i. From 2000 to 2022, approximately 435,000 hectares of native forest and woodland were logged, all overlapping with the habitat of at least one threatened forest-dependent species (Ward et al. 2024a). However, this impact assessment is likely an underestimate, given the rate of new species discovered in Australia (Readfearn 2022; Ward et al. 2024a);

   ii. Approximately 150 threatened native species continue to face habitat destruction due to ongoing logging activities (Ward et al. 2024a);

   iii. Habitat destruction has intensified following the listing of species as vulnerable, paradoxically exacerbating their threats (Ashman et al. 2021).

f. **POLICY IMPLICATIONS**: The repeal of protective legislation, such as the *Native Vegetation Act*, has led to significant increases in habitat destruction. This has particularly impacted vulnerable species like koalas (WWF 2018). The NSW State of the Environment report (2021) highlights habitat loss due to clearing and degradation of native vegetation as a primary threat, with nearly 1,000 plant and animal species at risk of extinction (NSW EPA 2021b; DCCEEW 2024).

The ongoing destruction of habitat for threatened species, even after their listing as vulnerable, underscores the urgent need for stronger legislative protections and more effective conservation strategies. This situation demands immediate attention to halt further biodiversity loss and protect the unique ecosystems of NSW and Australia at large (NCC 2024).

CASE STUDY

Spotlight on hollow-bearing trees

Hollow-bearing trees are an essential and limited resource for many vertebrate species that rely on them for shelter or nesting, including endangered species (Cockle et al. 2010; Stojanovic et al. 2021). More than 300 species of native animals use tree hollows (Gibbons and Lindenmayer 2002). In NSW, hollow-dependent species include at least 46 mammals, 81 birds, 31 reptiles, and 16 frogs (Anon. 2021). In Australian eucalypts, tree hollows suitable for vertebrate fauna take a long time to develop, typically starting to form when trees are between 120 and 220 years old (Gibbons et al. 2010).

Past silvicultural practices have long-lasting effects on three critical aspects of hollow availability (Gibbons and Lindenmayer 1996):

a. Logging significantly reduces the number of hollow-bearing trees (Gibbons and Lindenmayer 2002). A review of 15 international and Australian studies found that logged forests contain 7% to 100% fewer hollow-bearing trees compared to unlogged forests, with an average reduction of 59% (Gorrod et al. 2024);

b. These practices also affect the variety of hollow types, often reducing the number of large-entrance hollows (Schaaf et al. 2020) and increasing the proportion found in dead trees (Eyre 2005);

c. Logging disrupts the future supply of hollows by removing living trees that are likely to develop hollows soon, which are often similar in size to those nearing collapse (Gibbons et al. 2010; Gorrod et al. 2024).

2.2.6 THREATENED SPECIES

A significant number of the world's extinctions have taken place in Australia, and the list of threatened species keeps expanding (Wilson et al. 2020). Australia's forests are home to a rich tapestry of biodiversity, harbouring thousands of unique plant and animal species. However, many of these species face significant threats to their survival. Threatened species are those at an elevated risk of extinction due to various factors, including population decline, limited geographic distribution, habitat fragmentation, and vulnerability to environmental changes (Mace et al. 2008).

In the context of forest ecosystems, we distinguish between two (2) critical categories:

a. **FOREST-DWELLING NATIVE SPECIES**: These are species who utilise forest habitats for at least part of their lifecycle. Australia's forests support 2,486 vertebrate animal species and 16,836 vascular plant species in this category (DAFF 2024);

b. **FOREST-DEPENDENT NATIVE SPECIES**: These are species who utilise forest habitats for at least part of their lifecycle. Australia's forests support 2,486 vertebrate animal species and 16,836 vascular plant species in this category (DAFF 2024);

The conservation of these species is intrinsically linked to the health and management of Australia's forests. As human activities continue to impact forest ecosystems through logging, land-use changes, and climate change, many of these species face increasing pressure. Forestry operations, particularly in native forests, can have significant impacts on threatened species. These include:

a. **DIRECT HABITAT LOSS**: Logging removes mature trees that provide crucial habitat features such as hollows and feed trees, which are essential for many forest-dependent species (Lindenmayer et al. 2018);

b. **INDIRECT EFFECTS**: Even selective logging can alter forest structure and composition, affecting species that rely on specific forest characteristics (Kavanagh and Wheeler 2004);

c. **EDGE EFFECTS**: Logging creates forest edges that can increase predation risk and alter microclimate conditions for sensitive species (Pfeifer et al. 2017);

d. **CUMULATIVE IMPACTS**: Repeated logging over time can lead to a simplification of forest ecosystems, reducing their capacity to support diverse species assemblages (Lindenmayer et al. 2015).

Though numerous attempts have been made to improve the conservation of threatened species, including the establishment of protected areas (Watson et al. 2011), habitat restoration (Cristecu et al. 2013; Andres et al. 2024), and the

development of species-specific recovery plans (McAlpine et al. 2015), challenges remain. These include, but are not limited to, the following:

a. **LIMITED RESOURCES**: These are species who utilise forest habitats for at least part of their lifecycle. Australia's forests support 2,486 vertebrate animal species and 16,836 vascular plant species in this category (DAFF 2024);

b. **KNOWLEDGE GAPS**: There is often incomplete understanding of the ecology, specific needs, and responses to threats of many threatened species (Lindenmayer et al. 2013). This lack of comprehensive knowledge hampers the development of effective conservation strategies (Woinarski et al. 2021). For instance, gaps in understanding species' habitat requirements, population dynamics, and responses to environmental changes can lead to ineffective or counterproductive conservation efforts (Roche et al. 2022);

c. **COMPETING LAND-USE DEMANDS**: Balancing conservation with economic pressures for resource extraction and development remains a significant challenge (Maron et al. 2015). The ongoing expansion of urban areas, agricultural lands, and industrial activities frequently results in habitat fragmentation and degradation, further threatening already vulnerable species (Li et al. 2022);

d. **CLIMATE CHANGE ADAPTATION**: Developing and implementing strategies to help species adapt to rapidly changing environmental conditions is becoming increasingly critical (Stein et al. 2013). Climate change is altering habitats (WHA 2023), shifting species distribution (Rubenstein et al. 2023), and exacerbating existing threats at an unprecedented rate (Bolan et al. 2023). As such, conservation efforts must not only address current threats, but also anticipate and mitigate future impacts of climate change.

The conservation of threatened species in Australia's forests requires a multifaceted approach that addresses both immediate threats and long-term challenges. It necessitates a balance between economic needs and ecological imperatives, informed by robust scientific research and adaptive management practices. As forest ecosystems continue to face unprecedented pressures, the protection of threatened species becomes not just an ecological imperative but a test of our ability to sustainably manage our natural heritage for future generations.

CASE STUDY

Spotlight on pollinators

Pollination is a critical ecosystem service that underpins both natural biodiversity and agricultural productivity (Bailes et al. 2015). Approximately 87% of global plant species depend on animal pollination for reproduction (Pires and Maués 2020), highlighting the vital role pollinators play in maintaining ecosystem health and food security (Aizen et al. 2008; Lautenbach et al. 2012). The economic value of pollination services is substantial, enhancing global crop productivity by billions of dollars annually and contributing significantly to nutritional security (Chaplin-Kramer et al. 2014).

However, pollinator populations worldwide face mounting threats from anthropogenic activities:

HABITAT LOSS

These are among the most significant threats to pollinator populations. A meta-analysis by Winfree et al. (2009) found a strong correlation between habitat loss and declines in wild pollinator populations, with ongoing losses expected to exacerbate this trend (Hanula et al. 2015);

CHEMICALS

Intensive use of pesticides and herbicides in agriculture has detrimental effects on pollinator health and abundance;

CLIMATE CHANGE

Shifting temperature and precipitation patterns disrupt the delicate synchronisation between pollinators and the plants they service.

AUSTRALIAN CONTEXT

Australia's unique biodiversity includes over 1,650 of the world's 21,000 bee species (Kireta et al. 2024), alongside numerous other pollinator species. Many of these pollinators rely heavily on forest ecosystems for nesting and foraging, with the availability of forests and other natural habitats directly influencing pollinator species composition (Krishnan et al. 2020).

In NSW, several species of nectar-feeding birds and bats are recognised as threatened under the *Threatened Species Conservation Act 1995*. A 2016 report by the Office of Environment and Heritage (OEH) identified consistent threats to these species, primarily:

CASE STUDY

Spotlight on pollinators

- Loss of feeding and roosting habitats;
- Degradation of existing habitats and;
- Fragmentation of habitat, particularly on privately owned land.

The report emphasises that effective conservation actions must prioritise habitat protection, restoration, and regeneration to halt and reverse the decline of these vital pollinators (OEH 2016).

MATURE FORESTS

Mature, unlogged native forests play a crucial role in supporting pollination across landscapes, both within forested areas and in adjacent ecosystems (Ulyshen et al. 2023). These forests provide:

- Diverse floral resources throughout the year;
- Nesting sites for a wide range of pollinator species;
- Shelter and protection from extreme weather events;
- Corridors for pollinator movement across fragmented landscapes.

The conservation and restoration of mature forest ecosystems are therefore essential not only for maintaining biodiversity, but also for ensuring the resilience of pollination services in both natural and agricultural systems.

2.2.7 **ANIMAL WELFARE**

Animal welfare has become an increasingly important factor in environmental decision-making concerning wildlife (Bradshaw and Bateson 2000; Twigg and Parker 2010; McMahon et al. 2012; Hampton et al. 2014; Descovich et al. 2015; Beausoleil et al. 2016). In Australia, this shift has been influenced by the development and reform of animal welfare laws across states and territories, as well as efforts by both government and non-government organisations to raise awareness of welfare issues (RSPCA Australia 2002; Cogger et al. 2003; Johnson et al. 2007; Commonwealth of Australia 2011; McLeod and Sharp 2014).

Additionally, advancements in our understanding of how wild animals respond to human activities have contributed to this growing consideration (Bejder et al. 2009; Johnstone et al. 2012; Brearley et al. 2013; van der Hoop et al. 2017; Tablado and Jenni 2017). Blumstein (2010) highlights that forestry practices can have significant impacts on animal welfare. These impacts can be both immediate and long-term, impacting not only individual animals but also population dynamics and ecosystem health (Blumstein 2010).

Despite this, the harm that land clearing causes to individual animals is often overlooked in environmental decision-making processes (Finn and Stephens 2017). In fact, assessing the harm caused by land clearing to wildlife may seem redundant on the basis that there is little scientific debate over the fundamental fact that clearing results in the death of animals living in that area (Ehmann and Cogger 1985; Williams et al. 2001; Cogger et al. 2003; McDonald et al. 2003; Department of the Environment 2006; Johnson et al. 2007). However, there is compelling evidence that land clearing results in significant animal welfare issues that warrant consideration in line with clear and growing public expectations:

a. **MORTALITY**: Land clearing causes immediate deaths that are physically painful and psychologically distressing due to their traumatic and debilitating nature (Finn and Stephens 2017). Such mortality can be direct when animals may be crushed by falling vegetation, buried alive, or suffer fatal injuries from machinery (Finn 2017).

   It can also be indirect - for instance, when logging increases fire susceptibility (Holdsworth and Uhl 1997) or forces animals into unsafe areas (Blumstein 2010). Each can have significant impacts on population dynamics, particularly for species with low reproductive rates (Blumstein 2010).

   Additionally, the construction of logging roads can increase mortality of resident mammals, amphibians, reptiles, and birds through vehicular accidents and by facilitating the movement of predators (Jones 2000);

b. **PROLONGED SUFFERING**: Animals who survive the initial clearing process often experience prolonged physical injuries, pathological conditions, pain, and psychological distress as they attempt to survive in the cleared environment or in areas they are displaced to (Finn and Stephens 2017). This can include:

i. Dehydration and starvation (Zachary and McGavin 2012; Finn and Stephens 2017);

ii. Exposure to extreme temperatures (Vogelnest and Woods 2008; Ladds 2009; Finn and Stephens 2017);

iii. Increased predation risk (Finn and Stephens 2017);

iv. Injuries from attempts to flee or find new shelter (Wiggins et al. 2010; Finn and Stephens 2017);

v. Stress-related pathologies affecting immune function and reproduction (Blumstein 2010; Finn 2017; Finn and Stephens 2017).

These impacts are particularly severe for less mobile species and young animals. For example, many juvenile animals die from starvation when their mothers are killed or forced to flee (Cogger et al. 2003).

c. **HABITAT DESTRUCTION AND FRAGMENTATION**: Logging destroys habitat, particularly for species who obligately use forests (Robinson and Lindenmayer 2020). This can lead to loss of breeding locations, forced relocation to suboptimal habitats, and decreased likelihood of population persistence (Blumstein 2010). Fragmentation can also lead to mesopredator release, creating additional welfare problems for prey species (Crooks and Soulé 1999; Johnson et al. 2006). The loss of connectivity can also have severe consequences for wildlife, limiting their ability to move across landscapes in search of food, shelter, and mates (DCCEEW 2022);

d. **INCREASED FEAR AND STRESS LEVELS**: Forestry practices may create fear and elevate glucocorticoid levels in animals, leading to chronic stress (Esminger et al. 2020). This can negatively affect the immune system, make animals more susceptible to disease, and potentially cause stress-induced sterility (Wingfield and Ramenofsky 1999; Wingfield and Sapolsky 2003). Chronic stress can also lead to behavioural changes that further compromise animal welfare and survival (Finn and Stephens 2017);

e. **INTERFERENCE WITH COMMUNICATION AND MATE CHOICE**: Human activity, including logging, creates noise that can interfere with animal communication systems (Rosa and Koper 2018; Arcangeli et al. 2023). Additionally, increased water turbidity in logged areas can affect fish visual signals and mating systems, potentially leading to reduced population fitness (Seehausen et al. 1997; Secondi et al. 2007);

f. **SCALE OF IMPACT**: Based on current clearing rates, it is estimated that over 100 million mammals, birds, and reptiles are killed due to land clearing every year in Queensland and NSW alone (RSPCA Australia 2024; Taylor et al. 2024). This large-scale impact underscores the urgent need for comprehensive welfare

f. considerations in forestry practices (Blumstein 2010; Finn and Stephens 2017). The cumulative impact of land clearing on wildlife is immense, with over 500 million animals estimated to have been killed or displaced in Australia between 2000 and 2017 due to habitat loss (Taylor et al. 2017);

g. **LACK OF CONSIDERATION**: Despite the scientific consensus on the harm caused to animals, this welfare impact is rarely factored into environmental decision-making processes regarding land clearing approvals (Finn 2017; Finn and Stephens 2017). The integration of animal welfare science into conservation biology and forestry practices may address this gap (Blumstein 2010). This oversight is particularly concerning given that habitat loss and fragmentation are the primary threats to Australia's threatened species (DCCEEW 2022);

h. **NEED FOR REFORM**: There is a need to develop mechanisms to properly identify, evaluate and consider animal welfare risks and impacts in land clearing decisions. This could include requirements to estimate fauna mortality, assess animal welfare risks, and implement mitigation measures (Finn and Stephens 2017). Such reforms should include the development of welfare-based management strategies and the incorporation of welfare assessments into environmental impact studies (Blumstein 2010). These assessments should consider the various impacts of forestry practices on animal welfare. Additionally, there is a need for stronger legal protections for wildlife habitat and more stringent enforcement of existing regulations (Taylor et al. 2017).

Recognising and addressing these animal welfare concerns is not only an ethical imperative, but also aligns with efforts to conserve populations and species (Macdonald 2023). There is a strong link between animal welfare and conservation outcomes, (Fraser 2010) and addressing welfare concerns can lead to more effective and sustainable conservation strategies (Blumstein 2010). By incorporating animal welfare considerations into land clearing policies and decisions, we can work towards more comprehensive and humane environmental management practices (Finn and Stephens 2017).

This approach is particularly crucial for species like koalas, as highlighted in the following case study. The plight of koalas demonstrates how individual animal welfare and species conservation are intrinsically linked, underscoring the need for a holistic approach to land management that considers both immediate suffering and long-term population viability (Pahuja and Narayan 2023). Ultimately, protecting and restoring wildlife habitat is essential not only for biodiversity conservation but also for maintaining the ecological processes that support human well-being and prosperity (DCCEEW 2022).

CASE STUDY

Spotlight on koalas

Koalas are iconic Australian marsupials whose populations face significant challenges due to a range of anthropogenic practices in their habitats. The impacts of logging on koalas are complex and multifaceted, varying based on the type, intensity, frequency, and extent of logging activities (Law et al. 2022a; Law et al. 2022b). These challenges have contributed to the koala's decline, leading to their listing as endangered in NSW under the Biodiversity Conservation Act 2016 (DCCEEW 2023). This status change reflects the severe and ongoing threats to koala populations, including habitat loss, fragmentation, and degradation.

These challenges can be broadly categorised into two main areas of concern:

FOREST CONVERSION IMPACTS

Forest conversion, which involves clearing native forests for plantation timber, has a profound impact on biodiversity, including koala populations (Ashman and Watchorn 2019). Plantation forestry, particularly clear-felling practices, can be especially detrimental. This method, involving the complete removal of the forest canopy, forces koalas to abandon their habitats in search of suitable alternatives (Hynes et al. 2021);

HABITAT QUALITY

While plantations can potentially provide habitat and facilitate connectivity to natural forests, their suitability for koalas depends critically on their composition. Plantations with an appropriate mix of species and mature trees can offer some habitat value (Ashman et al. 2020).

However, the replacement of preferred browsing trees with less palatable secondary species significantly diminishes habitat suitability (Natural Resources Commission 2022). The failure to retain forest remnants within plantations further reduces their ecological value for koalas (Kavanagh and Stanton 2012).

A number of recent cases have highlighted the severe risks that plantation logging poses to koala populations:

- In January 2024, several koalas were found dumped on cardboard by the roadside near

CASE STUDY

Spotlight on koalas

- Portland, Victoria, following logging operations in a blue gum plantation (Brine 2024);
- During the 2019-20 bushfire season, over 60,000 koalas were impacted by the fires in Australia (Readfearn 2020). The loss of habitat due to both fires and logging has put additional pressure on surviving populations;
- On Kangaroo Island in March 2024, footage emerged of koalas being killed or injured during plantation logging operations (Clarke and Morton 2024; Horn 2024; Morton 2024);
- In Victoria, koala deaths have been linked to plantation logging along the Western Freeway (Hoadley 2024);
- In February 2020, a logging operation in Victoria resulted in the deaths of at least 40 koalas, with many others injured (Smoleniec and Dinham 2020).

CRITICISMS OF CURRENT FORESTRY PRACTICES

Several forestry practices have been criticised for their negative impacts on koala conservation:

- Overuse of clear-fell forestry, creating large gaps in forest cover;
- Introduction of non-preferred browse tree species;
- Removal of favoured tree species in native forests;
- Focus on promoting regrowth of secondary, less favoured species.

These practices collectively contribute to the degradation of koala habitats and have been identified as detrimental to koala conservation efforts (Smith 2004).

ONGOING CHALLENGES AND CONSERVATION EFFORTS

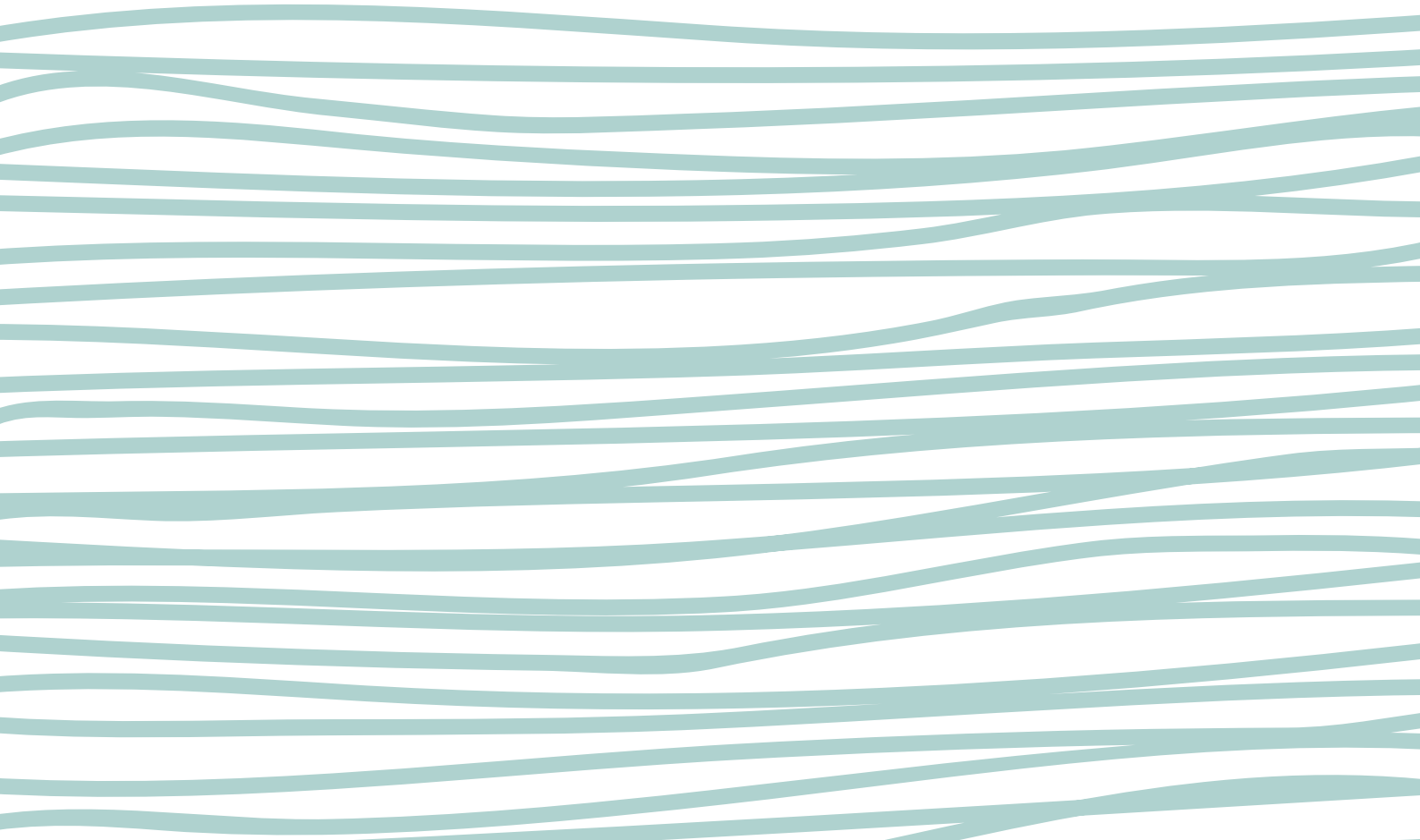
The deaths and injuries of koalas during logging operations remain a significant concern (Mayers and Jeuniewic 2023). In response, non-governmental organisations have advocated for a consistent national code of practice for forestry operations in koala habitats (Cadman et al. 2023). However, these efforts have yet to result in comprehensive, enforceable regulations.

Additional factors affecting koala populations include:

- Climate change: Increasing temperatures and more frequent extreme weather events are putting additional stress on koala populations, affecting their habitat and food sources (Lunney et al. 2012);
- Disease: Chlamydia and other diseases are significant threats to koala health, with habitat stress potentially increasing their susceptibility (Polkinghorne et al. 2013);
- Urban development: Expanding urban areas are encroaching on koala habitats, leading to increased vehicle strikes and dog attacks (McAlpine et al. 2015);
- Cumulative impacts: The combination of these threats, along with forestry practices, creates a complex challenge for koala conservation, requiring a multifaceted approach to management and protection (Rhodes et al. 2011).

SECTION THREE

RECOMMENDATIONS



SECTION THREE

RECOMMENDATIONS

On the basis of the submission above, Animal Liberation recommends that the Independent Panel institute:

3.1 A COMMITMENT TO END NATIVE FOREST LOGGING

The citizens of NSW are closely monitoring the state's progress in addressing the critical issue of species extinctions. There is a palpable sense of anticipation for tangible improvements in biodiversity conservation. While the recent change in government has instilled hope for a significant shift in environmental policies and practices, it is imperative to recognise that time is of the essence. Each day that passes without decisive action results in the irreversible loss of invaluable forest ecosystems. The public expects and urgently requires the implementation of robust conservation measures to halt and reverse the alarming trend of biodiversity loss in our state. It is crucial that the new administration demonstrates its commitment to environmental stewardship through prompt and effective policy interventions.

3.2 A MORATORIUM ON ALL NEW NATIVE FOREST LOGGING

In light of the urgent need for industry transition and environmental conservation, it is imperative to implement immediate protective measures for our native forests. A moratorium on new logging operations in areas where such activities have not yet commenced is a critical step towards preserving our invaluable forest ecosystems. This precautionary approach serves multiple purposes:

a. **HABITAT PRESERVATION**: It ensures the integrity of native habitats, which are crucial for the survival and recovery of numerous species;

b. **BIODIVERSITY PROTECTION**: By maintaining intact forest ecosystems, we safeguard the habitats of threatened and forest-dependent species, contributing to biodiversity conservation;

c. **ENVIRONMENTAL RESILIENCE**: Preserving these forests enhances their capacity to provide essential ecosystem services, including carbon sequestration and water regulation;

d. **STRATEGIC PLANNING**: A halt on new logging operations allows for the development of a comprehensive, sustainable industry transition plan without further compromising our natural resources;

e. **ECOLOGICAL ASSESSMENT**: A moratorium provides opportunity to conduct

e. thorough ecological assessments, ensuring that management decisions are based on robust scientific data.

Implementing such a moratorium is not only an environmentally responsible action, but also a prudent economic measure. It allows for the careful consideration of alternative, sustainable forest management practices that can support both ecological integrity and long-term economic viability. This approach aligns with the principles of ecologically sustainable development and demonstrates a commitment to balancing environmental conservation with socio-economic needs.

3.3 A PLAN TO TRANSITION THE INDUSTRY

The native forest logging industry in NSW is experiencing a significant decline, which is having adverse effects on workers and communities due to the absence of a comprehensive transition plan. A well-designed transition plan is crucial to facilitate the shift from forestry to more sustainable practices. To address these challenges, it is imperative to develop and implement a comprehensive strategy that focuses on:

a. **WORKFORCE TRANSITION**: Ensuring all current workers in the forestry industry have opportunities for meaningful employment in other sustainable practices;

b. **SKILLS DEVELOPMENT**: Providing targeted training and upskilling programs to equip workers with the necessary skills for roles in sustainable industries;

c. **COMMUNITY SUPPORT**: Implementing measures to support affected communities through the transition period, including economic diversification initiatives and social support programs;

d. **ENVIRONMENTAL CONSERVATION**: Balancing economic needs with the preservation of native forests, ensuring their ecological value is maintained for future generations.

By adopting a holistic approach, it is possible to create a scenario where both people and communities can thrive alongside the conservation of our native forests. This transition not only addresses the immediate economic concerns but also aligns with broader environmental sustainability goals and the long-term health of the state's ecosystems.

3.4 ALIGN REGULATIONS WITH BEST PRACTICES

During the transition period, to address the current ambiguities and inconsistencies in New South Wales' plantation regulations, we recommend the following:

a. **REVISE THE *PLANTATIONS AND REAFFORESTATION ACT***: The PRA should be updated to include clear definitions and distinctions between native forests and plantations, aligning with the FAO definitions used in the Global Forest Resources Assessment;

b. **STRENGTHEN NATIVE VEGETATION PROTECTION**: Introduce specific prohibitions on the conversion of native forest to plantation, similar to policies adopted by other Australian states. This should include clear protection measures for remnant vegetation and ecologically significant areas;

c. **IMPLEMENT STRICT AND ENFORCEABLE LIMITS**: Revise the current exceptions that allow for clearing of native vegetation within plantations and establish more stringent limits on clearing, particularly for areas smaller than one hectare and for trees of specific diameters;

d. **ADOPT CLEAR PLANTATION DEFINITIONS**: Introduce policies and guidelines that emphasise the planting of trees as a central attribute of plantations, in line with other Australian states and international standards such as the EU regulation on deforestation and forest degradation ('EUDR');

e. **IMPROVE TRANSPARENCY AND REPORTING**: Establish a clear reporting mechanism for plantation establishments and expansions, ensuring that any conversion of native vegetation is accurately documented and publicly accessible;

f. **REGULAR POLICY REVIEW**: Implement a system of regular review and update of plantation policies to ensure they remain consistent with best practices in forest management and conservation.

By implementing these recommendations, New South Wales can bring its plantation regulations in line with national and international standards, ensuring better protection of native forests while supporting sustainable plantation forestry.

3.5 FUNDING FOR VOLUNTEER WILDLIFE RESCUE ORGANISATIONS

The devastating impacts of forestry operations on native wildlife underscore the critical role played by volunteer wildlife rescue organisations in New South Wales. These dedicated networks often serve as the last line of defence for injured, orphaned, and displaced animals affected by logging activities. However, these organisations frequently operate with limited resources, struggling to meet the increasing demands placed upon them. In light of this, and to ensure the welfare of affected wildlife during the transition towards more sustainable forest management practices, we strongly recommend an immediate and substantial allocation of funding to all volunteer wildlife rescue organisations operating in New South Wales. This funding should aim to:

a. **ENHANCE RESCUE CAPABILITIES**: Provide resources for equipment, vehicles, and facilities necessary for effective wildlife rescue and rehabilitation;

b. **SUPPORT TRAINING PROGRAMS**: Fund comprehensive training initiatives to ensure volunteers are equipped with the latest knowledge and skills in wildlife care and rescue techniques;

c. **EXPAND OPERATIONAL CAPACITY**: Enable organisations to increase their volunteer base and extend their geographical reach, particularly in areas affected by logging operations;

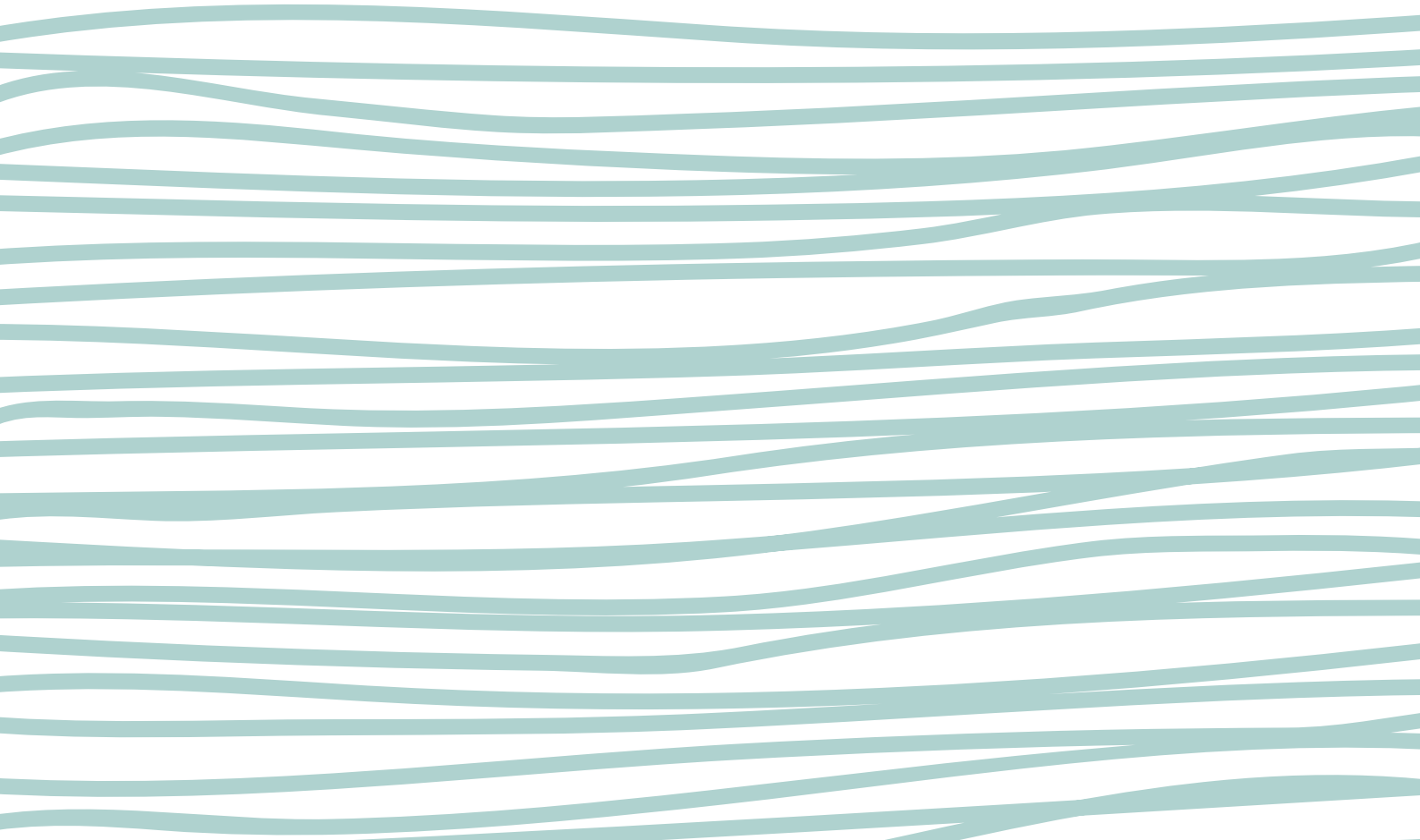
d. **IMPROVE MEDICAL CARE**: Allocate funds for veterinary supplies, medical equipment, and partnerships with wildlife veterinarians to improve the quality of care for injured and displaced animals;

e. **CREATE PUBLIC AWARENESS PROGRAMS**: Fund educational initiatives to inform the public about the importance of wildlife conservation and the impacts of habitat loss.

This immediate funding injection is crucial to address the increased pressure on wildlife rescue services resulting from ongoing forestry operations and to ensure the welfare of affected native fauna during the transition period towards more sustainable forest management practices.

SECTION FOUR

CONCLUSION



SECTION FOUR

CONCLUSION

The forestry industry in NSW stands at a critical juncture. This review has highlighted the complex interplay between economic interests, environmental conservation, animal welfare and regulatory frameworks that govern the state's forest management practices. Several key points emerge from our analysis:

a. **UNSUSTAINABLE PRACTICES**: Current forestry operations in NSW are unsustainable. They contribute significantly to biodiversity loss, habitat degradation, and climate change, while also compromising essential ecosystem services;

b. **REGULATORY SHORTCOMINGS**: The existing regulatory framework is inadequate. It fails to align with international standards and best practices, leaving NSW as an outlier in forest management approaches;

c. **ENVIRONMENTAL IMPACT**: The logging of native forests has led to the degradation of approximately 435,000 hectares, affecting the habitats of numerous threatened species. This practice is incompatible with NSW's biodiversity conservation goals and international commitments;

d. **ECONOMIC TRANSITION**: While the forestry industry provides economic benefits, particularly in regional areas, its current model is not sustainable in the long term. There is an urgent need for a fair and well-planned transition towards more sustainable practices;

e. **CLIMATE CHANGE**: Forestry operations contribute to climate change through carbon emissions and increased bushfire risks, further exacerbating environmental challenges;

f. **OVERSIGHT AND ENFORCEMENT**: There are significant issues with the oversight and enforcement of forestry regulations, including resource limitations, inadequate risk assessment, and inconsistent monitoring.

g. **ANIMAL WELFARE**: Current forestry practices in NSW have significant adverse impacts on animal welfare, causing direct mortality, prolonged suffering, and habitat destruction for millions of animals annually. These impacts are often overlooked in environmental decision-making processes, despite scientific consensus on the harm caused. There is an urgent need to integrate animal welfare considerations into forestry policies and practices, including developing mechanisms to assess and mitigate welfare impacts.

In light of these considerations, we strongly recommend an immediate commitment to end native forest logging in NSW. This should be accompanied by a comprehensive plan to transition the industry towards sustainable

alternative economic opportunities in affected regions. Furthermore, during the transition period, it is crucial to align NSW's forestry regulations with international standards, strengthen environmental protections, and enhance monitoring and enforcement capabilities. This approach will not only protect the state's unique biodiversity and ecosystem services but also ensure the long-term sustainability of the forestry sector and the communities it supports.

IMAGE SOURCE: NORTH EAST FOREST ALLIANCE

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