



**Environmental
Protection
Authority**

Forest Management Plan 2024–2033

Conservation and Parks Commission

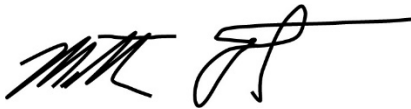
Report 1745

August 2023

This assessment report has been prepared by the Environmental Protection Authority (EPA) under s. 44 of the *Environmental Protection Act 1986* (WA). It describes the outcomes of the EPA's assessment of the draft Forest Management Plan 2024–2033 proposal by the Conservation and Parks Commission.

This assessment report is for the Western Australian Minister for Environment and sets out:

- what the EPA considers to be the key environmental factors identified in the course of the assessment
- the EPA's recommendations as to whether or not the proposal may be implemented and, if it recommends that implementation be allowed, the conditions and procedures, if any, to which implementation should be subject
- other information, advice and recommendations as the EPA thinks fit.



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25 August 2023

ISSN 1836-0491 (Online)
Assessment No. 2361

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Summary

Proposal

The proposed Forest Management Plan 2024–2033 (the proposed FMP) is a proposal to undertake a range of management activities, including conservation reserve creation, ecological thinning, and prescribed burning. The proposal covers an area of approximately 2,522,000 hectares (ha) of land and waters vested in the Conservation and Parks Commission in the south-west of Western Australia.

The proponent for the proposal is the Conservation and Parks Commission (the Commission).

The proposed FMP is a plan prepared in accordance with the *Conservation and Land Management Act 1984* (CALM Act) to fulfil the statutory purposes for which the land is reserved. There are four operational elements of the proposal defined by the proponent:

- conservation reserve creation
- ecological thinning
- prescribed burning
- other management and regulated activities.

Context

The proposed FMP is a departure from the format and purpose of previous plans following the State Government’s decision to end logging of native forests (September 2021). The proposed FMP primarily focuses on the management of forest ecosystems (categorised as State forest and timber reserves) and incorporates management activities to manage threats, reduce pressures, and protect intact ecosystems over the next 10 years (Conservation and Parks Commission 2023).

The proposal area is located within the South West Native Title Settlement Area primarily within the Whadjuk, Gnaala Karla Booja, Karri Karrak (formerly South West Boojarah) and Wagyl Kaip and Southern Noongar agreement areas. A diverse range of archaeological, ethnographic, and historical sites of ongoing spiritual, historical, and cultural importance and significance occur throughout the area.

Environmental values

Forest ecosystems are the combination of species, soils, geology, topography, and climate connected by physical and biological processes specific to any given location, with trees as the dominant vegetation. Twenty-six forest ecosystem types have been identified across the proposal area; jarrah and karri forests are the most extensive. Non-forest ecosystems are interspersed throughout the plan area and include rocky outcrops, sand dunes, swamps, and shrub, herb and sedgeland.

The proposal area is located within the Southwest Australia biodiversity hotspot and contains a multitude of plant and animal species, ecological communities, and rivers, streams, and wetlands.

Assessment context

The EPA's approach to assessing the proposed FMP differs from that usually employed to assess other projects and developments. The EPA has assessed the proposed activities based on process-level information, rather than project-level information. For key elements of the proposed FMP, the EPA has assessed relevant key environmental factors together, rather than separately. The EPA has also had regard to the existing statutory provisions governing the proposed FMP.

Consultation

The proponent published a draft of the proposed FMP for a statutory two-month public consultation in October 2022. Approximately 3,500 submissions were received. The proponent revised the draft plan in response to submissions.

The EPA published the proponent's proposed FMP and associated referral information on its website for seven days public comment, 653 comments were received. The EPA also undertook targeted consultation with 12 key stakeholders and groups from 21 June to 12 July 2023. The EPA considered the comments received during its assessment.

Mitigation hierarchy

The mitigation hierarchy is a sequence of proposed actions to reduce adverse environmental impacts. The proponent considered the mitigation hierarchy in the development and assessment of its proposal and as a result will:

- largely exclude thinning activities in disturbance avoidance zones
- seasonally restrict thinning to minimise the risk of introducing or spreading dieback disease
- restrict the use and type of pesticides in public drinking water source areas
- plan prescribed burns at times of stable weather conditions to minimise risk of unplanned spread
- plan burns to minimise impacts to sensitive environmental values.

Assessment of impacts

The EPA has identified the key environmental factors in the course of the assessment. The EPA has assessed the residual impacts of the proposal on the environmental values and considered whether the environmental outcomes are likely to be consistent with the EPA environmental factor objectives.

Conservation reserve creation

The EPA supports the addition of 400,000 ha to the conservation estate as it will contribute to the conservation of biological diversity and ecological integrity and

should ensure that the health, diversity, and productivity of those areas is maintained, if not improved, for the benefit of future generations. The EPA has recommended a number of factors be prioritised when identifying areas for protection, being protection of northern jarrah forest to achieve regional forest agreement reserve system targets, areas of significant conservation and biodiversity values, ecological linkages, and expansion of existing reserves.

The EPA recommends implementation conditions that require reporting against the progress towards achieving the 400,000 ha target and the expected timelines for completion. If targets are unlikely to be met by the end of the term of the proposal, an explanation as to why this is the case is to be provided along with a demonstration that target areas are being managed in line with the intended purpose or category of those areas.

The EPA also recommends a condition requiring that progress towards achieving the previously proposed additions to the conservation estate are to be included in the periodic assessments. The EPA considers that the expansion of the conservation estate is likely to meet the EPA factor objectives for flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality.

Ecological thinning

The primary intent of ecological thinning is to promote forest health and resilience in order to conserve biodiversity. Ecological thinning will largely be limited to areas of dense regrowth of jarrah, karri, and wandoo, and mine site rehabilitation. It will target smaller trees and retain habitat trees and forest canopy.

The EPA supports the identification of disturbance avoidance zones to guide the indicative locations of ecological thinning. The proposed FMP provides that some limited ecological thinning may be undertaken within disturbance avoidance zones and conservation reserves. This is to be determined by the proponent on a case-by-case basis where it is considered there is a high likelihood that thinning would enhance conservation outcomes. While this objective is broadly supported, the EPA came to the view that an evaluation of whether ecological thinning operations are likely to achieve environmental outcomes and objectives should be undertaken and reported on before thinning occurs in high conservation value areas. The EPA has recommended there be evaluation reporting before thinning activities can occur in disturbance avoidance zones, with a strong preference that it not occur in these areas for the term of this plan.

The EPA considers that ecological thinning has the potential to maintain the ecological integrity and biological diversity of forest ecosystems. This is provided that it is underpinned by a transparent adaptive management approach and supported by a robust monitoring and research program capable of demonstrating the potential benefits of ecological thinning to forest health and resilience under a changing climate. While this is committed to in the proposed FMP, further details still need to be developed about how it will be implemented and contribute to future development of guidelines, prescriptions, and plans.

The EPA supports the overall intent of ecological thinning, given it has the potential to enhance forest health and resilience while conserving biodiversity and maintaining ecological integrity for future generations. The EPA is of the view that the EPA factor objectives for flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality are likely to be met subject to the implementation of the recommended conditions.

Prescribed burning

As described in the proposed FMP, prescribed burning is the process of planning and applying fire to a predetermined area under specific environmental conditions to achieve a desired outcome. The EPA notes the primary consideration when planning and implementing prescribed burning is to protect life (people and communities), with biodiversity conservation and other land management considerations also an integral part of the process.

The management directions for prescribed burning in the proposed FMP includes consideration for biodiversity, research into fire behaviour and fire ecology, and monitoring of fire impacts and outcomes in relation to forest health and biodiversity values. Despite the ecological reliance of some species and communities on fire, prescribed burning has the potential to alter the biological composition and ecological function of forest and non-forest ecosystems.

To mitigate the potential impacts of prescribed burning, the proposed FMP provides for the Department of Biodiversity, Conservation and Attractions (DBCA) to undertake burning when weather conditions are more stable and to minimise impacts to fire-sensitive areas and values.

A range of views both supportive and critical are held with respect to prescribed burning in relation to:

- the priority given to the protection of high conservation values
- the applicability of alternative methods to bushfire mitigation
- the knowledge and experience held by DBCA in relation to bushfire management in Western Australia
- the suitability of the current management approach to the target ecosystems
- the adequacy of monitoring, performance reviews, and reporting.

The EPA is aware of the strongly contested and opposing views in relation to the appropriateness of the current approach to prescribed burning to mitigate bushfire risk and protect and maintain environmental values. The EPA also notes views expressed about the need for clear public reporting on the conservation outcomes of prescribed burning.

The EPA considers that prescribed burning likely has a role to play in the management of forest ecosystems and the conservation of biological diversity and ecological integrity. The likelihood that the proposed targets and implementation of the proposed FMP with respect to prescribed burning will achieve this are, however, contested.

Having regard for the emerging scientific evidence and the value of public reporting on prescribed burning outcomes, the EPA is recommending:

- a maximum limit on prescribed burning implementation within the plan area
- prescribed burning locations, activities, and performance against aims or objectives be reported, independently reviewed, and published.

The EPA is recommending the Minister commission an independent scientific review of prescribed burning in order to identify contemporary science and knowledge on the impacts of prescribed burning on biodiversity, particularly in the context of climate change.

Greenhouse gas emissions and storage

The proposed FMP includes elements that have the potential to both sequester and emit greenhouse gases (GHG). The EPA considers that adaptive management within the planning area should have consideration for an improved understanding of GHG emissions from activities, such as prescribed burning and ecological thinning, so that it can be incorporated into future GHG accounting and reporting. The EPA supports the proposed FMP's objective to pursue opportunities for the further reduction of emissions and protection of forest carbon stores and identify carbon sequestration opportunities within the plan area.

Cumulative impacts

The proposed FMP has comprehensively identified multiple pressures and threats on South West forest systems, and recognises the cumulative effects of climate change. Elements of the proposed FMP have sought to ensure forest systems are resilient and adaptable in the face of these cumulative impacts.

Expanded mining activities in the northern jarrah forest, increasing levels of tourism and recreation, and existing activities related to settlement, infrastructure, and agriculture have become more prominent over the term of the current forest management plan. These types of threats and pressures are likely to continue to have implications for forest management over the term of the proposed FMP.

The EPA therefore recommends a condition requiring that the proponent ensure the proposal is implemented to ensure the plan area is maintained and improved to have adequate ecological integrity and self-sustaining characteristics to provide a buffer for likely impacts from climate change, and cumulative impacts from other past, present, and future activities.

Monitoring and research

The proposed FMP proposes to identify and analyse changes to forest ecosystem values and forest health in response to management interventions through a forest health monitoring program.

The EPA has recommended monitoring and performance reporting, which are complementary to the reporting commitments in the proposed FMP, so that the proponent can report against the achievement of EPA recommended environmental outcomes and objectives. The EPA also recommends that the monitoring approach and identified indicators are independently reviewed.

Recognising that the proposed FMP identifies the broad knowledge gaps and uncertainties with respect to key forest values and responses to disturbances and management interventions, the EPA is particularly supportive of prioritising future research to inform the implementation of, and potential impacts from, thinning and prescribed burning management activities and cumulative effects.

The EPA is also supportive of the commitment in the FMP to addressing knowledge gaps through collaborations with other research institutions, non-government organisations, traditional owners, and natural resource management groups.

Holistic assessment

The EPA notes that the proposed FMP facilitates management of the multiple values and uses of South West forests, including biodiversity conservation, customary practices, recreation and tourism, water supply and other forest-based industries. Not all of these values and uses will be managed in the same way and be able to achieve the same level of environmental protection. However, as a whole, the proposed FMP is likely to ensure the achievement of the environmental outcomes the EPA has recommended.

The EPA considered the connections and interactions between relevant environmental factors and values to inform a holistic view of impacts to the whole environment. The EPA formed the view that the holistic impacts would not alter the EPA's conclusions about consistency with the EPA factor objectives.

Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values that are proposed to be protected by the proposal
- environmental values that may be significantly affected by the proposal by certain types of activities
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal as relevant)
- likely environmental outcomes that can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA's objectives for the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- principles of the EP Act.

Given the proposal is a statutory plan, the EPA has had regard to the existing statutory provisions governing its approval and implementation. The EPA considers there are a number of options that could ensure that the implementation of the proposal is consistent with the EPA objectives. These options are set out in section 4 of the report.

The EPA has recommended that the proposal may be implemented subject to the content of the conditions recommended in Appendix A.

Other advice

The EPA may, if it sees fit, include other information, advice, or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal. Accordingly, pursuant to section 44(2a) of the EP Act, the EPA recommends that the Minister give consideration to the following matters.

Conservation and Parks Commission – Independent audit and reviews

The Conservation and Parks Commission is responsible for the proposed FMP under the CALM Act and in fulfilling its statutory obligations is supported by the DBCA. In both the public comments received by the EPA, and as part of its consultations, it was suggested that there were opportunities to increase community confidence in the oversight of the FMP and its environmental performance. Central to this was ensuring that the Commission is able to undertake independent reviews and auditing of activities undertaken by the DBCA and the Forest Products Commission. To meet community expectations, the EPA is of the view that there is merit in the Commission having an enhanced level of oversight in the independent review and assessment of FMP implementation, environmental performance, and achievement of environmental outcomes.

The EPA recommends to the Minister that it consider whether the Commission should be provided with additional resources to bolster its capability to have greater oversight for independent audits, reviews, and periodic assessments. The additional resources should be dedicated to ensuring there is an independent audit function with direct oversight and reporting to the Commission.

Independent scientific review of prescribed burning

The EPA recommends that the Minister commission an independent scientific review of prescribed burning. The review should identify the latest science and knowledge on the impacts of prescribed burning on bushfire mitigation, biodiversity, human health, and GHG emissions in the context of a changing climate, and should provide recommendations to the Minister regarding fire policies, plans, and procedures.

An alternative to an independent scientific review has been suggested in section 5 of the report.

Rehabilitation and restoration

The proposed FMP provides opportunities to enhance and improve the extent of forest ecosystems through the rehabilitation and regeneration of previously disturbed areas at a landscape-scale. The EPA recommends the Minister consider providing adequate resourcing to ensure the program of regeneration/rehabilitation developed through the proposed FMP is effectively implemented.

Communication and engagement

The EPA recognises that the proposed FMP provides for increased involvement of Traditional Owners and increased engagement with stakeholders in the implementation of the plan. It is also noted that DBCA is committed to delivering these elements during the implementation of the FMP.

The EPA has made a number of recommendations to enhance communication and the provision of accessible information, particularly in relation to ecological thinning and prescribed burning activities. The EPA recognises that the environmental reporting recommended has resourcing implications, but notes that public reporting on environmental performance and outcomes is important to the success of the FMP.

The EPA therefore recommends that the Minister consider whether resourcing for the implementation of the proposed FMP, for both the Commission and DBCA, should be enhanced so that the level of engagement, communications and public reporting meet community expectations and is consistent with the EPA's recommended conditions.

1 Proposal

The EPA is aware that language is powerful. Terms used in the draft proposed Forest Management Plan 2024–2033 (the proposed FMP), and subsequently in the EPA’s assessment, have historical meanings that may be hurtful to Indigenous peoples. For the purposes of the assessment, the term ‘reserve’ is used in the context of the *Conservation and Land Management Act 1984* (CALM Act).

The proposed FMP is a proposal to undertake a range of management activities, including conservation reserve creation, ecological thinning, and prescribed burning on lands vested in the Conservation and Parks Commission. The proposal covers an area of approximately 2,522,000 hectares (ha) of land and waters in the South West of Western Australia (see Figure 1).

The proposed FMP is a statutory plan prepared in accordance with the CALM Act to fulfil the statutory purposes for which the land is reserved. The proposed FMP does not include management of conservation reserves where a specific area management plan is in place. There are currently 26 existing area management plans within the proposal area. Specific area management plans that are developed during the period of the plan will take precedence over the management activities set out in the proposed FMP.

There are four operational elements of the proposal defined by the proponent in the proposal content document (Appendix H):

- reserve creation – at least 400,000 ha of native forests
- ecological thinning – up to 8,000 ha annually
- prescribed burning – approximately 200,000 ha, or 8%, annually of forested areas managed by the Department of Biodiversity, Conservation, and Attractions (DBCA)
- other management and regulated activities.

The proponent for the proposal is the Conservation and Parks Commission (the Commission). The Commission published a draft FMP for a statutory two-month public consultation period in October 2022. Approximately 3,500 submissions were received.

In response to comments received, the proponent revised the draft FMP and referred the proposed FMP as a proposal to the EPA on 17 October 2022. The EPA requested further information about the proposal on 21 December 2022. The referral information was published on the EPA website for seven days public comment from 11 to 18 May 2023, and 653 comments were received.

In view of the consultation that had already occurred, on 26 May 2023 the EPA decided to assess the proposal at the level Referral Information with additional information and targeted consultation with relevant stakeholders and groups. The EPA undertook targeted consultation between 21 June and 12 July 2023 and sought

clarification from the DBCA on various aspects of the proposed FMP during the course of the assessment.

The proposal is set out in the proponent's proposal content document and referral supplementary information document (prepared by the DBCA on behalf of the proponent), which are available on the EPA website.

Proposal context

The proposed FMP largely focuses on the management of forest ecosystems for conservation and other purposes and is a departure from the format and purpose of previous plans following the State Government's 2021 decision to end commercial logging in native forests. The proposed FMP specifically excludes timber production on a sustained yield basis in native State forest and timber reserves.

The proposed FMP is an overarching document that sets out directions, objectives, and broad activities to guide forest management within the plan area. Supporting documents to enable implementation of the proposed FMP (such as guidelines, prescriptions, and monitoring plans) are being developed by DBCA, the agency responsible for the management of CALM Act lands.

The proponent has defined a healthy native forest as one that continues to sustain natural ecosystem components, including biodiversity and biophysical, ecological, and evolutionary processes. Forest resilience in relation to disturbance is described as the capacity to maintain or regain a healthy condition over time.

The proposed FMP area primarily occurs over the Whadjuk, Gnaala Karla Booja, Karri Karrak (formerly South West Boojarah) and Wagyl Kaip and Southern Noongar Agreement areas. A large number of Indigenous cultural sites have been recorded within the plan area. Many more unrecorded sites are likely to occur. These sites are diverse and include archaeological sites associated with previous Noongar land use, and ethnographic and historical sites of ongoing spiritual, historical, and cultural importance and significance to Noongar people.

Environmental context

Forest ecosystems are the combination of species, soils, geology, topography, and climate connected by physical and biological processes specific to any given location, with trees as the dominant vegetation (Conservation and Parks Commission 2023). More than 312 vegetation complexes and 26 forest ecosystem types have been identified as occurring in the proposed FMP area. Jarrah and karri forest ecosystems are the most extensive forest types. Non-forest ecosystems are interspersed throughout the area and include rocky outcrops, sand dunes, swamps, and shrub, herb, and sedgeland.

The area covered by the proposed FMP supports more than 3,750 plant species, 124 listed as threatened under the *Biodiversity Conservation Act 2021* (BC Act). A further 583 species are considered priority flora by the DBCA. There are 33 threatened ecological communities and 68 priority ecological communities. Sixty-seven high priority weed species have been identified in the area.



Figure 1: Project location

Thirty-four species of native mammals, 141 terrestrial birds, 113 waterbirds, 89 reptile, and 25 frog species are known to occur in or whose range overlaps the area, several of which are restricted to forested areas. Numerous species are listed as threatened under the BC Act, or as priority species by the DBCA. Three threatened frog species are restricted to the forest region and have small distributions and population sizes. Multiple pest vertebrates and invertebrates are known to occur within the area, including cats, foxes, pigs, goats, horses, deer, multiple bird species, and honey bees.

Across the proposed FMP area, unconfined aquifers occur at shallow depth on the Scott River and Swan Coastal plain. Water tables on the Yilgarn Craton vary in depth from surface expressions to more than 40 metres below ground level. Across the South West region, the major aquifers from shallow to deep are the superficial, Leederville, and Yarragadee.

A large variety of wetlands and waterways occur across the proposed FMP area. Peat deposits are known from wetlands along the south coast. Five wetland suites are recognised under the international Ramsar convention. A further 39 sites are listed on the directory of important wetlands in Australia. There are six wild river catchments within the proposed FMP area.

Numerous public drinking water source areas and water catchment protection areas occur across the proposed FMP area. The north-western jarrah forest contains 15 drinking water dams that supply water to the integrated water supply scheme. The dams receive flow from surrounding forested areas.

Forest ecosystems are used for a variety of purposes. They have aesthetic, cultural, economic, recreation, tourism, and other values directly related to the physical and biological surroundings of those ecosystems.

The planning area contains deposits of bauxite, gold, lithium, and coal. There is the potential for deposits of nickel, copper, cobalt, and platinum-group elements to occur. The area also contains basic raw materials including sand, clay, hard rock, limestone, gravel, and other construction and road building materials.

Policy context

The protection and management of the environmental values within Western Australia's South West forests are directed by various state and commonwealth policies and guidelines.

The Western Australian Regional Forest Agreement (RFA) is the primary strategic framework for the management of forests within the proposal area. The RFA sets out government obligations and commitments to ensure the sustainable use and management of South West forests. A key component is the establishment and enhancement of a comprehensive, adequate, and representative (CAR) reserve system. The CAR principle is central to the Commonwealth Government's national reserve system framework which aims to maximise biodiversity conservation by determining priority areas for reservation (Commonwealth of Australia 1997).

Ecologies of threatened or priority species, under-protected habitats, and areas of refugia or national importance may factor into the identification of priority areas.

The Commonwealth's *Nature Positive Plan* provides support for the continued operation of RFAs and for the expansion of the conservation reserve system, by committing to protect 30% of Australia's land and seas by 2030 (DCCEEW 2022). Expansion of the conservation reserve system is also consistent with key outcomes from the *Native Vegetation Policy for Western Australia*, including creating net gain and landscape-scale conservation and restoration for native vegetation (DWER 2022). The policy also highlights the importance of the CAR conservation reserve system as a mechanism for conserving native vegetation, species, and communities.

The proposed FMP notes that climate change will pose a significant challenge for conservation of biodiversity and forest health, and that impacts from a drying and warming climate have already been detected in the South West forests. This is consistent with the *Western Australian Climate Policy* which recognises declining rainfall, drought, longer, hotter summers, and extended bushfire seasons as potential challenges associated with a changing climate (DWER 2020).

The EPA notes that some management activities proposed under the plan will be related to specific commonwealth and state guidelines, including commonwealth advice on key threatening processes listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and relevant species recovery plans.

Assessment context

The proposed FMP is a statutory plan (developed under the CALM Act). This has resulted in there being some differences to the EPA's assessment approach compared to the projects and developments the EPA usually assesses. These differences include that the EPA has:

- assessed the plan based on process, rather than project-level information about proposed activities
- assessed relevant environmental factors together, rather than separately, for key plan elements
- had regard to the existing statutory provisions governing the proposed FMP, including its public consultation requirements, existing land category purposes, and the proponent's evaluation and performance review of the proposed FMP.

Managing permitted disturbance activities

In managing lands vested in the Conservation and Parks Commission, the EPA notes the DBCA has an internal process to assess impacts of planned disturbance activities or necessary operations on CALM Act lands, other than from resource development activities, referred to as the disturbance approval system (DAS). The purpose of the DAS is to inform the assessment of risk to environmental, social, and economic values of a proposed activity prior to implementation. This process aims to help ensure approved activities are consistent with objectives, management plans, and land use categories, and that impacts on identified values are minimised. The

DBCA state the aim of the DAS is to provide a consistent assessment mechanism for disturbance activities, enabling consideration to be given to avoiding or mitigating impacts on biodiversity and conservation assets.

Numerous planned disturbances and developments require assessment and management through the DAS, including recreation site development, access maintenance, basic raw material extraction, and work carried out on boundaries of prescribed burns and bushfires. The proposed FMP states that individual ecological thinning operations will be assessed and managed through the DAS. The EPA notes that prescribed burning activities are assessed via a separate process.

2 Assessment of key activities & themes

This section includes the EPA’s assessment of key activities, elements, and themes in the proposed FMP. The key activities requiring assessment were identified by the EPA from matters raised during public and targeted consultation, and from its own inquiries. A number of themes (or topics) were also identified that warranted the provision of EPA advice. The key activities and themes in the proposed FMP are considered to be conservation reserve creation, ecological thinning, prescribed burning, and greenhouse gas (GHG) emissions and storage.

The EPA has incorporated the relevant key environmental factors under the key activities and themes, where relevant and appropriate.

The EPA objectives for the relevant key environmental factors considered during the assessment are:

- flora and vegetation: *to protect flora and vegetation so that biological diversity and ecological integrity are maintained* (EPA 2016a)
- inland waters: *to maintain hydrological regimes and quality of groundwater and surface water so that environmental values are protected* (EPA 2018)
- terrestrial fauna: *to protect terrestrial fauna so that biological diversity and ecological integrity are maintained* (EPA 2016b)
- terrestrial environmental quality: *to maintain the quality of land and soils so that environmental values are protected* (EPA 2016c).

The EPA also evaluated the impacts of the proposal on other environmental factors and concluded these were not key factors for the assessment. This evaluation is included in Appendix D.

2.1 Conservation reserve creation

The EPA has been providing recommendations on the adequacy of existing conservation reserves and proposals for additional national parks and nature reserves for close to 50 years, with the first recommendations published in 1976 as part of the ‘Red Book’ Recommendations for Conservation Reserves. The EPA notes that a central element of the proposed FMP is the maintenance and expansion of the conservation reserve system. The target being to add a minimum of 400,000 ha to the conservation estate over the term of the proposed FMP. The EPA notes that this is in addition to previous commitments and recommendations.

In addition, the proposed FMP intends to maintain informal conservation reserves and fauna habitat zones to minimise any form of disturbance to the values they contain. It is proposed that these areas will be reclassified as disturbance avoidance zones (DAZ) and allocated to one of eight zone types set out in Appendix 1c to the proposed FMP based on the purpose for reservation and the criteria for inclusion.

Specifically, in relation to protected areas, the proposed FMP includes the following activities:

- review and implement tenure changes to achieve conservation reserve proposal targets
- assess areas for increased protection
- investigate opportunities to create protected areas in the northern jarrah forest to meet CAR targets.

Key matters raised

In relation to protected areas, comments were broadly supportive, but a number of matters were raised during consultation:

- historical commitments to expand the conservation estate have not been realised
- there is a need for clarity with respect to the scale, adequacy, and representativeness of the proposed additions to the conservation estate
- the need for timeliness with respect to adding areas to the conservation estate
- consideration should be given to the mapping of potential areas for protection undertaken by DJ Martin in conjunction with the Beeliar and Leeuwin groups.

Assessment of impacts

In noting that areas:

- previously identified for addition to the conservation estate will be prioritised for inclusion and are not included in the additional 400,000 ha identified in the proposed FMP
- previously identified for commercial timber harvesting will be considered for inclusion in new or expanded areas of the conservation estate
- of regrowth forest may be identified for inclusion in the conservation estate following ecological thinning operations
- of State forest, including those in State Agreement Act areas, are also proposed to be considered for inclusion in the conservation estate
- will need to be identified for consideration based on reserve design principles as detailed in Appendix 9 to the proposed FMP,

the EPA strongly supports the expansion of the conservation estate acknowledging that the target is ambitious, particularly in light of the consultative and administrative framework within which tenure changes must take place.

The proposed FMP identifies more than 500,000 ha as indicative areas from which 400,000 ha will be identified for protection. In identifying areas for addition to the conservation estate, consistent with the proposed FMP, the EPA recommends that the following factors be prioritised:

- areas of the northern jarrah forest that are not as well protected as other forest ecosystem types, not impacted by extractive industries, and not already identified for inclusion in protected areas
- significance of conservation values and diversity of values

- ecological linkages and areas connecting existing protected areas
- expansion of existing areas to promote resilience (larger areas being more robust than smaller ones) and improve ecological integrity, particularly of smaller existing protected areas.

With consideration of the EPA objectives for the environmental factors of flora and vegetation, terrestrial fauna, and inland waters, the EPA is supportive of the addition of 400,000 ha to the conservation estate, believing it will not only provide broader conservation benefits for biodiversity and ecological integrity, but that it will be good for the State as a whole, now and for future generations.

Summary of assessment and recommendations

The EPA notes the ambiguity of the proposed FMP in relation to what has previously been identified for addition to the conservation estate and what has been identified in the proposed FMP, and the lack of clarity on the progress towards changes of tenure. The proponent has advised that the target is to add a minimum of 400,000 ha to the conservation estate. This is in addition to the existing recommendations in the current plan (2014–2023), bringing the total proposed expansion of the conservation estate to more than 700,000 ha over the term of the proposed FMP. The proponent has further advised that new and existing recommendations will be pursued concurrently. The EPA is supportive of this approach.

In noting the matters raised during consultation, and having regard for the extensive process involved with tenure changes, the EPA recommends an implementation condition that requires progress towards achieving the addition of the 400,000 ha to the conservation estate and the timelines for completion to be reported in the mid-term and end-of-term periodic assessments. Details on the progress towards achieving the previously proposed additions to the conservation estate are to be included, as the combined additions will be pursued concurrently. If targets are unlikely to be met by the end of term of the proposal, an explanation for why is to be provided in the periodic assessment along with a demonstration that target areas are being managed in line with the intended land category purpose.

The EPA reiterates its support for the addition of 400,000 ha to the conservation estate as it will contribute to the conservation of biological diversity and ecological integrity and should ensure that the health, diversity, and productivity of those areas is at least maintained, if not improved, for the benefit of future generations. The EPA considers that the expansion of the conservation estate is likely to meet the EPA factor objectives for flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality.

2.2 Ecological thinning

The proposed FMP sets out that ecological thinning is an active forest management tool that involves the selective removal of individual trees to improve or maintain ecological values and reduce the current and future moisture stress of a given area.

The proposed FMP proposes the following activities specifically related to thinning:

- develop and implement guidelines for the application of thinning regimes
- undertake thinning trials to explore suitability of thinning prescriptions for the enhancement of ecological values
- identify candidate areas for thinning and prepare publicly available annual plans
- undertake research on the suitability of thinning as a climate change adaptation strategy
- provision of forest products from thinning operations.

The proposal provides for thinning of densely stocked regrowth forests of jarrah, karri, and wandoo, and of assorted species in mining rehabilitation areas. The EPA notes that candidate areas for thinning do not include *Banksia* woodlands or tuart woodlands and forests of the Swan Coastal Plain, or marri, tingle, blackbutt and sheoak forest systems.

Potential impacts

From the proposed FMP, the overall objective of ecological thinning is to reduce competition between trees and facilitate persistence of the remaining vegetation, thereby promoting greater structural diversity of habitat types. Based on this, the proposed FMP contends that ecological thinning has the potential to enhance resilience of forest ecosystems.

Notwithstanding the above, if ecological thinning is not appropriately managed, it has the potential to impact forest ecosystem values from:

- changes in the structure and ecological function of forest ecosystems
- impacts to threatened and priority flora and ecological communities, restricted vegetation complexes, and fauna habitats
- alteration of soils, and surface and groundwater hydrological regimes and soil and water quality.

Mitigation and commitments

The proponent has proposed the following measures to manage impacts to environmental values as a result of ecological thinning:

1. Thinning activities will largely exclude existing and proposed formal conservation reserves and areas designated DAZ; thinning in DAZ areas will only be considered on a case-by-case basis.
2. Thinning in jarrah forests will be seasonally restricted to minimise the risk of introduction or spread of dieback.
3. Restrictions to be placed on the use and type of pesticides permitted to be applied in public drinking water source areas.
4. Permits (under the BC Act) to take, modify, or disturb threatened fauna, flora, or ecological communities are required to be sought prior to any disturbance activities being undertaken.

5. With the exception of prescribed burning, all proposed disturbance activities on CALM Act lands are required to be assessed and managed through the DBCA's DAS to inform the assessment of risk of a proposed activity and provide a mechanism for identifying potential impacts to environmental values.
6. DAS approvals can incorporate additional conditions in order to minimise impacts on identified values.

The EPA further notes that the proposed management activities associated with thinning are broadly described in the proposed FMP and will rely on the development of guidelines and prescriptions for each of the target forest ecosystems.

Key matters raised

In relation to ecological thinning, comments during consultation broadly related to:

- the scope and extent of the program in the proposed FMP being vague and lacking detail
- guidelines and prescriptions for the different forest systems not yet being fully developed and the lack of visibility on what they will include
- the limited detail on the anticipated environmental outcomes of the program and the potential and associated environmental effects
- the need for the program to be implemented using small machinery and/or hand-felling to minimise soil compaction and erosion
- the need for the program to be underpinned by data and scientific research.

Assessment of impacts

In considering the potential impacts on biological diversity and ecological integrity within the plan area, the EPA notes that the intent and primary objective of thinning is to promote forest health and resilience in order to conserve biodiversity. The EPA supports the overall intent and the predicted outcomes of ecological thinning, particularly in light of a continuing drying climate trend.

The proposed FMP has cited some historical information about the potential benefits of thinning on the growth of retained trees and hydrological regimes in catchments. There is, however, limited information available about the potential ecological effects of thinning (including the positive outcomes on forest health and resilience) at the scales and extent nominated in the proposed FMP. For this reason, there are a number of thinning trials underway to inform the development of interim ecological thinning guidelines.

Having noted the:

- Nature of ecological thinning, which will involve the selective removal of trees from areas identified as being vulnerable to impacts of climate change and moisture stress. It is noted that thinning does not involve high intensity modifications to the forest structure, understorey, and soil structure in the same manner as previous silvicultural treatments used in commercial timber harvesting.

- Extent of ecological thinning which will be limited in the proposed FMP to 8,000 ha per year (or up to 80,000 ha over the life of the proposed FMP). It is understood that this limit has been determined in the proposed FMP as a subset of the areas estimated to be the most vulnerable in each forest category over the next decade. To put this in context, there are approximately 1.9 million hectares of forest ecosystem mapped in the proposed FMP area and approximately 1.2 million hectares of state forest and timber reserves.
- Network of DAZs and existing and proposed formal reserves that would maintain ecological integrity and biological diversity at a landscape-scale. The DAZs are based on information and knowledge about environmental values including the presence of aquatic ecosystems, provision of connectivity, landscape heterogeneity, and stand structural complexity, and builds on existing information and areas from the current FMP (that is, a system of ‘informal reserves’ and fauna habitat zones). It is noted, however, that the proposed FMP provides for some limited ecological thinning in the DAZ and conservation reserves to be considered by the Commission on a case-by-case where there is a high likelihood that thinning would enhance conservation outcomes. The EPA has provided a recommendation on this matter below.
- For areas that may be subject to ecological thinning, the proposed FMP sets out that potential impacts to forest ecosystems would be managed by the implementation of silvicultural guidelines and prescriptions that will vary across forest ecosystems. While the interim guidelines and prescriptions are currently being developed, the EPA has been advised that thinning would target smaller trees and retain habitat trees and forest canopy. Current thinning guidelines, historic research, and monitoring programs and field trials are informing the interim guidelines. Detailed prescriptions and procedures to guide thinning operations will follow the preparation of the interim guidelines.

The EPA considers that ecological thinning has the potential to maintain the ecological integrity and biological diversity of forest ecosystems provided there is a strong emphasis on:

- An adaptive management approach during the term of the proposed FMP to selecting candidate areas, and the development and ongoing refinement of the ecological thinning guidelines based on information from trials and research. The EPA notes that the proposed FMP commits to adaptive management but takes this opportunity to reiterate the importance of demonstrating the outcomes of adaptive management in a transparent manner.
- Robust monitoring and research to better understand and demonstrate the potential benefits of ecological thinning to forest health and resilience in light of potential climate change impacts. The EPA has made a recommendation on this matter in section 5.5 of this report.

To manage impacts to soils from vehicles and roading activities, the proposed FMP proposes to build on principles from the current FMP. This includes maximising the use of previously disturbed areas or access under dry soil conditions during ecological thinning operations. It is understood that DBCA are consulting with stakeholders on methods and types of machinery and access tracks that are

appropriate for thinning operations so that it can further minimise impacts on soil disturbance and compaction.

The EPA notes current methods of timber salvage can be modified in a way that further minimises impacts on soil, water, and retained trees. The EPA supports the ongoing development and refinements of guidelines and procedures, and also further evaluation of ecological thinning methods (including appropriate scale and types of vehicles and equipment) to ensure there is no significant degradation of soil and water quality during ecological thinning operations.

Summary of assessment and recommendations

The EPA supports the overall intent of ecological thinning. As a new management approach, ecological thinning has the potential to enhance forest health and resilience and ensure the conservation of biodiversity and maintenance of ecological integrity. Having regard to available information in the proposed FMP, the EPA considers that ecological thinning is likely to meet the EPA factor objectives for flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality.

However, noting comments received during consultation about the absence of detailed information with respect to how thinning will be limited, and that trials and the development of guidelines are still in progress, the EPA considers that ecological thinning should proceed under the following recommendations:

- That ecological thinning proceeds under an adaptive management framework throughout the term of the proposed FMP. This is recognised and already committed to in the proposed FMP and hence the EPA takes this opportunity to reiterate the importance of demonstrating how adaptive management is given effect in FMP reporting and implementation.
- That the EPA supports the commitment in the proposed FMP to undertake robust monitoring and research to better understand and demonstrate the potential benefits of ecological thinning to forest health and resilience in light of potential climate change impacts. The EPA has made a recommendation on this matter in section 2.5 of this report.
- That an evaluation of whether ecological thinning is likely to be able to achieve environmental outcomes and objectives in DAZs or proposed and existing conservation estate should be undertaken prior to thinning activities being implemented in these areas.
- That annual ecological thinning plans identify candidate areas and the criteria used to identify them alongside an evaluation of how planned thinning in the candidate areas is likely to be consistent with the EPA outcomes and objectives.

2.3 Prescribed burning

The proposed FMP sets out that prescribed burning is the process of planning and applying fire to a predetermined area under specific environmental conditions to achieve a desired outcome. Further, prescribed burns follow a 'prescription' with a number of conditions that need to be met.

In WA, prescribed burning is undertaken within a complex policy and legislative framework. Multiple organisations undertake prescribed burning across the State as part of a shared responsibility. The DBCA is responsible for implementing prescribed burning on lands that it manages, including lands the subject of the proposed FMP, and other lands outside the metropolitan area, regional centres, and townsites. The objectives for each prescribed burn, and the methods required, are specified in individual prescribed burn plans.

The EPA notes that the State Government recognises prescribed burning as a *valid and necessary technique for both land management generally and the treatment of bushfire-related risk* (DBCA Corporate Policy No. 88 – Prescribed Burning).

The proposed FMP specifies the following activities related to environmental considerations and prescribed burning:

- implement an annual prescribed burning program with consideration for biodiversity within a risk management framework
- undertake research into fire behaviour and fire ecology to assess impacts of fire and inform management effectiveness and forest health
- monitor fire impacts and outcomes from prescribed burning to inform fire response and use of planned fire in management of forest health and biodiversity values.

The EPA notes that the primary consideration when planning and implementing fire management activities is the protection of life, communities, and assets from the impacts of bushfire. The proposed FMP includes management activities to engage with stakeholders and the community, and to ensure the community is provided with appropriate and timely information and advice on the proposed annual burn options program and day-to-day prescribed burning operations.

Potential impacts

The proposed FMP contends that *fire regimes that are sympathetic to the ecological requirements of forest ecosystems are essential for their effective functioning and can assist in the regeneration of native vegetation and promote the germination of seed, the maintenance or modification of habitats, and release and cycling of nutrients* (Conservation and Parks Commission 2023, p. 78).

Further, the proposed FMP states that *fire regimes that are characterised by an appropriate range and diversity of fire intensities, seasonality, frequency (burn intervals), and spatial heterogeneity will promote ecosystem health and vitality, thereby providing greater resilience to climate change* (Conservation and Parks Commission 2023, p. 78).

The EPA recognises that in the South West of Western Australia, some flora species rely on fire to stimulate reproduction or regeneration, and the structural and floristic diversity of some ecological communities is dependent on fire for its maintenance. The EPA also recognises that the understanding of how ecosystems respond to fire is an evolving field of science, which is complicated by a changing climate.

Regardless of the potential benefits and ecological requirements, if prescribed burning is not appropriately managed, it has the potential to significantly impact environmental values from:

- alteration of biological composition and ecological function of forest and non-forest ecosystems
- impacts to threatened and priority flora and ecological communities, restricted vegetation complexes, fauna habitats, wetlands, and non-forest systems
- changes in soil and water quality.

The EPA notes the Advice to the Commonwealth Minister for the Environment from the Threatened Species Scientific Committee on amendments to the list of key threatening processes under the EPBC Act, which states that there is now strong scientific evidence that certain fire regimes threaten the persistence of much of Australia's biodiversity, despite it evolving through recurring fires (DAWE 2022).

Mitigation and commitments

The proponent has proposed the following measures to manage impacts to environmental values as a result of prescribed burning:

1. Prescribed burns are planned to be undertaken at times of the year when weather conditions tend to be more stable to minimise the risk of unplanned spread.
2. Prescribed burns are planned to minimise impacts to sensitive areas such as rocky outcrops, peat deposits and wetlands, and riparian vegetation.
3. Permits (under the BC Act) to take, modify, or disturb threatened fauna, flora, or ecological communities are required to be sought prior to any disturbance activities being undertaken.

Key matters raised

In relation to prescribed burning, comments during consultation were both supportive and critical and included:

- the need for greater consideration, prioritisation, and protection of high conservation value areas during burn planning
- the role that prescribed burning plays in ensuring ecological health and function in certain forest ecosystem contexts
- the role that prescribed burning plays in reducing uncontrolled fire that poses threats to life and property
- alternatives to the current approach needing to be examined, including mechanical methods
- the challenges associated with pursuing a mechanical approach to bushfire management
- concerns regarding the ability of the program to adapt to and integrate contemporary research findings that indicate that prescribed burning may be detrimental

- the history and knowledge of bushfire management in Western Australia and the suitability of the current approach to the target ecosystems
- the adequacy of pre- and post-burn monitoring, and lack of communication of post-burn performance reviews
- the appropriateness of reporting against prescribed burn targets
- impacts to human health.

Assessment of impacts

The current prescribed burning target aims to have 45% of the forested areas that are managed by DBCA with a fuel age of less than six years. This target equates to applying prescribed burning to 200,000 ha per year, or approximately 8% of the forested areas. The EPA recognises the history of operational evidence and research by DBCA that underpins the proposed fire management approach.

In considering the potential impacts on biological diversity and ecological integrity within the proposal area, the EPA notes the DBCA's fire management and prescribed burning program aims to manage biodiversity at a range of spatial scales and that it is informed by landscape, regional, and local requirements. In addition, prescribed burning aims to:

- protect key values, including fire-sensitive ecosystems
- facilitate spatial and temporal habitat diversity
- support biodiversity
- integrate pest and weed management
- manage carbon emissions.

In assessing the proponent's planned approach to prescribed burning, the EPA has had consideration for the following matters, noting that the CEO of the DBCA is responsible for the implementation of the proposed FMP.

In relation to the purpose of prescribed burning, the EPA notes the strongly contested and often opposing views as to the appropriateness of prescribed burning and its ability to reduce or prevent the impacts of bushfire. The proposed FMP notes that fire science and operational evidence have demonstrated that forests containing high fuel loads burn more intensely, have a longer fire residence time, and are more dangerous and difficult to suppress if fire takes hold. Prescribed burning is therefore the preferred management measure included in the proposed FMP to reduce fuel loads and subsequently mitigate the risks from bushfire.

The EPA also recognises that there is an expanding body of scientific literature suggesting that prescribed burning may contribute to high fuel loads in the short- to medium-term, and that long unburnt forest systems have lower fuel loads and will eventually adjust and become more 'open'. There is also a body of research that suggests the impacts to threatened species (both fauna and flora) from prescribed burning may be significant over both short and long terms.

During consultation, concerns were raised with respect to the implementation of prescribed burning and its impacts on biodiversity and ecological integrity. The EPA was presented with examples where prescribed burns have escaped management boundaries. These escaped prescribed burns have variously resulted in the burning of fire-sensitive ecosystems or species. The EPA understands that DBCA personnel take every care to avoid such impacts and that fire can be unpredictable even with the best planning.

The EPA heard concerns about the implementation of prescribed burning, particularly with respect to a lack of clear information on:

- the methodology used in identifying target areas
- the monitoring undertaken to inform the achievement of stated outcomes
- the reporting of outcomes against individual prescribed fire plans.

Comments during consultation called for more information to be published in relation to the planning and implementation of prescribed burning by the DBCA, particularly in relation to:

- how the program considers biodiversity values and forest health
- how conservation aims or objectives are determined or monitored
- whether conservation outcomes are being achieved.

The EPA is aware that extensive planning is undertaken by the DBCA to identify areas where prescribed burning is likely to provide the greatest benefit from both a risk management perspective and an ecological one. The DBCA's annual burn options program enables detailed planning and burn implementation work to be undertaken. Individual prescribed fire plans are then developed for each planned burn.

The EPA notes that the Commission must conduct periodic assessments of the implementation of management plans. As a component of those periodic assessments, the EPA recommends that the proponent must submit environmental performance reports to the Minister at the mid-point and end-of-term of the proposal. The EPA recommends that the environmental performance reports should report on the performance of prescribed burning in achieving environmental outcomes. The EPA further recommends that the reporting should be independently reviewed. In addition, the proponent should report on prescribed burning activities, including locations. The EPA has also provided other advice in section 5 in relation to prescribed burning and the need for independent reviews.

Summary of assessment and recommendations

The EPA considers that prescribed burning likely has a role to play in the management of forest ecosystems and the conservation of biological diversity and ecological integrity. However, the likelihood that the proposed targets and implementation of the proposed FMP burning program will achieve this are, however, contested.

The EPA notes that the ability and effectiveness of prescribed burning to achieve the stated aims and objectives to protect life and property and support forest ecosystems is also contested.

Having regard for the emerging scientific evidence and the need for greater communication of prescribed burning outcomes, the EPA recommends:

- a maximum limit on prescribed burning implementation within the plan area
- prescribed burning locations, activities, and performance against aims or objectives be reported, independently reviewed, and published
- the Minister commission an independent review of prescribed burning in order to identify contemporary science and knowledge, and potentially an inquiry so that the broader implications of prescribed burning can be considered by government. The EPA has expanded on this recommendation in section 5 of this report.

2.4 Greenhouse gas emissions and storage

Forest ecosystems may function as a net sink for GHG emissions through sequestering and storing atmospheric carbon in soils, living biomass, and dead organic matter. The proposed FMP intends to contribute to the maintenance of the total carbon store of the South West forests through:

- the cessation of large-scale commercial timber harvesting in State forests within the planning area
- the application of silviculture methods to optimise growth in the pine estate
- the application of low intensity prescribed burns to reduce potential impacts from bushfire events, including large-scale emissions
- the promotion of healthy, biodiverse forest ecosystems.

Key matters raised

Comments during consultation raised a number of matters related to GHG emissions:

- the contribution of forests to the carbon cycle
- the potential contributions from high intensity and prescribed burning activities on the carbon balance
- the potential for forest management activities to influence the uptake or release of carbon.

Potential impacts

The EPA notes that the strategic goals of the proposed FMP are generally consistent with enhancing carbon stores and sequestration processes within the South West forests. However, the implementation of some management activities under the proposed FMP may need further research to better account for their contributions to the forest carbon store and also determine any potential increase in carbon emissions. These activities include:

- combustion of vegetation and dead organic matter from implementation of prescribed burning
- removal of vegetation through ecological thinning
- undertaking forest management via vehicle, aircraft, or other machinery type.

Assessment of impacts and recommendations

Consistent with submissions received during targeted consultation, the EPA notes that the method for the accounting and reporting of emissions generated by forest management activities under the proposed FMP requires clarification. Quantitative estimates for the potential carbon gains and losses associated with each management activity proposed have not been provided during the EPA's assessment. However, the EPA notes that quantification of the potential GHG emissions associated with the proposed FMP is complex for a number of reasons.

The inherent uncertainties are primarily determined by the extent and scale of management activities proposed, a lack of empirical data, methodologies, and information available for consistent accounting for emissions from forest management. Fluctuations in the total forest carbon store in response to vegetation gains and losses from disturbance, and the variation in growth rates (and sequestration potential) across forest ecosystems also presents challenges in emissions estimations.

The EPA notes that at the national level, emissions from forestry activities, including biomass combustion associated with prescribed burning, are currently estimated under the Land Use, Land-Use Change and Forestry (LULUCF) category as part of the National Inventory Reporting process (DCCEE 2023). The EPA also notes and supports that the proposed FMP provides for contribution to national and state-level carbon accounting and reporting processes as part of implementing forest management.

Through participation in emissions accounting and reporting processes, data and information on the South West forest carbon store should become more readily available to inform future forest management practices. The EPA recommends that adaptive management within the planning area should include consideration of the accounting and reporting outcomes, and pursue opportunities for the further reduction of emissions and protection of forest carbon stores, where possible.

Other submissions received during consultation proposed that the implementation of prescribed burning and ecological thinning may facilitate the mitigation of carbon emissions in the forests. Submitters contended that the reduction of fuel loads through small, cool prescribed burns and targeted thinning may generate a lesser volume of emissions in comparison to those generated from a bushfire, and that the potential enhancement of forest regrowth post disturbance may provide for new carbon sequestration opportunities.

While prescribed burning and ecological thinning may provide some benefit to the forest carbon cycle, the EPA notes that the future sequestration and storage potential provided from these activities will need to be better understood. The extent

and duration of potential carbon deficit from thinning and burning activities, and the time to returned gain of carbon will need further research during the term of the proposed FMP. The EPA therefore recommends undertaking further research to develop better accounting of forest management activities on the forest carbon cycle. In addition, the EPA supports the commitments in the proposed FMP to undertake investigations into alternative means to increase carbon stores and identify additional carbon sequestration opportunities within the South West forests.

2.5 Cumulative impacts

It is noted that concerns were raised during consultation regarding cumulative impacts from industrial, recreational, and operational activities within the forest systems covered by the proposed FMP.

The EPA notes the proposed FMP has comprehensively identified multiple pressures and threats on the forest ecosystems in the planning area. Furthermore, the proposed FMP recognises that – combined with the ongoing pressures from invasive pest animals, weeds and plant disease spread, high intensity bushfires and human activities – the cumulative effects of climate change are likely to have significant impacts on some South West landscapes.

In recognition of the cumulative threats, including from climate change, the proposed FMP has put forward new directions which differ from previous FMPs. New aspects of the proposed FMP that respond to the range of threats include:

- enhancing the conservation reserve system as a fundamental component of biodiversity conservation
- proposing ecological thinning as a forest management tool to potentially enhance forest resilience
- managing forests to maintain or enhance carbon storage and improve climate resilience.

The EPA makes the observation that several threats have become more prominent during the term of the current FMP and that these threats can have ramifications for forest management planning in the future. This includes expanded mining activities in the northern jarrah forest, increasing levels of tourism and recreation, and existing activities related to settlement, infrastructure, and agriculture.

In light of the diversity of pressures, some public comments have suggested the concept of designated buffers to major development pressures in order to maintain surrounding forest resilience. Others have pointed out the need for a strategic or region-wide consideration of impacts noting that protection within the conservation estate does not preclude development or mining activities in forest ecosystems.

It is important that the Commission is cognisant of these cumulative effects, and that the research and monitoring (discussed in section 2.6) should also consider cumulative impacts as part of ongoing and future forest management planning.

To ensure this, the EPA recommends a condition requiring the proponent to implement the plan with the objective of the plan area being maintained and improved to have adequate ecological integrity and self-sustaining characteristics to provide a buffer for likely impacts from climate change, and cumulative impacts from other past, present, and future activities.

The EPA also considers the proposed FMP provides reasonable opportunity for regional, landscape-scale monitoring and performance reporting and therefore adaptive management of cumulative impacts as far as they relate to forest integrity. The EPA recommends conditions which require this reporting.

To the extent that the proposed FMP is a contributor to cumulative impacts, the EPA recommends that environmental outcome conditions during the implementation of the proposed FMP will be required to meet the holistic values of biological diversity and ecological integrity.

2.6 Monitoring and research

Monitoring

The proposed FMP states that identification and analysis of changes to forest ecosystem values and forest health in response to management interventions will occur through the forest health monitoring program (FHMP). The FHMP proposes to:

- determine the status of key biodiversity and environmental components of forest ecosystem condition
- detect and quantify changes in key forest ecosystem components to understand and predict patterns and drivers of change
- assess the effectiveness of biodiversity conservation and environmental management activities
- inform forest managers, the broader community and policy makers.

The EPA notes that identification of informative monitoring indicators across key forest ecosystem values is a central component of the proposed FHMP. Proposed monitoring indicators will be selected to inform forest composition and biodiversity, forest structure, and forest function and processes. Potential indicators may include threatened species and ecological communities, habitat attributes and patterns, invasive species, hydrological regimes, and soil ecologies. The proposed FMP provides that the frequency and scale of the FHMP may be varied depending on the indicators selected.

The EPA has recommended monitoring and performance reporting which are both complimentary to the existing content of the proposed FMP, and consistent with the principle of best practice environmental regulation requiring proponents to robustly monitor achievement of environmental outcomes.

In considering that the data obtained through the FHMP will inform decision making for future forest management, the EPA recommends that prior to finalising the

monitoring approach, the identified indicators are independently reviewed to ensure that:

- maintenance of ecosystem integrity and biological diversity, which are important elements of the EPA objectives, can be demonstrated as part of the FHMP
- achievement of the EPA’s recommended environmental outcomes and objectives are robustly measured
- the predicted benefits of ecological thinning can be delivered and demonstrated.

The EPA also notes that some forest users actively undertake monitoring of forest ecosystems and forest health as part of academic research projects and commercial operations (for example, the apiary industry). The EPA also recommends that the monitoring program should:

- consider the technical knowledge and experience of these groups and explore opportunities to collaborate and share data and expertise
- be designed with consideration for cumulative impacts as set out above in section 2.5.

Research

Section 6.2.3 of the proposed FMP appropriately identifies the broad knowledge gaps and uncertainties around key forest ecosystem values and ecosystem responses to disturbances and management interventions. Potential areas identified for future research include:

- understanding patterns in composition, diversity and distribution of species and ecosystems, which can also inform effective landscape and habitat rehabilitation and restoration efforts
- identification of effective management supported by knowledge of ecology, status and threats to key species and ecosystems
- increased knowledge of forest structure and condition, and the effects of ecological and physical processes on forest function
- fire behaviour and fire ecology to inform the application of appropriate fire regimes
- potential actions to mitigate and manage current and future impacts of climate change on forest biodiversity and resilience.

The EPA strongly supports the undertaking of future research to inform forest management, particularly on the implementation of, and potential impacts from, ecological thinning and prescribed burning.

The EPA is also supportive of the commitment in the proposed FMP to addressing knowledge gaps through collaborations with other research institutions, non-government organisations, traditional owners, and natural resource management groups. Findings from research should be made publicly available and integrated as part of adaptive management.

3 Holistic assessment

The EPA has taken a holistic approach throughout the assessment considering the proposal's impacts on biological diversity and ecological integrity within the context of the key environmental factors of flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality. Ecological integrity is taken to be the composition, structure, function, and processes of ecosystems, and the natural range of variation of these elements.

To ensure the EPA objectives for these individual environmental factors are achieved in a holistic way, focused on biological diversity and ecological integrity, the EPA recommends the proposed FMP be subject to an environmental outcomes-based condition requiring the proponent ensure the implementation of the plan achieves the following environmental outcomes:

- maintains and improves the biological diversity and ecological integrity of flora and vegetation and terrestrial fauna
- maintains or improves the hydrological regimes and quality of groundwater and surface water
- maintains the quality of land and soils

of forest ecosystems within the plan area so that environmental values are protected.

This recommended condition is complimentary with the objectives of the proposed FMP, and consistent with the principle of best practise environmental regulation through requiring proponents to achieve environmental outcomes.

In assessing the potential impacts on biological diversity and ecological integrity, the EPA has had consideration for the connections and interactions between values associated with flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality to inform a holistic view of impacts.

The EPA considers that expansion of the conservation estate will have positive environmental benefits for environmental values and their interactions by reducing threats and pressures to the forest ecosystems within these areas and ensuring areas are managed for conservation. Similarly, given the overall intent and primary objective of ecological thinning is to promote forest health and resilience in order to conserve biodiversity, this is likely to result in positive outcomes for the EPA's key environmental factors if managed appropriately and in accordance with the recommended conditions. Expansion of the conservation estate and appropriate ecological thinning informed by research and monitoring are likely to improve the biological diversity and ecological integrity of forest ecosystems within the proposal area.

The EPA notes that the proposed FMP facilitates management of the multiple values and uses of South West forests, including biodiversity conservation, customary practices, recreation and tourism, water supply and other forest-based industries. Not all of these values and uses will be managed in the same way and able to achieve the same level of environmental protection. Rather, as a whole, the

proposed FMP should ensure the achievement of the environmental outcomes the EPA has recommended.

Summary of holistic assessment

When the separate environmental factors and values affected by the proposal were considered together in a holistic assessment, the EPA formed the view that the impacts from the proposal would not alter the EPA's views about consistency with the EPA factor objectives as assessed in section 2.

The EPA considers that the proposed FMP is likely to be consistent with the EPA objectives for each of the environmental factors.

4 Recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values proposed to be maintained and protected by the proposal
- environmental values which may be significantly affected by the proposal by certain types of activities
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant)
- likely environmental outcomes which can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA objectives for the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the *Environmental Protection Act 1986*.

The EPA recommends that the proposal may be implemented subject to the following.

Given the proposal is a statutory plan, the EPA has had regard to the existing statutory provisions governing its approval and implementation. As a result, the EPA considers there are a number of options that could ensure that the implementation of the proposal is consistent with the EPA objectives. These options include:

1. The issue of a Ministerial Statement subject to the conditions recommended in Appendix A. The EPA advises this is the usual outcome of an EPA assessment.
2. The issue of a Ministerial Statement which requires the proposed FMP to be amended to reflect the conditions recommended in Appendix A.
3. The issue of a Ministerial direction under section 24 of the CALM Act to require the proponent to ensure the proposal is implemented consistent with the conditions recommended in Appendix A.
4. The issue of Ministerial direction under section 33 of the CALM Act to DBCA to ensure the proposal is implemented consistent with the conditions recommended in Appendix A.

The EPA considers each option will have different implications for the FMP statutory preparation, approval, and implementation processes, including on timing, resourcing, and governance. The EPA considers the decision about which option is optimal is a decision for government, and that provided the proposal is required to be implemented subject to the conditions in Appendix A, or the proposed FMP is amended to reflect their intent, the EPA objectives will be met.

5 Other advice

The EPA may, if it sees fit, include other information, advice, or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal.

Accordingly, pursuant to section 44(2a) of the *Environmental Protection Act 1986*, the EPA recommends that the Minister give consideration to the following matters.

5.1 Conservation and Parks Commission – Independent audit and reviews

The Conservation and Parks Commission has a statutory responsibility for the proposal under the CALM Act and is supported by the DBCA in discharging its responsibilities. This includes DBCA providing support for audits, reviews, and other key functions. The EPA has noted submissions received during consultation recommending there be greater independence to audits, reviews, and monitoring of the proposed FMP implementation, particularly in relation to activities undertaken by the DBCA and the Forest Products Commission. This includes ecological thinning and prescribed burning.

Submitters suggested that DBCA (through arrangements with the Commission) monitors compliance of activities against criteria that have been pre-determined by DBCA, and in some cases monitoring the effectiveness of activities undertaken by DBCA (for example, prescribed burning). Some submitters suggested that a key enhancement would be ensuring the Commission has a level of independent oversight, particularly in respect of auditing, environmental performance reporting, and achievement of environmental outcomes.

To meet community expectations, the EPA is of the view that there is merit in the Commission having an enhanced level of oversight in the independent review and assessments of the proposed FMP.

The EPA recommends to the Minister that it consider whether the Commission should be provided with additional resources to bolster its capability to have greater oversight for independent audits, reviews, and periodic assessments. The additional resources should be dedicated to ensuring there is an independent audit function with direct oversight and reporting to the Commission.

5.2 Independent scientific review of prescribed burning

As noted in section 2.3 of this report, the EPA makes the observation that prescribed burning is one of the most contentious issues in the proposed FMP. There are contested views on the application of contemporary science, knowledge, and experience to prescribed burning activities and concerns that some burns have not been implemented as planned. For this reason, there still remains significant conjecture in sections of the community about the scale, extent, location, avoidance

zones, and timing of prescribed burning, particularly in relation to achieving biodiversity outcomes.

Consistent with submissions received during targeted consultation, and noting the ramifications of prescribed burning on other environmental factors (other than biodiversity related factors), the EPA recommends that the Minister commission an independent scientific review of prescribed burning under the provisions of the EP Act. The review should identify the latest science and knowledge on the impacts of prescribed burning and bushfire mitigation on biodiversity, human health (air quality), and greenhouse gas (GHG) emissions in the context of climate change and make recommendations to the Minister in relation to fire policies, plans and procedures. Such a review should be undertaken by a panel of independent scientists with expertise in the relevant areas.

Alternatively, the Minister may consider it more appropriate for a review (or inquiry) to be conducted by way of an alternative mechanism which can appropriately consider the impacts of prescribed burning against the broader environmental, health, social and economic objectives of the state.

An inquiry would be able to deal with matters related to emergency management, land management, public and private land coordination, governance, Traditional Owner engagement, community engagement, emissions from prescribed burning and associated impacts to air quality, and the need for continuous improvement in prescribed burning science, application, and monitoring. This would enable a whole-of-Government decision to be made about prescribed burning approaches and implementation, taking into account the environmental, social, and economic considerations.

The EPA notes an inquiry would be consistent with the approach taken to the investigation and resolution of similar contested issues in other states, in particular the *Inquiry into the 2019-20 Victorian fire season*. By way of example, this inquiry was held in response to concerns such as:

Scientists, environmentalists and community members heavily criticised the hectare-based approach to planned burning. Critics regarded it as being a blunt tool, with the potential to result in irreversible environmental damage. Perhaps the greatest criticism was the fact that hectare targets do not necessarily result in a reduced risk to people and property, as a hectare-based approach does not ensure that fuel treatments occur in areas where the greatest risk reduction is likely to be achieved. The approach simply incentivised hazard reduction burning in locations where large amounts of land could be treated to better meet the hectare target (Inspector-General for Emergency Management 2020, p.139).

5.3 Rehabilitation and restoration

The EPA supports the proposed FMP objective to develop and maintain self-sustaining ecosystems following disturbance activities, and the corresponding management activity to establish a program to identify candidate sites for regeneration/rehabilitation of historically disturbed areas.

The EPA considers that, through commitments in the proposed FMP, there are opportunities to enhance and improve the extent of forest ecosystems through the rehabilitation and regeneration of disturbed areas at appropriate scales. This would serve to improve biodiversity as well as carbon sequestration objectives. It is noted that some submissions received during consultation suggested that restoration of cleared land be a priority in the proposed FMP, particularly where it can link habitat for species movement and resilience.

The extent and success of rehabilitation and restoration activities will largely depend on the commitment and resources available to implement the activities. In this regard, the EPA recommends that the Minister consider that adequate resourcing is provided to ensure the program of regeneration/rehabilitation developed through the proposed FMP is effectively implemented.

The EPA notes that the State Government *Native vegetation policy for Western Australia* is relevant to this recommendation.

5.4 Communication and engagement

The EPA acknowledges and supports the high level of stakeholder and community engagement by the Commission and DBCA during the planning and preparation of the proposed FMP.

Similarly, the proposed FMP provides for increased involvement of Traditional Owners and increased engagement with stakeholders in the implementation of the plan, and that DBCA is committed to delivering these elements.

In response to public comments about implementation aspects of the proposed FMP, the EPA has made a number of recommendations in the assessment report which may result in greater levels of communication and provision of accessible information, particularly in relation to ecological thinning and prescribed burning activities. The EPA recognises that the recommended environmental reporting has resourcing implications for both the Commission and DBCA, but notes that public reporting on environmental performance and outcomes is important to the success of the FMP.

The EPA recommends that the Minister consider whether resourcing for the implementation of the proposed FMP should be enhanced so that the level of engagement and communications meet community expectations and is consistent with the EPA's recommended conditions.

Appendix A: Recommended conditions

Section 44(2)(b) of *Environmental Protection Act 1986* specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This appendix contains the EPA's recommended conditions and procedures.

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (*Environmental Protection Act 1986*)

FOREST MANAGEMENT PLAN 2024–2033

Proposal: The Forest Management Plan 2024–2033 (FMP 2024–2033) is a statutory plan for the management of approximately 2,522,000 hectares of land and waters vested in the Conservation and Parks Commission in the South West of Western Australia, in accordance with the *Conservation and Land Management Act 1984* to fulfil the statutory purposes for which that land is reserved. The proposal is to undertake a range of management activities, the most significant being conservation reserve creation, ecological thinning and prescribed burning, to balance multiple use objectives, deliver conservation outcomes and enhance ecological and climate resilience.

Proponent: Conservation and Parks Commission

Proponent address: 17 Dick Perry Avenue
KENSINGTON WA 6151

Assessment number: 2361

Report of the Environmental Protection Authority: 1745

Introduction: Pursuant to section 45 of the *Environmental Protection Act 1986*, it has been agreed that the proposal entitled Forest Management Plan 2024–2033 described in the 'Proposal Content Document' attachment of the referral of 17 October 2022, may be implemented and that the implementation of the proposal is subject to the following implementation conditions and procedures:

Conditions and procedures

Part A: Proposal extent

Part B: Environmental outcomes, prescriptions and objectives

Part C: Environmental management plans and monitoring

Part D: Compliance and other conditions

PART A: PROPOSAL EXTENT

A1 Limitations and Extent of Proposal

A1-1 The proponent must ensure that the proposal is implemented in such a manner that the following limitations or extents are not exceeded:

Proposal element	Location	Maximum extent
Operational elements		
Ecological thinning	State forest and timber reserves	No more than 8,000 ha per year
Prescribed burning	All land categories throughout the plan area	No more than 200,000 ha per year

PART B – ENVIRONMENTAL OUTCOMES, PRESCRIPTIONS AND OBJECTIVES

B1 Flora and Vegetation, Terrestrial Fauna, Inland Waters and Terrestrial Environmental Quality

B1-1 The proponent must cause the proposal to be implemented in a manner that:

- (1) maintains and improves the **biological diversity** and **ecological integrity** of flora and vegetation and terrestrial fauna;
- (2) maintains or improves the hydrological regimes and quality of groundwater and surface water; and
- (3) maintains the quality of land and soils,

of **forest ecosystems** within the plan area so that **environmental values** are protected.

B1-2 The proponent must cause the proposal to be implemented so as to achieve the following environmental objectives:

- (1) land areas subject to the plan are managed consistent with the achievement of the environmental outcomes in B1-1 for the entire plan area as well as for the achievement of the objective of any specific land category prescribed for that area under legislation; and
- (2) the plan area is maintained and improved to have adequate **ecological integrity** and self-sustaining characteristics to provide a buffer for likely impacts from:
 - (a) climate change; and
 - (b) cumulative impacts from other past, present, and future activities.

B2 Flora and Vegetation, Terrestrial Fauna, Inland Waters and Terrestrial Environmental Quality

B2-1 The proponent must prepare an evaluation report on whether **ecological thinning** is likely to meet the requirements in condition B1 prior to it being implemented in areas identified as:

- (1) **disturbance avoidance zones;**
- (2) **indicative disturbance avoidance zones;**
- (3) formal conservation reserves; and
- (4) **proposed conservation reserves.**

B2-2 The proponent must publish the evaluation report required by condition B2-1 with the **annual ecological thinning plan** required by condition B3-1 to which the **ecological thinning** relates.

B3 Annual ecological thinning plans

B3-1 **Annual ecological thinning plans** must be published annually and include:

- (1) identification of candidate areas;
- (2) criteria used to identify candidate areas;
- (3) an evaluation of how the planned **ecological thinning** is likely to be consistent with achievement of condition B1;
- (4) outcomes of consultation with the Department of Water and Environmental Regulation and Water Corporation (where **ecological thinning** occurs in drinking water catchment areas), Noongar regional corporations, mining companies, conservation groups, and forest-based industries and businesses; and
- (5) evidence of adaptive management and incorporation of learnings from the implementation of previous **annual ecological thinning plans** to demonstrate continuous improvement.

B3-2 The first **annual ecological thinning plan** must be published no later than 30 June 2024 and subsequent plans must be submitted every year from that date.

B4 Environmental Performance Reporting – mid and end of term assessment

B4-1 The proponent shall submit an Environmental Performance Report to the Minister at year five (5) and year ten (10) after commencement of the plan.

B4-2 The first Environmental Performance Report shall be submitted to the Minister by no later than 30 June 2029, or such other time as may be approved by the **CEO**.

B4-3 The second Environmental Performance Report shall be submitted to the Minister within six (6) months of the expiry of the ten (10)-year period commencing from the date of commencement of the proposal, or such time as may be approved by the **CEO**.

B4-4 In addition to the outcomes of performance assessment set out in section 6.3.2 of the *Draft Proposed Forest Management Plan 2024–2033, May 2023*, each Environmental Performance Report shall report on:

- (1) consistency with achievement of condition B1;

- (2) the performance of **ecological thinning** and **prescribed burning** activities in achieving condition B1;
- (3) the progress towards achieving creation of 400,000 **ha** of **reserve proposals**;
- (4) timelines to complete creation of 400,000 **ha** of **reserve proposals**;
- (5) if **reserve proposals** targets are unlikely to be met by the end of the term of the proposal, an explanation as to why targets are unlikely to be met;
- (6) if not yet formally reserved, a demonstration that identified target areas are being managed consistent with the intended or proposed change of purpose;
- (7) details on the progress towards achieving the **previously proposed additions** to the conservation estate;
- (8) a description of any changes to **ecological thinning** prescriptions and guidelines as evidence of adaptive management; and
- (9) a description of any changes to **prescribed burning** policies and practices as evidence of adaptive management.

B4-5 The proponent must arrange for an **independent review** of:

- (1) the performance of **ecological thinning** and **prescribed burning** activities in achieving condition B1,

as reported in the Environmental Performance Report required by condition B4-1.

B4-6 The findings of the **independent review** required by condition B4-5 are to be submitted with the Environmental Performance Report required by condition B4-1.

B4-7 Each Environmental Performance Report must be published on the proponent's website and provided to the **CEO** in electronic form suitable for on-line publication by the Department of Water and Environmental Regulation within twenty (20) business days of being provided to the Minister.

PART C – ENVIRONMENTAL MONITORING

C1 Conditions Related to Monitoring

- C1-1 The proponent must cause the **forest health monitoring program** to be submitted to the **CEO** and published on the proponent's website within twelve (12) months of the date of this Statement.
- C1-2 The **forest health monitoring program** must:
- (1) include performance criteria which are aligned with the environmental outcomes and objectives in condition B1; and
 - (2) be capable of substantiating and evaluating whether the environmental outcomes and objectives identified in condition B1 are likely to be achieved.
- C1-3 The proponent must arrange for the **forest health monitoring program** to be **independently reviewed** to confirm it is capable of meeting the requirements of condition C1-2. The **independent review** must be submitted to the **CEO** and published at the same time as the **forest health monitoring program** as required by condition C1-1.

PART D – COMPLIANCE, TIME LIMITS, AUDITS AND OTHER CONDITIONS

D1 Non-compliance Reporting

D1-1 If the proponent becomes aware of a potential non-compliance, the proponent must:

- (1) report this to the **CEO** within twenty one (21) days;
- (2) cause **contingency measures** to be implemented;
- (3) arrange for an investigation into the cause and environmental impacts; and
- (4) provide a report to the **CEO** within twenty-one (21) days of being aware of the potential non-compliance, detailing the measures required in conditions D1-1(1) to D1-1(3) above.

D1-2 Failure to comply with the requirements of a condition constitutes a non-compliance with these conditions, regardless of whether the **contingency measures**, or other measures in condition D1-1 above have been or are being implemented.

D2 Compliance Reporting

D2-1 The proponent must provide a biennial Compliance Assessment Report to the **CEO** for the purpose of determining whether the implementation conditions are being complied with.

D2-2 Unless a different date or frequency is approved by the **CEO**, the first biennial Compliance Assessment Report must be submitted no later than 31 March 2026, and subsequent reports must be submitted every two (2) years from that date.

D2-3 Each biennial Compliance Assessment Report must be endorsed by the Chair of the Conservation and Parks Commission.

D2-4 Each biennial Compliance Assessment Report must:

- (1) report on the outcomes of the preceding twenty-four (24) month period commencing from the date of implementation of the statement;
- (2) state whether each condition of this Statement has been complied with, including:
 - (a) exceedance of any proposal limits and extents;
 - (b) achievement of environmental outcomes and objectives; and
 - (c) requirements to implement adaptive management;

- (3) report on annual **ecological thinning** and **prescribed burning** activities for the compliance period, including locations;
- (4) evaluate whether the requirements in condition B1 are likely to be achieved for the areas identified in condition B2-1;
- (5) report on the findings of the **forest health monitoring program**;
- (6) report on excisions from the reserve system, including:
 - (a) location and extent of areas excised; and
 - (b) reason for excision;
- (7) include the results of any monitoring (inclusive of any raw data) that has been required in relation to the monitoring program referred to under Part C in order to demonstrate that the limits in Part A, and outcomes and objectives in condition B1 are likely to be met;
- (8) provide evidence to substantiate statements of compliance, or details of where there has been a non-compliance;
- (9) include the corrective, remedial and preventative actions taken in response to any potential non-compliance;
- (10) be provided in a form suitable for publication on the proponent's website and online by the Department of Water and Environmental Regulation; and
- (11) be prepared and published consistent with the latest version of the Compliance Assessment Plan required by condition D2-5 which the **CEO** has **confirmed** by notice in writing satisfies the relevant requirements of Part C and Part D.

D2-5 The proponent must prepare a Compliance Assessment Plan which is submitted to the **CEO** at least six (6) months prior to the first Compliance Assessment Report required by condition D2-2.

D2-6 The Compliance Assessment Plan must include:

- (1) what, when and how information will be collected and recorded to assess compliance;
- (2) the methods which will be used to assess compliance;
- (3) the methods which will be used to validate the adequacy of the compliance assessment to determine whether the implementation conditions are being complied with;
- (4) the retention of compliance assessments;

- (5) the table of contents of Compliance Assessment Reports, including audit tables; and
- (6) how and when Compliance Assessment Reports will be made publicly available, including usually being published on the proponent's website within sixty (60) days of being provided to the **CEO**.

D3 Contact Details

D3-1 The proponent must notify the **CEO** of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

D4 Time Limit for Proposal Implementation

D4-1 The proposal must be substantially commenced within five (5) years from the date of this Statement.

D4-2 The proponent must provide to the **CEO** documentary evidence demonstrating that they have complied with condition D4-1 no later than fourteen (14) days after the expiration of period specified in condition D4-1.

D4-3 If the proposal has not been substantially commenced within the period specified in condition D4-1, implementation of the proposal must not be commenced or continued after the expiration of that period.

D5 Public Availability of Data

D5-1 Subject to condition D5-2, within a reasonable time period approved by the **CEO** upon the issue of this Statement and for the remainder of the life of the proposal, the proponent must make publicly available, in a manner approved by the **CEO**, all validated environmental data collected before and after the date of this Statement relevant to the proposal (including sampling design, sampling methodologies, monitoring and other empirical data and derived information products (e.g. maps)), and environmental management plans and reports relevant to the assessment of this proposal and implementation of this Statement.

D5-2 If:

- (1) any data referred to in condition D5-1 contains trade secrets; or
- (2) any data referred to in condition D5-1 contains particulars of confidential information (other than trade secrets) that has commercial value to a person that would be, or could reasonably be expected to be, destroyed or diminished if the confidential information were published,

the proponent may submit a request for approval from the **CEO** to not make this data publicly available and the **CEO** may agree to such a request if the **CEO** is satisfied that the data meets the above criteria.

D5-3 In making such a request the proponent must provide the **CEO** with an explanation and reasons why the data should not be made publicly available.

D6 Independent Audit

D6-1 The proponent must arrange for an independent audit of compliance with the conditions of this statement, including achievement of the environmental outcomes and/or the environmental objectives and/or environmental performance with the conditions of this statement, as and when directed by the **CEO**.

D6-2 The independent audit must be carried out by a person with appropriate qualifications who is nominated or approved by the **CEO** to undertake the audit under condition D6-1.

D6-3 The proponent must submit the independent audit report with the Compliance Assessment Report required by condition D2, or at any time as and when directed in writing by the **CEO**. The audit report is to be supported by credible evidence to substantiate its findings.

D6-4 The independent audit report required by condition D6-1 is to be made publicly available in the same timeframe, manner and form as a Compliance Assessment Report, or as otherwise directed by the **CEO**.

Table 1: Abbreviations and definitions

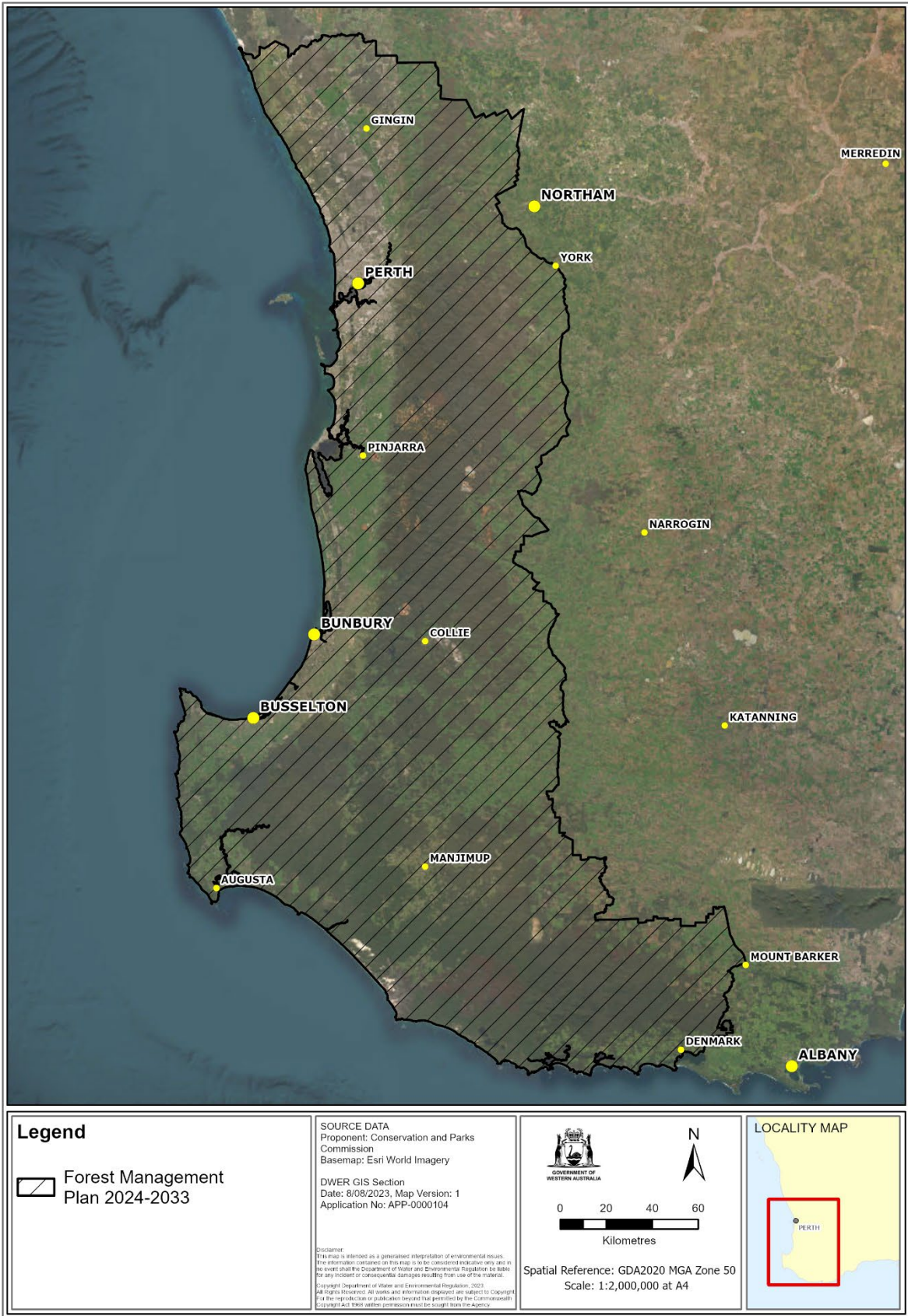
Acronym or abbreviation	Definition or term
Annual ecological thinning plan	Plans prepared ahead of implementation of the annual ecological thinning program that depict the candidate areas and the activities proposed to be undertaken in those areas.
Biological diversity	The variability among living organisms and the ecosystems of which those organisms are a part and includes: a) diversity within native species and between native species; b) diversity of ecosystems; c) diversity of other biodiversity components.
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <i>Environmental Protection Act 1986</i> , or the CEO's delegate.
Confirmed	In relation to a plan required to be made and submitted to the CEO , means, at the relevant time, the plan that the CEO confirmed, by notice in writing, meets the requirements of the relevant condition. In relation to a plan required to be implemented without the need to be first submitted to the CEO , means that plan until it is revised, and then means, at the relevant time, the plan that the CEO confirmed, by notice in writing, meets the requirements of the relevant condition.
Contingency measures	Planned actions for implementation if it is identified that an environmental outcome or environmental objective are not likely to be met. Contingency measures include changes to operations or reductions in disturbance or adverse impacts to reduce impacts and must be decisive actions that will quickly ensure that the environmental outcome and/or objective can be met.
Disturbance avoidance zone	Areas within State forest and timber reserves where planned disturbance activities are to be avoided or minimised and depicted in Figure 2. The term combines the various types of informal reserves described in Appendix 1c Disturbance Avoidance Zones in State forest and timber reserves to the <i>Draft Proposed Forest Management Plan 2024-2033, May 2023</i> .
Ecological integrity	The composition, structure, function and processes of ecosystems, and the natural range of variation of these elements.
Ecological thinning	An active forest management tool that involves the selective removal of individual trees to improve or maintain ecological value and reduce current and future moisture stress of a given area.

Environmental value	A beneficial use, or ecosystem health condition.
Forest ecosystems	An indigenous ecosystem with an overstory of trees of more than 20 per cent crown cover, incorporating all living and non-living components of the area.
Forest health monitoring program	A monitoring program designed and implemented to achieve the aims and objectives stated in section 6.2.2 of the <i>Draft Proposed Forest Management Plan 2024–2033, May 2023</i> and to meet the requirements of condition C1.
ha	Hectare
Independent review/ Independently reviewed	<p>A review undertaken by a person that can demonstrate their relevant qualifications, knowledge, expertise, and working experience in ecological sciences.</p> <p>The reviewer should act independently using their balanced professional judgement of proposal-specific data and information, consistent with national and international policies, guidelines, and best available information.</p> <p>The reviewer should be able to demonstrate their independence to avoid any actual, potential, or perceived conflicts of interest that may arise.</p>
Indicative disturbance avoidance zones	Areas likely to be identified as disturbance avoidance zones and depicted in Figure 2.
Prescribed burning	Prescribed burning is the process of planning and applying fire to a predetermined area under specific environmental conditions to achieve a desired outcome. Prescribed burns follow a ‘prescription’ with a number of conditions that need to be met.
Previously proposed additions	Additions to the conservation estate proposed in forest management plans previous to the <i>Draft Proposed Forest Management Plan 2024–2033, May 2023</i>
Proposed conservation reserves	Areas proposed for conservation in the Forest Management Plan 2014-2023 and from subsequent land acquisitions and area management plans consistent with Map 13 of the <i>Draft Proposed Forest Management Plan 2024–2033, May 2023</i>
Reserve proposals	Proposed and indicative additions to the conservation estate consistent with Map 13 and Appendix 7 of the <i>Draft Proposed Forest Management Plan 2024–2033, May 2023</i>

Figures (attached)

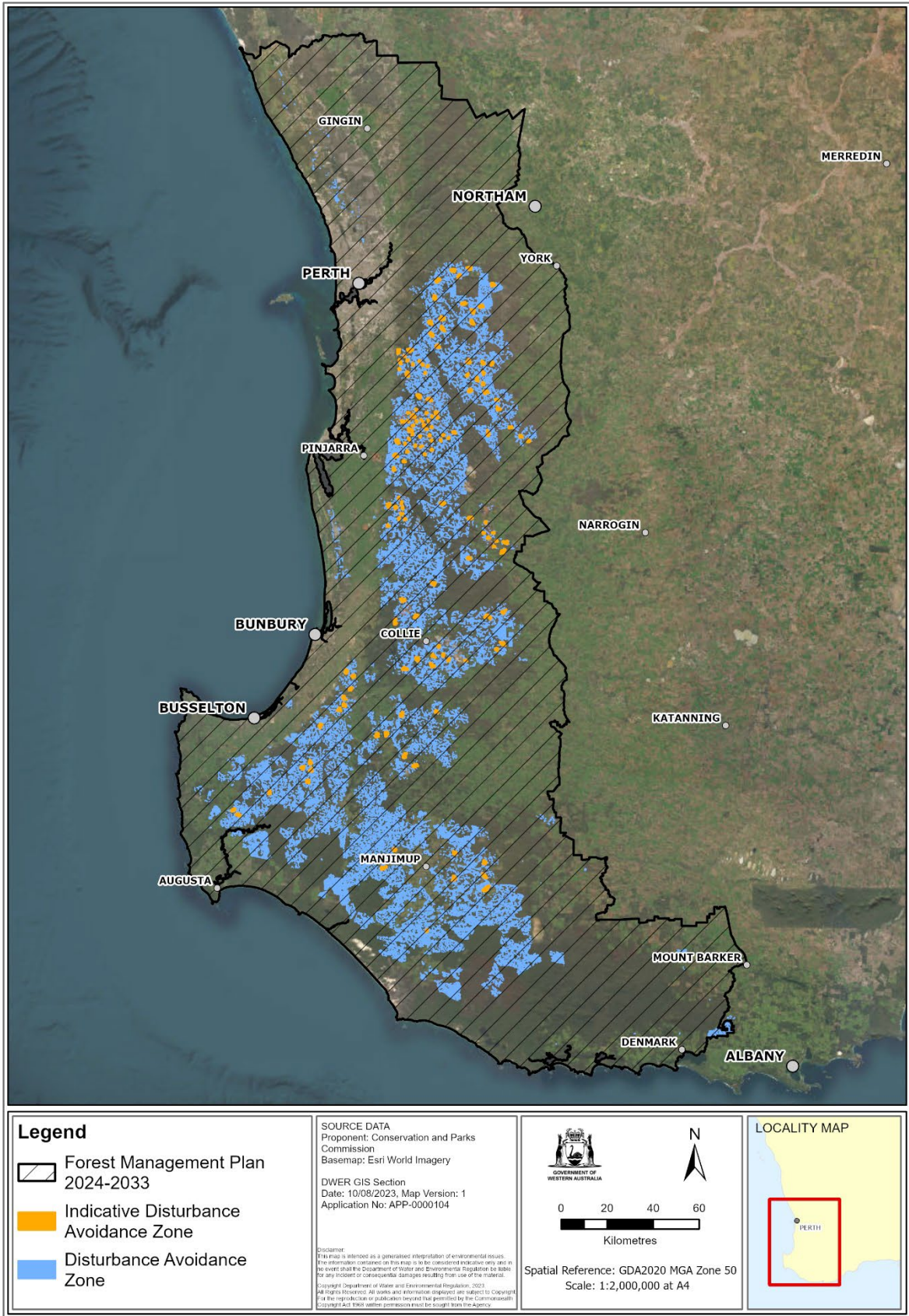
Figure 1 Proposal area (This map is a representation of the co-ordinates referenced in Schedule 1)

Figure 2 Indicative Disturbance Avoidance Zones



Path: S:\projects\EA\36\2022_APP0000104_ForestManagementPlan2024_2033\1_ReferredAcc25_Proj\2022_APP0000104_ForestManagementPlan2024_2033.aprx

Figure 1 - Proposal area



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Schedule 1

All co-ordinates are in metres, listed in Map Grid of Australia Zone 50 (MGA Zone 50), datum of Geocentric Datum of Australia 2020 (GDA2020).

Spatial data depicting the figures are held by the Department of Water and Environmental regulation. Record no. DWER-801164602-9255.

Appendix B: Decision-making authorities

Table B1: Identified relevant decision-making authorities for the proposal

Decision-Making Authority	Legislation (and approval)
1. Minister for Environment	<i>Conservation and Land Management Act 1984</i> - s. 60 Management plan approval

Appendix C: Environmental Protection Act principles

Table C1: Consideration of principles of the *Environmental Protection Act 1986*

EP Act principle	Consideration
<p>1. The precautionary principle</p> <p><i>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In application of this precautionary principle, decisions should be guided by –</i></p> <p><i>(a) careful evaluation to avoid, where practicable, serious, or irreversible damage to the environment; and</i></p> <p><i>(b) an assessment of the risk-weighted consequences of various options.</i></p>	<p>The EPA has considered the precautionary principle in its assessment, and has had particular regard to this principle in its assessment of terrestrial fauna, flora and vegetation and inland waters. The assessment of these impacts is provided in this report.</p> <p>The proposed FMP area is a subset of the broader South West Australian Floristic Region, globally recognised for its rich diversity of plants and animals. There are a wide range of existing and new threats to the area, outlined in the assessment above.</p> <p>The EPA recognises that some of the proposed management activities within the proposed FMP have the potential to negatively impact forest health. In particular, the EPA notes that the proposal may present a risk of serious harm to the environment if management activities are administered at a scale that inhibits species recovery and/or persistence.</p> <p>The proponent has suggested mitigation measures to avoid serious or irreversible damage to the environment by:</p> <ul style="list-style-type: none"> • assessing proposed disturbance activities on CALM Act lands through DBCA’s DAS • incorporating latest climate science in operational planning • undertaking research into fire behaviour and ecology to inform management effectiveness and forest health • monitoring biodiversity and impacts to forest health and biodiversity • reviewing guidelines, procedures, and training programs to address disturbance of environmental values • engaging with stakeholders and community groups as part of implementing the plan. <p>The EPA also recommends conditions, including requirements for achievement of environmental outcomes, and management to ensure the plan area is maintained and improved to have adequate ecological integrity and self-sustaining characteristics to provide a buffer for likely impacts from climate change and cumulative impacts from other past, present, and future activities. The EPA also supports the proposed FMP’s periodic assessments through the life of the proposal, a cautious adaptive</p>

EP Act principle	Consideration
	<p>management approach to ecological thinning, and recommended an independent review of the contested issues with prescribed burning.</p> <p>The EPA has not postponed considering measures to prevent environmental degradation as part of its assessment.</p> <p>In considering the precautionary principle, the EPA has concluded that the outcomes of the proposal are unlikely to be inconsistent with the principle.</p>
<p>2. The principle of intergenerational equity</p> <p><i>The present generation should ensure that the health, diversity, and productivity of the environment is maintained and enhanced for the benefit of future generations.</i></p>	<p>The EPA has considered the principle of intergenerational equity in its assessment, and has had particular regard to this principle in its assessment of flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality.</p> <p>The EPA recognises that whilst some of the proposed management activities have the potential to negatively impact forest health, multiple management activities seek to facilitate conservation of biodiversity and ensure forest health and productivity are at least maintained, if not enhanced. The EPA notes that the proposal has been developed with consideration to the Montreal process criteria (MPWG 2015) and the Western Australian RFA. The maintenance and conservation of forest ecological processes and diversity are central to both frameworks.</p> <p>In considering the proposed management targets and the EPA's recommended conditions, the EPA has concluded that the proposal would not unreasonably reduce future generations' options in terms of the health, diversity, and productivity of the environment.</p>
<p>3. The principles of the conservation of biological diversity and ecological integrity</p> <p><i>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</i></p>	<p>The proposed FMP area is a subset of the broader South West Australian Floristic Region, globally recognised for its rich diversity of plants and animals.</p> <p>The EPA has considered the principle of conservation of biological diversity and ecological integrity in its assessment, and has had particular regard to this principle in its assessment of flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality.</p> <p>The EPA notes that the delivery of conservation benefits to protect and support forest biodiversity and ecosystem resilience is a central consideration of the proposal. Notwithstanding, implementation of some management activities may impact biological diversity and ecological integrity.</p> <p>The EPA has considered to what extent potential impacts from management activities can be ameliorated, to ensure consistency with this principle. The EPA has concluded</p>

EP Act principle	Consideration
	that the proposed FMP management targets, in addition to the EPA's recommended conditions and other advice, will promote the conservation of biological diversity and ecological integrity.
<p>4. Principles relating to improved valuation, pricing, and incentive mechanisms</p> <ul style="list-style-type: none"> ▪ <i>Environmental factors should be included in the valuation of assets and services.</i> ▪ <i>The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance, or abatement.</i> ▪ <i>The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.</i> ▪ <i>Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.</i> 	<p>In considering this principle, the EPA notes that the agencies responsible for implementing the plan and the management activities contained therein will bear the costs of doing so. The EPA has had particular regard to this principle in considering flora and vegetation, terrestrial fauna, inland waters, and terrestrial environmental quality.</p> <p>The proposal provides specific targets for the management of forest-based resources and plantations. The proposed targets include the development of a memorandum of understanding between DBCA and the Forest Products Commission to address management roles and funding arrangements around plantation areas, and regulation of the supply of forest produce through licensing frameworks and strategic guidance.</p> <p>The EPA notes that multiple stakeholders use the South West forests and may have a role in management of the forests in some form. Management activities on CALM Act lands may be undertaken by a combination of government agencies, contracted parties, special interest groups and industries, and not-for-profit and volunteer organisations. However, the EPA notes that in accordance with the provisions of the CALM Act, the Commission will ultimately have responsibility for the care, control, and management of CALM Act lands.</p>
<p>5. The principle of waste minimisation</p> <p><i>All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.</i></p>	<p>The EPA has considered the principle of waste minimisation in its assessment. In considering this principle, the EPA notes that the implementation of proposed thinning trials and guidelines will ensure that thinning is science-based and adaptive, thereby providing the greatest opportunity to limit wasteful removal of vegetation. The EPA also notes that the proponent suggests there may be opportunities to minimise potential forest product waste from ecological thinning operations through the salvage and on-sale of by-products.</p> <p>The EPA also notes that proposed management targets including the monitoring and maintenance of recreation sites, and increased compliance capacity for unauthorised activities, may assist with minimising the discharge of waste to the environment.</p>

Appendix D: Other environmental factors

Table D1: Evaluation of other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
People			
Social Surroundings	<p>Proposed management activities may impact:</p> <ul style="list-style-type: none"> • visual amenity • Aboriginal cultural heritage and sites of heritage significance • recreational use of the South West forests • economic and commercial use of the South West forests, including timber harvesting, primary production, and tourism operations. <p>Proposed management activities may also generate dust, odour, and noise emissions that may impact nearby sensitive receptors.</p>	<p><u>Public comments</u></p> <ul style="list-style-type: none"> • potential impacts to forest visual amenity, particularly from thinning and prescribed burning programs • impacts to the timber industry as a result of the end to commercial harvesting in native forests • unclear how compliance will be undertaken to regulate unauthorised access and activities within the forests. 	<p>Social Surroundings was identified as a preliminary key environmental factor when the EPA decided to assess the proposal. However, having regard to:</p> <ul style="list-style-type: none"> • the proposed co-benefit of the thinning program in reducing uniform forest structure and density to improve visual amenity • the proposed management partnerships with local Traditional Owners to implement the plan • the proposed development of recreational guidelines for use of the forests • the proposed management and maintenance of recreational sites within the forests, and monitoring of visitor satisfaction • provisions for engagement with, and participation of, stakeholder groups and community members in the implementation of the plan • the proposed regulation of forest produce, including apiary operations and firewood collection, through licensing frameworks • the likely intermittent and short-term impacts to sensitive receptors and recreational users of the forests associated with implementation of management activities <p>the EPA considers it is unlikely that the proposal would have a significant impact on Social Surroundings. Accordingly, the EPA did not consider Social Surroundings to be a key environmental factor at the conclusion of its assessment.</p>

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Land			
Landforms	Proposed management activities may alter the condition and integrity of long-lived, culturally significant forest landscapes within a global biodiversity hotspot.	<u>Public comments</u> <ul style="list-style-type: none"> potential impacts to the internationally significant tingle forests and ecologically important peat swamps associated with prescribed burning activities internationally significant northern jarrah forests are vulnerable to impacts from mining, and should be identified for reservation under this proposal. 	Landforms was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: <ul style="list-style-type: none"> the proposed assessment and management of potential disturbances to CALM Act lands through the DAS the proposed reservation of areas which will be in accordance with the CAR principles and with consultation from traditional owners and stakeholders the proposed adoption of a DAZ network constituting areas of significant environmental value for retention and protection the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i> (EPA 2023) the EPA considers it is unlikely that the proposal would have a significant impact on Landforms. Accordingly, the EPA did not consider Landforms to be a key environmental factor at the conclusion of its assessment.
Air			
Air quality	Bushfire and prescribed burning events are potentially significant air quality events that have previously caused exceedances in the National Environment Protection (Ambient Air Quality) Measure standards for particulates of 2.5 and 10 microns (DWER 2023a). Exposure to airborne smoke particulates from	<u>Public comments</u> <ul style="list-style-type: none"> potential impacts to human health, life, and property from smoke emissions associated with prescribed burning activities potential impacts to productive industries, tourism, and recreation from smoke emissions. 	Air Quality was not identified as a preliminary key environmental factor when the EPA decided to assess the proposal. Having regard to: <ul style="list-style-type: none"> DBCA's smoke alert system, which is implemented when emissions from prescribed burning or bushfires on CALM Act lands may affect people or restrict visibility for motorists the proposed actions in the <i>Initiative Action Plan 8 – Actions for Smoke Management</i> (DWER 2023b) the significance considerations in the <i>Statement of Environmental Principles, Factors and Objectives</i> (EPA 2023)

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
	prescribed burning may impact human health, safety, and social amenity.		<p>the EPA did not consider Air Quality to be a key environmental factor at the conclusion of its assessment.</p> <p>The EPA has recommended an independent scientific review into prescribed burning at section 5.2 of this report. The outcomes of such a review should identify any new science in this area and potential further mitigation and management of emissions from prescribed burning, and associated impacts to air quality.</p>

Appendix E: Relevant policy, guidance, and procedures

The EPA had particular regard to the policies, guidelines and procedures listed below in the assessment of the proposal.

- *Environmental factor guideline – Flora and Vegetation* (EPA 2016)
- *Environmental factor guideline – Greenhouse Gas Emissions* (EPA 2020)
- *Environmental factor guideline – Inland Waters* (EPA 2018)
- *Environmental factor guideline – Terrestrial Environmental Quality* (EPA 2016)
- *Environmental factor guideline – Terrestrial Fauna* (EPA 2016)
- *Environmental impact assessment (Part IV Divisions 1 and 2) procedures manual* (EPA 2021)
- *Environmental impact assessment (Part IV Divisions 1 and 2) administrative procedures 2021* (State of Western Australia 2021)
- *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2023)

Appendix F: List of submitters

7-day comment on referral

Organisations

- Bee Happy Apiaries
- Bee Industry Council of WA
- Bees Neez Apiaries
- Birdlife Australia
- Bouvard Coast Care
- Bridgetown-Greenbushes Friends of the Forest
- Bushfire Front Inc.
- Conservation Council of Western Australia
- Denmark Environment Centre
- Doctors for the Environment Australia
- Dunsborough Busselton Environment Centre
- Fire and Biodiversity Western Australia
- Friends of Erindale Road Bushland
- Friends of Mosman Park Bushland
- Gondwana Link
- Great Walk Network
- Hike West Inc.
- Hiking Club of Western Australia Inc.
- Hon. Brad Pettitt, Member Legislative Council – South Metropolitan Region, Australian Greens Party
- Julimar Forest and Conservation Alliance
- Margaret River Regional Environment Centre
- Melon Hill Bushland Group
- Merri Bee Organic Farmacy
- Northern Agricultural Catchment Council
- Peel Harvey Catchment Council
- Pemberton Honey Company
- Perth Bushwalkers Club Inc.
- Promote Preston
- Sawyer's Apiaries

- South Coast Natural Resource Management Group
- South West Catchment Council
- South West Forests Defence Foundation Inc.
- The Leeuwin Group
- Toodyay Historical Society
- Trillion Trees Australia
- Urban Bushland Council
- Western Australian Forest Alliance
- Wildflower Society of Western Australia

Government agencies

- Shire of Dardanup
- Shire of Mundaring

Individuals

In addition to submissions from the organisations and government agencies above, 613 submissions were received from individuals.

Targeted consultation

Organisations

- Bee Industry Council of Western Australia
- Bushfire Front Inc.
- Department of Biodiversity, Conservation, and Attractions
- Fire and Biodiversity Western Australia
- Forestry Australia
- Forest Industries Federation Western Australia
- The Leeuwin Group
- South West Forests Defence
- South West Natural Resource Management (formerly South West Catchment Council)
- Urban Bushland Council
- Western Australian Forest Alliance
- Wildflower Society of Western Australia

Appendix G: Assessment timeline

Date	Progress stages	Time (weeks)
26 May 2023	EPA decided to assess – level of assessment set	
12 July 2023	Targeted consultation completed	5
17 August 2023	EPA completed its assessment	5
30 August 2023	EPA provided report to the Minister for Environment	2
4 September 2023	EPA report published	3 days
25 September 2023	Appeals period closed	3

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the EPA decides to assess the proposal and records the level of assessment.

In this case, the EPA met its timeline objective to complete its assessment and provide a report to the Minister.

Appendix H: Proponent’s Proposal Content Document

Proposal element	Location	Maximum extent or range
<i>Physical elements</i>		
Geographic area covered by the plan (the planning area).	Figure 1 – proposed Forest Management Plan area.	Approximately 2,833,300 ha within the DBCA administrative regions of Swan, Warren, and South West, excluding marine waters, and the lands known as the ‘Redmond’ forest block in the DBCA South Coast region.
Lands vested in the Conservation and Parks Commission to which the plan applies.	Figure 2 – existing reservation status. Figure 3 – proposed changes in reservation status for increased protection.	Approximately 2,522,000 ha, comprising: <ul style="list-style-type: none"> • Nature reserves, national parks, conservation parks and other land referred to in section 5(1)(g) and (h) of the CALM Act that has a conservation purpose. • Indigenous State forest and timber reserves, including State forest classified as a forest conservation area through section 62(1) of the CALM Act. • State forest and timber reserves planted with exotic species. The application of the plan to these areas is limited to specific proposed management activities.
<i>Operational elements</i>		
Reserve creation	Figure 3	At least 400,000 additional hectares of native forests will be preserved as a result of the decision to cease large-scale commercial harvesting. Over the term of the proposed plan, existing proposals to create national parks, conservation parks and nature reserves that have yet to be completed from previous FMPs will be prioritised. Additional conservation reserves will also be created following consultation with traditional owners and stakeholders to ensure enhanced protection of high conservation value areas.
Ecological thinning	State forest and timber reserves, or other areas as approved by the Minister for Environment, throughout the planning area. Figure 3. Figure 4 – proposed forest	Ecological thinning is an evidence-based, active forest management tool that involves the selective removal of individual trees to improve or maintain ecological values and reduce the current and future moisture stress of a given area. The primary objective of ecological thinning is to promote forest health and climate resilience in order to conserve biodiversity. Up to 8,000 ha annually, or around 0.4 percent of the total area of forested lands vested in the

Proposal element	Location	Maximum extent or range
	enhancement areas and disturbance avoidance zones.	<p>Commission within the plan area, within which a variable proportion of trees will be removed.</p> <p>Ecological thinning will be carried out in areas of densely stocked regrowth forests and other vulnerable landscapes within State forest and timber reserves.</p> <p>Areas within existing and proposed formal reserves, and DAZs, will generally be excluded from ecological thinning activities, although limited thinning activities may be considered on a case-by-case basis where there is a high likelihood that thinning would enhance conservation outcomes, such as the maintenance of habitat critical to threatened species or groundwater dependent ecosystems, subject to approval by the Minister for Environment.</p>
Prescribed fire	All land categories throughout the planning area.	<p>Prescribed fire within the plan area takes place within whole-of-Government policy settings to manage fuel loads across the landscape with the objective of sustaining ecological values and reducing the risk of unplanned catastrophic bushfires impacting the community and environment. It is underpinned by legislation and supported by ongoing research and over 60 years of operational evidence.</p> <p>Prescribed fire programs aim to have 45% of forested areas managed by DBCA having a fuel age of less than six years. This equates to treating approximately eight percent of forested areas managed by DBCA annually (approximately 200,000 ha).</p> <p>The FMP will also give effect to the WA Climate Policy action allocated to DBCA to undertake prescribe burning to ‘.... reduce the frequency and size of bushfires in forests in South West Western Australia, meet prescribed burning targets and protect the community and the environment from the impacts of bushfires’.</p>
Other management and regulated activities	All land categories throughout the planning area.	<p>Management and other regulated activities may be implemented or authorised as detailed in Part C of the FMP.</p> <p>Management and other regulated activities may relate to:</p> <ul style="list-style-type: none"> • Permitted disturbance activities • Weeds • Pest animals • Diseases • Unauthorised activities • Nature-based tourism and recreation

Proposal element	Location	Maximum extent or range
		<ul style="list-style-type: none"> Forest-based resources.
<i>Timing elements</i>		
Proposal time	Maximum project life	The plan will remain in force until a new plan is approved (section 55(2) of the CALM Act).

Units and abbreviationsCALM Act – *Conservation and Land Management Act 1984*

DBCA – Department of Biodiversity, Conservation, and Attractions

FMP – Forest Management Plan

ha – hectare

WA – Western Australia

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