



A report on progress with the implementation
of the *Regional Forest Agreement for the
South-West Forest Region of Western Australia*

Period 3: 2009 to 2014
October 2016



**A report on progress with the implementation
of the *Regional Forest Agreement for the
South-West Forest Region of Western Australia***

Period 3: 2009 to 2014

October 2016

This report has been coordinated by the Western Australian Government Department of Parks and Wildlife and the Australian Government Department of Agriculture and Water Resources

October 2016

This work is copyright. You may download, display, print and reproduce this material in unaltered form (retaining this notice) for your personal, non-commercial use or use within your organisation. Apart from any use as permitted under the *Copyright Act 1968*, all other rights are reserved.

Published by:

Department of Parks and Wildlife on behalf of the State of Western Australia and Commonwealth of Australia

Department of Parks and Wildlife
Locked Bag 104
Bentley Delivery Centre
Western Australia 6983

Phone: (08) 9219 9000
Email: forest.info@dpaw.wa.gov.au
Website address: www.dpaw.wa.gov.au

Requests and enquiries concerning reproduction and rights should be addressed to the:

Project officer, Forest and Ecosystem Management
Western Australian Regional Forest Agreement Progress Report
Department of Parks and Wildlife
Locked Bag 104
Bentley Delivery Centre
Western Australia 6983

Key contributors:

Department of Parks and Wildlife (Western Australian Government)
Forest Products Commission (Western Australian Government)
Department of Agriculture and Water Resources (Australian Government)
Department of the Environment and Energy (Australian Government)

The recommended reference for this publication is:

Department of Parks and Wildlife (WA), Department of Agriculture and Water Resources (C'wlth), *A report on progress with the implementation of the Regional Forest Agreement for the South-West Forest Region of Western Australia Period 3: 2009 to 2014*, Department of Parks and Wildlife, Perth.

Disclaimer

The Western Australian Government acting through the Department of Parks and Wildlife and the Australian Government acting through the Department of Agriculture and Water Resources has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Parks and Wildlife and the Department of Agriculture and Water Resources, its employees and advisers disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data in this publication to the maximum extent permitted by law.

Cover

Top picture:

Marri seed. Photo – Danielle Wiseman/ Parks and Wildlife

Below left picture:

Primary habitat tree. Photo – Danielle Wiseman/ Parks and Wildlife

Below right picture:

Regrowth karri. Photo – Ian Ruscoe/ Agriculture and Water Resources

1. Table of contents

| | |
|---|------------|
| 1. Table of contents..... | 2 |
| List of tables and maps..... | 4 |
| 2. Abbreviations and acronyms | 5 |
| 3. Executive summary | 7 |
| 4. Introduction..... | 14 |
| 4.1 Background..... | 14 |
| 4.2 Public consultation | 15 |
| 4.3 Overview of the combined first and second five-yearly (1999 to 2009) performance report | 17 |
| 4.4 Creation of the Department of Parks and Wildlife | 17 |
| 4.5 Forest Management Plan 2014–2023 | 17 |
| 4.6 Engaging with traditional owners..... | 18 |
| 4.7 Threatened flora and fauna legislation | 19 |
| 4.8 Industry development | 19 |
| 4.9 Structure of the third five-year (Period 3) progress report..... | 19 |
| 5. Progress against milestones and commitments..... | 21 |
| 5.1 Part 1 Principles of the agreement..... | 21 |
| 5.2 Part 2 Functioning of the agreement..... | 22 |
| 5.3 Ecologically sustainable forest management | 29 |
| 5.4 Threatened flora and fauna | 42 |
| 5.5 The CAR reserve system | 50 |
| 5.6 Industry development | 54 |
| 5.7 Indigenous heritage | 61 |
| 5.8 Other forest uses..... | 62 |
| 5.9 Competition principles | 64 |
| 5.10 Research..... | 64 |
| 5.11 Data use and access | 66 |
| 5.12 Legally binding rights and obligations | 67 |
| 6. Report on implementation of recommendations from the independent review of the combined first and second (1999 to 2009) five-yearly performance reporting | 69 |
| 7. Results of monitoring sustainability indicators | 78 |
| Appendix 1 Comprehensive, Adequate and Representative reserve system | 79 |
| 1. Formal reserves | 83 |
| 2. CAR informal reserves | 84 |
| Appendix 2 Public reporting and consultative mechanisms | 91 |
| Appendix 3 Improvement to Western Australia’s forest management systems on public land | 93 |
| Appendix 4 Protection and management of forests on private land..... | 107 |
| 1. Clearing of native vegetation on private land | 107 |
| 2. Timber Harvesting on Private Land | 108 |
| 3. Remnant Vegetation Protection Scheme | 109 |
| 4. Farm Forestry Advisory Service | 109 |
| 5. Land for Wildlife Scheme..... | 110 |
| Strategy for Improving Ecologically Sustainable Forest Management on Private Land | 110 |
| Principles for the Protection of CAR Values on Private Land | 111 |
| Appendix 5 Threatened flora and fauna | 113 |

| | |
|--|------------|
| A: Threatened fauna | 113 |
| B: Threatened flora | 117 |
| Appendix 6 Aboriginal heritage and consultation | 123 |
| Appendix 7 Priority areas of research..... | 126 |
| Appendix 8 External reviews undertaken during Period 3 including for the preparation of the <i>Forest Management Plan 2014–2023</i> | 129 |
| Appendix 9 Forest employment and industries development strategy | 131 |
| Appendix 10 Forest management in Western Australia | 139 |
| Introduction | 139 |
| International and national policy setting | 139 |
| Regulatory framework | 139 |
| Attachment 1: State legislation relevant to the conduct of forest practices in WA | 149 |
| Attachment 2: Hierarchy of controlling documents | 153 |
| Attachment 3: Key controlling documents for forest management agencies | 154 |
| Appendix 11 Reporting mechanisms for sustainability indicators | 158 |
| Appendix 12 Adoption of research into sustainable forest management practices..... | 167 |
| References | 174 |

List of tables and maps

| | |
|---|-----|
| Table 1: Summary of progress with implementing WA RFA milestones | 9 |
| Table 2: Index of RFA milestones and commitments reported in the third five-yearly review | 16 |
| Table 3: Criteria used in the forest management plans | 25 |
| Table 4: Area of native forest harvested during 2009 to 2013 to a range of silvicultural or management objectives | 32 |
| Table 5: Jarrah first and second grade sawlog removals during 2009 to 2013 relative to the 131,000m ³ average annual sustained yield (FMP 2004–2013)..... | 32 |
| Table 6: Jarrah first and second grade sawlog removals during 2014 relative to the 132,000m ³ average annual sustained yield (FMP 2014–2023)..... | 33 |
| Table 7: Karri first and second grade sawlog removals during 2009 to 2013 relative to the 54,000m ³ average annual sustained yield (FMP 2004–2013)..... | 33 |
| Table 8: Karri first and second grade sawlog removals during 2014 relative to the 59,000m ³ average annual sustained yield (FMP 2014–2023)..... | 34 |
| Table 9: Jarrah other bole volume annual removals during 2009 to 2014 relative to the FMP specified limits | 34 |
| Table 10: Marri bole volume annual removals during 2009 to 2014 relative to the FMP specified limits | 35 |
| Table 11: Karri other bole volume annual removals during 2009 to 2014 relative to the FMP specified limit | 35 |
| Table 12: Reservation levels of forest ecosystems within existing and proposed reserves within the WA RFA region as at 2014..... | 81 |
| Table 13: Old-growth forest within proposed and existing reserves within the WA RFA region as at 2014 | 82 |
| Table 14: Changes to the CAR informal reserves on Parks and Wildlife-managed land (hectares) | 86 |
| Table 15: Reservation levels of ecological vegetation systems as at 2014 | 86 |
| Table 16: Summary of recovery plan status for threatened fauna as at 2014..... | 113 |
| Table 17: Summary of recovery plan status for threatened flora as at 2014 | 117 |
| Table 18: Planning and approvals process for native forest timber harvesting | 143 |
| Table 19: Key steps involved in prescribed burn program planning | 147 |
| Table 20: The national Montréal Process indicators with corresponding WA indicators and other supporting documents or reporting process..... | 158 |
| Map 1: Area covered by the <i>Regional Forest Agreement for South-West Forest Region of Western Australia</i> and <i>Forest Management Plan 2014–2023</i> | 13 |
| Map 2: <i>Regional Forest Agreement for South-West Forest Region of Western Australia</i> Comprehensive, Adequate and Representative (CAR) reserve system as at December 2014 | 80 |

List of figures

| | |
|--|-----|
| Figure 1: Forest Growing and Management Package enrolments, 2010 to 2015 | 102 |
| Figure 2: Overview of primary legislative framework for forest management in WA..... | 140 |
| Figure 3: Examples of mechanisms with the WA FMS for the protection of nationally threatened species and ecological communities..... | 141 |
| Figure 4: Governance framework for the forest management plan | 142 |
| Figure 5: Broad outline of the prescribed burning program planning approach..... | 146 |

2. Abbreviations and acronyms

| | |
|----------------------|---|
| 3-PG | Physiological Principles Predicting Growth |
| ABARES | Australian Bureau of Agricultural and Resource Economics and Sciences |
| ABS | Australian Bureau of Statistics |
| AFORA | Australian Forest Operations Research Alliance |
| AFS | Australian Forestry Standard (AS 4708-2013) |
| AHC Act | <i>Australian Heritage Council Act 2003 (C'wlth)</i> |
| ALPACA | Australian Logging Productivity and Cost Assessment Tool |
| BAM Act | <i>Biosecurity and Agricultural Management Act 2007 (WA)</i> |
| BDTA | Bindoon Defence Training Area |
| BSOG | Biosecurity Senior Officers Group |
| CALM | Department of Conservation and Land Management |
| CALM Act | <i>Conservation and Land Management Act 1984 (WA)</i> |
| CAR | Comprehensive, Adequate and Representative (reserve system) |
| CAWS Act | <i>Country Areas Water Supply Act 1947 (WA)</i> |
| COAG | Council of Australian Governments |
| CRA | Comprehensive Regional Assessment |
| CRC | Cooperative Research Centre |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| CTT | CALM Timber Technology |
| C'wlth | Commonwealth (of Australia) |
| DAFWA | Department of Agriculture and Food (WA) |
| DEC | Department of Environment and Conservation |
| DEFL | Parks and Wildlife's Threatened Flora Database |
| DoEE | Department of the Environment and Energy (C'wlth) |
| DMP | Department of Mines and Petroleum (WA) |
| DSD | Department of State Development (WA) |
| EC Act | <i>Export Control Act 1982 (C'wlth)</i> |
| EMP | Environmental Management Plan |
| EMS | Environmental Management System (ISO 14001:2004) |
| ESFM | Ecologically Sustainable Forest Management |
| EPA | Environmental Protection Authority (WA) |
| EP Act | <i>Environmental Protection Act 1986 (WA)</i> |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999 (C'wlth)</i> |
| ESP Act | <i>Endangered Species Protection Act 1992 (C'wlth)</i> |
| FDIS | Fauna Distribution Information System |
| FHZ | Fauna Habitat Zone |
| FIAC | Forest Industry Advisory Council |
| FMP | Forest management plan |
| FMP 1994–2003 | <i>Forest Management Plan 1994–2003</i> |
| FMP 2004–2013 | <i>Forest Management Plan 2004–2013</i> |
| FMP 2014–2023 | <i>Forest Management Plan 2014–2023</i> |
| FMIS | Forest Management Information System |
| FMS | Forest Management System |
| FAO | Food and Agriculture Organization of the United Nations |
| FP Act | <i>Forest Products Act 2000 (WA)</i> |
| FPC | Forest Products Commission |
| FSC | Forest Stewardship Council |
| FWPA | Forest and Wood Products Australia |
| GIS | Geographic Information System |
| IFMS | Integrated Forest Management System |
| ISG | Investment Security Guarantees |

| | |
|------------------|--|
| ISO 14001 | ISO 14001:2004 Environmental management systems - Requirements with guidance for use |
| ISO 31000 | ISO 31000:2009 Risk management – Principles and guidelines |
| IUCN | International Union for Conservation of Nature |
| JANIS | Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee |
| KPI(s) | Key Performance Indicator(s) |
| LiDAR | Light Detection and Ranging |
| LMA | Low Marri Abundance Area |
| LMU | Landscape Management Unit |
| LVL | Laminated Veneer Lumber |
| MATES | Mentored Aboriginal Training and Employment Scheme |
| MOU | Memorandum of Understanding |
| n.d. | No date |
| NES | National Environmental Significance |
| NFI | National Forest Inventory |
| NFPS | National Forest Policy Statement |
| NRM | Natural Resource Management |
| OAG | Office of the Auditor General |
| OBV | Other bole volume |
| OEPA | Office of the Environment Protection Authority |
| PECs | Priority Ecological Communities |
| POOGF | Protecting our old-growth forests |
| R&D | Research and Development |
| RAC | Research Advisory Committee |
| RFA | Regional Forest Agreement |
| RFA Act | <i>Regional Forest Agreement Act 2002 (C'wlth)</i> |
| RFMP | Regional Fire Management Plan |
| RNE | Register of the National Estate |
| RWG | Research Working Group |
| SAA | State Agreement Act |
| SFM | Sustainable Forest Management |
| SILREC | Silvicultural Recording System |
| SNFH | Subcommittee on National Forest Health |
| SOFR | Australia's State of the Forests Report |
| STCRC | Sustainable Tourism Cooperative Research Centre |
| SWALSC | South West Aboriginal Land and Sea Council |
| TEC | Threatened Ecological Communities |
| WA | Western Australia |
| WA FISAP | Western Australian Forest Industry Structural Adjustment Package |
| WA RFA | <i>Regional Forest Agreement for the South-West Forest Region of Western Australia</i> |
| WC Act | <i>Wildlife Conservation Act 1950 (WA)</i> |
| WINs | Work Improvement Notices |

3. Executive summary

The State of Western Australia and the Commonwealth of Australia (the Parties) signed the *Regional Forest Agreement for the South-West Forest Region of Western Australia* (WA RFA) on 4 May 1999.

The WA RFA established a 20-year framework to manage the use of Western Australia's (WA) south-west forests to implement effective conservation, forest management and forest industry practices. The purpose of the WA RFA was to:

- identify a comprehensive, adequate and representative (CAR) reserve system and provide for conserving those areas
- provide for ecologically sustainable forest management and use of forests
- provide long-term stability of forests and forest-based industries.

The Parties agreed to a series of milestones, commitments and obligations to assist with monitoring and reporting on progress to implement the WA RFA.

This report constitutes the third five-yearly review of progress (2009 to 2014) by Parties on implementing the milestones, commitment and obligations of the WA RFA.

The WA RFA provides a reporting framework including five-yearly progress with implementation reports (hereafter progress reports) due in 2004, 2009 and 2014. The combined first (Period 1) and second (Period 2) five-year (1999 to 2009) progress reporting process was completed in February 2015. The 1999 to 2009 progress report (July 2013) outlined policy changes that influenced the implementation of the WA RFA and outlined the significant progress made on meeting the requirements of the WA RFA clauses. Building on this progress the Parties continued further substantive work to implement the milestones, commitments and obligations of the WA RFA. The *Forest Management Plan 2004–2013* (FMP 2004–2013) was the key forest policy framework for most of the 2009 to 2014 reporting period (Period 3), while the following policy and legislative reforms also influenced the ongoing implementation of the WA RFA:

- The Commonwealth's *Illegal Logging Prohibition Act 2012*, which came into effect in November 2012, makes it a criminal offence to intentionally, knowingly or recklessly import or process illegally logged timber or timber products. From a national perspective, this act applies to the processors of domestically grown raw logs in order to provide consumers with greater certainty about the legality of timber products processed within Australia.
- In July 2013, the Department of Parks and Wildlife (Parks and Wildlife) was created as a new department dedicated to working with the community to conserve WA's unique wildlife and network of parks and other resources¹. Parks and Wildlife's strategic direction and focus over the next four years are outlined in the *Department of Parks and Wildlife 2014–17 Strategic Directions*².
- WA's national parks, conservation parks, nature reserves, State forests and timber reserves are vested in the Conservation Commission of Western Australia and managed by Parks and Wildlife under 10-year plans developed in consultation with the community. The process of developing forest management plans (FMPs) includes the preparation and release of a draft plan for public comment. The process to prepare the *Forest Management Plan 2014–2023* (FMP 2014–2023) began in early 2011 and the final plan was approved by the WA Environment Minister on 6 December 2013. The FMP 2014–2023 came into effect on 1 January 2014. Like the FMP 2004–2013, the plan considered

¹ Government of Western Australia (2013) mediastatements.wa.gov.au/Pages/Barnett/2013/06/Government-delivers-on-major-election-commitment-for-the-environment.aspx

² Department of Parks and Wildlife (2014) dpaw.wa.gov.au/about-us/strategic-directions

the wide range of forest values in the south-west forest region, taking into account environmental, economic and social issues³.

- Through 2012, significant changes were made to the *Conservation and Land Management Act 1984* (CALM Act) and *Wildlife Conservation Act 1950* (WC Act) recognising Aboriginal people's connection to lands and waters enabling Aboriginal people to become more involved in managing lands and waters and use of parks and reserves for customary activities⁴. This recognition was strengthened with amendments to the CALM Act passed in late 2015, which provide the framework to jointly vest conservation reserves including national parks with traditional owners.

The reduced area available for log harvesting and consequently the lower level of sustained yield of karri and jarrah sawlogs available from the WA RFA region was the result of a series of WA Government policy decisions made from 1999 to 2001 and outlined in the combined first and second five-year progress report; the FMP 2014–2023 seeks to maintain a stable log volume for the ten-year period from 2014 to 2023. This change in policy means that the volumes in clauses 75 and 76 are not achieved. The WA Environment Minister is able to approve access to an upper volume limit of jarrah sawlogs provided for in the FMP 2014–2023 should markets become available. Access to the upper volume limits will require new markets for non-sawlog lower grade material such as biomass markets or engineered wood products.

A summary of the achievements against milestones is provided in **Table 1**, while further information about achievements against these milestones and the progress against all commitments/obligations is outlined in the body of this report.

The various categories under *Status* in **Table 1** mean:

| | |
|---|---|
| Achieved | was undertaken and completed in Period 1, Period 2 and Period 3. Reporting will only be for Period 3, if required |
| Achieved in part | was partially undertaken or modified and progress will be reported on, if required |
| Achieved (outside proposed timeline) | was achieved in either Period 1, Period 2 or Period 3 but outside the original proposed timeline |
| Not achieved | was not started or was not achieved within the timeline, and will only be reported against, if required |
| No longer applicable | was overtaken by events and will only be reported against if required. |

³ Department of Parks and Wildlife (2013b) dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023 and dpaw.wa.gov.au/management/forests/managing-our-forests/166-information-sheet-forest-management-plan-2014-2023

⁴ Department of Parks and Wildlife (n.d.) dpaw.wa.gov.au/parks/aboriginal-involvement

Table 1: Summary of progress with implementing WA RFA milestones⁵

| Clause | Action | Milestone timeline | Status |
|--------------------------|---|--|--|
| 6 | The process for extending the Agreement for a further period will be agreed by the Parties as part of the 15-year review (clause 36). | 2014 | Achieved in part |
| 27 | The Parties agree to actively participate in the World Heritage assessment of the Australia-wide Eucalypt theme. | As required | Achieved |
| 34 | The Parties will provide each other with an annual report detailing their achievement of milestones for the first four years of the Agreement and then as they fall due and as part of the five-yearly reviews and report. | 2000 2001 2002 2003 2004 2009 2014 | Achieved Achieved Achieved in part Achieved in part Achieved (outside proposed timeline) Achieved (outside proposed timeline) Achieved (outside proposed timeline) |
| 34 | Public annual reporting on achievement of milestones during the first four years will be through a brief statement in the annual report of the relevant agency. | 2000 2001 2002 2003 | Achieved Achieved Achieved in part Achieved in part |
| 36 | Towards the end of the first and third five-year periods a joint Commonwealth/Western Australian review on performance against the milestones and commitments will be undertaken at the same time as the Forest Management Plan revision process, and will be completed within three months of the completion of each five-year period. | 2004 2014 | Achieved in part Achieved in part |
| 36 | The Parties will jointly report on performance before the end of the second five-year period of this Agreement. | 2009 | Achieved in part |
| 37 | The mechanisms for these five-yearly review/reports will be agreed by the Parties within six months of the date of this Agreement. | November 1999 | Achieved (outside proposed timeline) |
| 37 | Complete reviews/report within three months after the completion of each five-year period. | 2004 2009 2014 | Achieved (outside proposed timeline) Achieved (outside proposed timeline) Achieved (outside proposed timeline) |
| 38 | The outcomes of the five-yearly review/report will be made public. | 2004 2009 2014 | Achieved Achieved Achieved in part |
| 42, 95b and Attachment 5 | Within 5 years of the date of this Agreement, WA will further improve its Forest Management System and processes through the development and implementation of environmental management systems. | 2004 | 42, 95b and Attachment 5 Achieved in part |
| 43 | Western Australia will produce and publish a Forest Management Plan to implement the commitments of this Agreement. | 30 June 2004 | Achieved |
| 43 | Western Australia agrees to commence the FMP planning process by early 2001. | Early 2001 | Achieved |
| 46 | Western Australia will report on the results of monitoring of sustainability indicators as a part of each five-yearly review/report on performance. | 2004 2009 2014 | Achieved in part Achieved in part Achieved in part |
| 50 | Western Australia will address the improvements recommended in the Turner Report prior to the development of the next Forest Management Plan. | Prior to developing the FMP | Achieved |

⁵ The milestones are those detailed in Attachment 3 of the WA RFA.

| Clause | Action | Milestone timeline | Status |
|----------------------------------|--|--|--------------------------------------|
| 50 | Western Australia will have externally reviewed the sustained yield estimating process and outputs immediately before the commencement of the development of each Forest Management Plan and will incorporate improvements during the Forest Management Planning process. | 2004 onwards | Achieved |
| 51 and 52 | Western Australia in consultation with the Commonwealth will develop and implement an appropriate set of sustainability indicators to monitor Forest changes. | By 2004 | Achieved |
| 70(b) | Western Australia will within one year from the date of this Agreement establish new formal reserves under the <i>Land Administration Act 1997</i> (WA). | By May 2000 | Achieved (outside proposed timeline) |
| 70(c) | Western Australia will, within 6 months from the date of this Agreement, classify all proposed Formal reserves other than those in (b) above as "Forest Conservation Zones" under Section 62 of the CALM Act, where: these areas are State forest or timber reserves; this will be the final classification; or this will be an interim classification prior to classification under the <i>Land Administration Act 1997</i> (WA). | By November 1999 | Achieved (outside proposed timeline) |
| 70(d) | Western Australia will, within three months of the date of this Agreement, initiate the State processes for creation of new formal reserves proposed to be classified under the <i>Land Administration Act 1997</i> (WA), as specified in Attachment 1. | By August 1999 | Achieved |
| 70(e) | Western Australia will introduce an amendment to the CALM Act into the Western Australian Parliament by 31 December 1999 to require the approval of both Houses of Parliament to revoke Forest Conservation Zones in State Forest which will be created under Section 62 of the CALM Act. | 31 December 1999 | Achieved |
| 70(f) | Western Australia will establish the proposed new informal reserves, as identified in Attachment 1, in the next Forest Management Plan. | 2004 | Achieved |
| 79 | The Parties will develop a Memorandum of Understanding (MOU) for a joint Commonwealth-Western Forest Industry Structural Adjustment Program. Both Parties are committed to the implementation of a range of Forest-based industry development initiatives (Attachment 14). The Parties agree to develop a Memorandum of Understanding for a joint Commonwealth-Western Australian South-West Forest Industry Structural Adjustment Program (WA FISAP). | 1999 | Achieved |
| 87 and 95(c) | Western Australia will undertake a legislation review of the CALM Act and a review of competitive neutrality applying to CALM's wood-based businesses. | 1999 | Achieved |
| 93 | The Parties will lodge archival copies of CRA data. | By November 1999 | Achieved |
| Attachment 1, paragraph 5 and 16 | Western Australia will finalise reserve boundaries on 1:25,000 maps to enable gazettal. | By October 1999 | Achieved |
| Attachment 1, paragraph 8 | WA will prepare interim management guidelines for CALM-managed lands within 12 months of the date of this Agreement. | May 2000 | Achieved in part |
| Attachment 1, paragraph 24 | The Commonwealth will include CAR Informal Reserves in future Environmental Management Plans (EMP) for the Bindoon Training Area. A revised EMP including this CAR Informal Reserve will be prepared with public participation, by the year 2003, subject to national security considerations. | 2003 | Achieved |
| Attachment 2, paragraph 7 | The Commonwealth will complete 1:100,000 maps of indicative National Estate Places within 6 months of completion of the CAR reserve mapping at 1:25,000 scale. | Within six months of the CAR mapping | No longer applicable |
| Attachment 2, paragraph 8 | Parties will jointly accredit 1:25,000 Maps of Indicative National Estate. | Within eight months of the CAR mapping | No longer applicable |
| Attachment 2, paragraph 9 | The Parties will recommend to the AHC a complete set of listings on Public Land within the CAR Reserve System or by other mechanisms appropriate to the value. | Within six months of the CAR mapping | No longer applicable |
| Attachment 4 point 1 | Western Australia will review the processes for the involvement of communities in planning for cultural heritage conservation. | 2002 | Achieved |
| Attachment 4 point 2 | Western Australia will consult a peak stakeholder committee, comprising a wide range of interests, on research priorities within CALM. | 1999 | Achieved |

| Clause | Action | Milestone timeline | Status |
|------------------------|--|--|---|
| Attachment 4 point 3 | Western Australia will establish scientific advisory committees to facilitate input of external advice to research projects and to aid integration of CALM's strategic research planning with research priorities of other organisations, agencies and institutions. | 1999 | Achieved |
| Attachment 4 point 4 | Western Australia will extend the use of operational planning on a periodic and integrated basis and introduce the opportunity for public examination of "look ahead" plans. | 2002 | Achieved |
| Attachment 4 point 5 | Western Australia will consider publishing medium-term fire management plans which include an outline the ecological basis for burning regimes. | 2000 | Achieved |
| Attachment 5, point 1 | Western Australia will include a commitment to the principles of ecologically sustainable forest management in the next FMP. | 2004 2014 | Achieved Achieved |
| Attachment 5, point 2 | Western Australia will develop and publish policy related to productive capacity of former mine sites, maintenance of carbon and hydrological cycles, and natural and cultural heritage, in relevant Forest Management Systems. | 2004 | Achieved in part |
| Attachment 5, point 4 | Western Australia will introduce into the Western Australian Parliament amendments to the <i>Conservation and Land Management Act 1984</i> (WA) to remove the Executive Director of CALM as a member of the Lands and Forest Commission and the National Parks and Nature Conservation Authority. | By November 1999 | Achieved |
| Attachment 5, point 5 | Western Australia will update processes to allow a more efficient consideration of social, economic and environmental implications in the development, approval and ongoing audit of compliance with forest management plans. | Prior to publication of the next draft FMP | Achieved |
| Attachment 5, point 6 | Western Australia will revoke and replace previous ministerial conditions by conditions consistent with the terms of each new Forest Management Plan. | At the time of placement of ministerial conditions on future FMP | Achieved |
| Attachment 5, point 7 | Western Australia will update appropriate policy documents related to Mining of forested areas in the Region to reflect a commitment to the principles of ecologically sustainable forest management. | 2004 | Achieved in part |
| Attachment 5, point 8 | Western Australia will review the present strategies and operations to ensure they include formal requirements for conservation or re-establishment of all forest values, including productive capacity, on former Mining sites, consistent with principles of ecologically sustainable forest management. | 2004 | Achieved in part |
| Attachment 5, point 9 | Western Australia will give consideration to review the CALM _{fire} process at the next review of these processes, in regard to the setting of priorities for the use of prescribed fire and the weighting given to different values. | 2000 | Achieved |
| Attachment 5, point 10 | Western Australia will review the Code of Practice for Timber Harvesting in Western Australia (April 1997), Timber Harvesting in Western Australia (January 1996) with a view to making them easier for field operators and field staff to understand. | 2000 | Achieved |
| Attachment 5, point 12 | Western Australia will develop a system of pre-logging fauna assessment to be implemented by the commencement of the next FMP. | 2004 | Achieved |
| Attachment 5, point 13 | Western Australia will establish a joint CALM and Western Australian Museum committee to jointly assess priorities for collection of fauna data and to maintain a consolidated database. | 1999 | Period 1 and Period 2 Achieved in part Period 3 Achieved |
| Attachment 5, point 14 | Western Australia will develop a formal process to appraise and consider data requirements to support assessment of risks to biodiversity. | 2000 | Achieved in part |
| Attachment 5, point 15 | Western Australia will assess cultural heritage resources and develop databases and integrate the conservation of cultural heritage values into the forest management and planning process. | 2000 | Achieved |
| Attachment 10, point 1 | Western Australia will develop formal consultation processes with Aboriginal people about policy and procedures for the protection of Aboriginal heritage values on CALM-managed lands | 2000 | Achieved |

| Clause | Action | Milestone timeline | Status |
|------------------------|---|--------------------|------------------|
| Attachment 10, point 2 | Western Australia will consult with Aboriginal people on the establishment of mechanisms to enable more effective involvement of Aboriginal people in the protection of culturally significant sites, and the provision of training and employment opportunities. | 2000 | Achieved |
| Attachment 10, point 3 | Western Australia will protect identified Aboriginal sites in accordance with the requirements of the <i>Aboriginal Heritage Act 1972 (WA)</i> and develop protocols for, and linking, the CALM geographic information system with information held by Aboriginal Affairs Department. | 1999 | Achieved |
| Attachment 10, point 4 | Western Australia will, in consultation with Aboriginal people, establish procedures and protocols, and include relevant expertise in Aboriginal heritage in CALM, to enable the early identification of Aboriginal sites and afford them relevant protection. | 2000 | Achieved |
| Attachment 10, point 5 | Western Australia will introduce into Parliament, amendments to the <i>Wildlife Conservation Act 1950 (WA)</i> and the CALM Act to permit Aboriginal people to undertake traditional and cultural activities on State Forest and other public lands. | 2001 | Achieved in part |

4. Introduction

4.1 Background

On 4 May 1999, the State of Western Australia and the Commonwealth of Australia (the Parties) entered into the *Regional Forest Agreement for the South-West Forest Region of Western Australia* (WA RFA) for the conservation and sustainable management of this forest region. The WA RFA was among 10 regional forest agreements (RFAs) signed between the Commonwealth (C'wlth) and four states – New South Wales, Tasmania, Victoria and Western Australia (WA) – between 1997 and 2001. The duration of each RFA is 20 years with a requirement for five-yearly reviews.

The WA RFA was signed following a Comprehensive Regional Assessment (CRA) which provided an information base from more than 40 scientific projects commissioned to assess the environmental, heritage, social and economic uses and values of the forests⁶. Experts contributing to the CRA came from such fields as forest ecology, soil science, geomorphology, hydrology, archaeology, botany, zoology, geography, soil science and geology, as well as economics, social planning and regional development. The CRA involved extensive consultation and negotiation with a diverse range of stakeholders, the community and government agencies and provided the Parties with relevant information to make long-term decisions about forest use and sustainable development. The agreement was given legislative status through the *Regional Forest Agreements Act 2002* (C'wlth).

The WA RFA established an agreed framework for the management and use of the State's south-west forests that sought to implement effective conservation and management of the forests in this region, including defining forest industry practices and securing forest and associated industry development. In particular, the WA RFA provided for:

- the conservation of environmental and heritage values through identifying, establishing and maintaining a Comprehensive, Adequate and Representative (CAR) reserve system which has regard for old-growth forest types, wilderness areas, endangered species of fauna and flora, Aboriginal and World Heritage values
- ecologically sustainable management and use of forests in the region
- future growth, development and long-term stability of WA industries associated with forests and wood or wood-based products
- assistance to develop forest-based tourism and recreational opportunities based on WA's environmental advantages
- certainty of resource access to the forest industry
- certainty of resource access to the mining industry
- approval of the relevant controls (exemption for unprocessed wood or woodchips from plantations) in the *Export Control Act 1982* (C'wlth)
- a range of new or enhanced initiatives to assist with forest-based development
- the development of forest-based research
- significant employment opportunities and investment throughout south-west WA especially in rural and regional areas.

The Parties agreed to a series of milestones, commitments or obligations to assist with reporting on the performance of the WA RFA and ensuring effective implementation of the agreement. The milestones (Attachment 3 of the WA RFA) include defined actions and delivery times. Clauses 36, 37, 38 and 39 of the

⁶ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/List_of_Reports_WA_RFA.pdf

WA RFA require the Parties to prepare a progress report on the implementation of the WA RFA at five-yearly intervals following its start in 1999. As part of the third five-year progress report, the Parties can agree the process to extend the WA RFA.

The combined first and second five-yearly (1999 to 2009) progress report was completed in 2015⁷. This involved preparation of the progress report which was released for an eight-week public comment period in mid-2013 and an independent review carried out by Dr Glen Kile of the progress report and comments received⁸. Dr Kile made 13 recommendations in his report (December 2013) which was tabled in the Parliament of Australia on 18 March 2014. The Parties' joint response to Dr Kile's recommendations was also tabled in the Parliament of Australia on 11 February 2015. Both Dr Kile's report and the joint government response are publicly available on the Parties' respective department websites.

This third five-yearly (2009 to 2014) progress report was prepared jointly by the State of Western Australia and the Commonwealth of Australia. It assessed the performance of milestones and commitments in the WA RFA from 2009 to 2014 (Period 3). However, in an effort to provide appropriate context, reporting may extend beyond the scope of the five-year timeframe. This report details progress with implementation of:

- WA RFA commitments that were not covered by milestones in the combined first and second five-yearly performance report and those that are ongoing
- WA RFA commitments that were not completed prior to the combined first and second five-yearly performance report
- responses to the recommendations for continual implementation of the RFAs arising from the 2013 review.

Table 2 provides an index of the sections and appendices of the report which indicate progress in meeting the milestones and commitments.

4.2 Public consultation

This report will be released for a six-week public comment period. Submissions received by the Department of Parks and Wildlife (Parks and Wildlife), on behalf of the Parties, will be forwarded to an Independent Reviewer for analysis of the issues and matters of concern provided by the submitters. A report will be prepared by the Independent Reviewer covering analysis of this report and the submissions which will be provided to the Parties. The Parties will consider the Independent Reviewer's report and prepare a joint government response to the Independent Reviewer's recommendations. Both the Independent Reviewer's report and the joint government response report will be made publicly available as part of the third five-yearly review process.

This report contributes to the commitment in the WA RFA to undertake a report on performance against the milestones and commitments made in the WA RFA for the third (10 to 15 years) five-yearly period. While this process does not open up the WA RFA to re-negotiation, both Parties can agree to minor modifications to the WA RFA to incorporate relevant actions agreed to in the joint government response to the Independent Reviewer's recommendations.

This report has been prepared jointly by the following WA and Australian government departments or agencies:

⁷ Department of Parks and Wildlife (WA), Department of Agriculture, Fisheries and Forestry (Cwth) (2014). https://www.dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/WARFA_Review_Report_FINAL_JULY2013.pdf

⁸ Kile (2013). https://www.dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/Independent_Review_WA_RFA_Progress_Report_20122013_FINAL.pdf

Western Australia

- Parks and Wildlife
- with input from the Forest Products Commission (FPC)

Australian Government

- Department of Agriculture and Water Resources
- with input from the Department of the Environment and Energy (DoEE) and the Department of Defence.

The Parties continued to recognise that the WA RFA, within the context of the policy and legislative changes, retains the capacity to meet the stated purpose of the WA RFA. It does this by providing a framework for implementing ecologically sustainable forest management (ESFM) and use of forested areas, an expanded CAR reserve system providing for conservation of those areas, and opportunities for the wood processing industries and those that rely on such industries.

Table 2: Index of RFA milestones and commitments reported in the third five-yearly review

| Heading from WA RFA | WA RFA Clause or Attachment Number | WA RFA Period 3 Progress Report Section or Appendix |
|--|------------------------------------|---|
| Part 1 | | |
| Duration of Agreement | 6, 8-9 | Section 5.1 |
| Part 2 | | |
| Relationship to Statutory Obligations | 19, 21, 25-30, 32-33 | Section 5.2.1 |
| Milestones | 34-35 | Section 5.2.2, Table 1 |
| Five yearly review/report on performance | 36-39 | Section 5.2.3 |
| Ecologically Sustainable Forest Management | 40, 42-45 | Section 5.2.3 and 5.3, Appendices 1, 3, 4 and 10 |
| Monitoring, Reporting and Consultative Mechanisms | 46-47 | Section 5.3.1, Appendix 2 |
| Accreditation | 48, 50 | Section 5.3.2, Appendices 3 and 4 |
| Sustainability Indicators | 51-52 | Section 5.3.3 and 7, Appendix 11 |
| Private Land | 53-55 | Section 5.3.4 |
| Threatened Flora and Fauna | 56-63 | Section 5.4, Appendix 5 |
| The CAR Reserve System | 64-70 | Section 5.5, Appendix 1 |
| Industry Development | 71-80 | Section 5.6, Appendix 9 |
| Indigenous Heritage | 81 | Section 5.7, Appendix 6 |
| Other Forest Uses | 84-86 | Section 5.8 |
| Competition Principles | 87 | Section 5.9 |
| Research | 88-90 | Section 5.10 |
| Data Use and Access | 91-93 | Section 5.11 |
| Part 3 | | |
| Forest Management | 95-96 | Section 5.12.1, Appendix 10 |
| Compensation | 97 | Section 5.12.2 |
| Industry Assistance | 98 | Section 5.12.3 |
| Attachments | | |
| Comprehensive, Adequate and Representative (CAR) Reserve System | 1 | Appendix 1 |
| Public Reporting and Consultative Mechanisms | 4 | Appendix 2 |
| Improvements to Western Australia's Forest Management Systems on Public Land | 5 | Appendix 3 and 10 |
| Protection and Management of Forests on Private Land | 6 | Appendix 4 |
| Threatened Flora and Fauna | 8 | Appendix 5 |
| Aboriginal Heritage and Consultation | 10 | Appendix 6 |
| Priority Areas of Research | 11 | Appendices 7 and 12 |
| Key Principles of an Environmental Management System | 13 | Appendix 10 |
| Forest Employment and Industries Development Strategy | 14 | Appendix 9 |

4.3 Overview of the combined first and second five-yearly (1999 to 2009) performance report

The combined first and second five-yearly (1999 to 2009) progress report recognised significant policy and legislative changes to forest management in WA since the signing of the WA RFA in 1999 that affected the implementation of some milestones and commitments. Notwithstanding this recognition, the Parties acknowledge that the agreement remains a key strategic document to meet forest conservation and forest products industry commitments at a national level. The review process was completed in February 2015.

About 150 milestones, commitments or obligations were reported against in this progress report, of which approximately 90 per cent had been achieved, achieved in a modified form, achieved in part or were ongoing.

The progress report was released for an eight-week public comment period and independently reviewed by Dr Glen Kile. In summary, Dr Kile noted that overall much of the WA RFA clauses in regard to environmental protection and biodiversity conservation had been met. However, due to policy changes the *'forest employment and industry development outcomes ... generally had not been achieved'*. Dr Kile made 13 recommendations, which the Parties responded to in a joint government response in November 2014. An overview of the progress to implement these recommendations is provided in Section 6.

4.4 Creation of the Department of Parks and Wildlife

Parks and Wildlife was created on 1 July 2013 and is responsible for managing WA's 27 million hectares of parks and reserves, including those within the WA RFA region.

Parks and Wildlife's core business is the conservation and promotion of these natural assets. Parks and Wildlife's strategic direction will be to focus investment and resources on programs which provide tangible improvements in on-ground animal and plant conservation, improve recreation and tourism opportunities, and enhance local and landscape management outcomes⁹.

In this Period 3 progress report, Parks and Wildlife has been used to refer to activities or work carried out by the preceding departments, being the Department of Environment and Conservation (July 2006 to June 2013) and the Department of Conservation and Land Management (1984 to June 2006).

4.5 Forest Management Plan 2014–2023

The Conservation Commission of Western Australia (Conservation Commission) prepared, through the agency of Parks and Wildlife, the *Forest Management Plan 2014–2023*^{10,11} (FMP 2014–2023). The plan covers a total land area of about 2.5 million hectares from Lancelin, north of Perth, to Denmark on the south coast. Nearly 62 per cent of this total land area is in existing or proposed conservation reserves and otherwise protected areas. The plan's focus is on the management of State forest and timber reserves as this is where the bulk of disturbance activities occur.

⁹ Department of Parks and Wildlife (2014). dpaw.wa.gov.au/about-us/strategic-directions

¹⁰ Conservation Commission of Western Australia (2013). dpaw.wa.gov.au/management/forests/managing-our-forests/161-a-plan-for-managing-our-state-s-south-west-forests

¹¹ Department of Parks and Wildlife (2014b). dpaw.wa.gov.au/management/forests/managing-our-forests/166-information-sheet-forest-management-plan-2014-2023

The plan was prepared during a two-year period and involved wide-ranging consultation with industry and conservation groups, within government including local government, and the wider community¹². The consultation process included:

- development of a *Draft Forest Management Plan 2014–2023* (Draft FMP 2014–2023) released for a 12-week public review period in late 2012
- assessment of the *Proposed Forest Management Plan 2014–2023* by the Environmental Protection Authority (EPA) in mid-2013
- determination of appeals against the EPA’s recommendations on the proposed plan in late 2013.

The approved plan, released on 6 December 2013 to begin on 1 January 2014, provides a framework for managing the State’s south-west forests for the next decade. It strikes a balance between conservation and other activities. It is based on scientific knowledge, in which potential impacts of climate change are accounted for in relevant management activities.

Initiatives and key features of the plan include:

- a proposal to increase protected areas by adding 4000ha to Whicher National Park near Busselton
- continued protection of all old-growth forest
- retaining large marri trees, which provide nesting and food for black cockatoos for example Carnaby's black cockatoo (*Calyptorhynchus latirostris*)
- retaining habitat logs for native animals such as numbat (*Myrmecobius fasciatus*)
- a new objective to protect and conserve the value of the land to Noongar culture and heritage.

4.6 Engaging with traditional owners

Since the combined first and second five-yearly progress report, engaging with traditional owners with a connection to the country covered by the WA RFA has transformed significantly.

Changes to the *Conservation and Land Management Act 1984* (CALM Act) and the *Wildlife Conservation Act 1950* (WC Act) relating to the involvement of Aboriginal people on land and water managed by Parks and Wildlife recognised Aboriginal connection to lands, and will enable Aboriginal people to become more involved in managing land¹³ and using parks and reserves for customary activities¹⁴. These changes will help Parks and Wildlife build strong relationships with Aboriginal people and provide opportunities to resolve native title.

The CALM Act and regulations were amended in December 2012 to enable Aboriginal people to undertake certain activities for customary purposes on reserves and other lands. These changes build on amendments to the CALM Act made in March 2012, which:

- established legal frameworks to enable joint management of lands and waters between Parks and Wildlife and other parties
- allowed for customary activities to occur
- introduced a new management objective to protect and conserve the value of the lands and waters to the culture and heritage of Aboriginal people.

¹² Department of Parks and Wildlife (2013a). dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023

¹³ Department of Environment and Conservation (2012) dpaw.wa.gov.au/parks/aboriginal-involvement/91-joint-management

¹⁴ Department of Parks and Wildlife (2013) dpaw.wa.gov.au/parks/aboriginal-involvement/92-customary-activities

The South West Native Title Settlement¹⁵, driven by the Department of the Premier and Cabinet, is an agreement entered into by the State and Noongar people. It is a comprehensive native title agreement, comprising the full and final resolution of all native title claims in the south-west of WA, including Perth, in exchange for a comprehensive settlement package.

The settlement will acknowledge Noongar People as the first peoples and traditional owners of lands within the south-west corner of WA and formally acknowledges their culture, spirit, presence, heritage and identity. While outside the timeframe of the Period 3 progress report, the *Noongar Recognition Bill 2015* (assented May 2016) gives effect to the settlement objectives.

4.7 Threatened flora and fauna legislation

Since 2013, Parks and Wildlife has been developing the Biodiversity Conservation Bill in consultation with relevant government departments, including Mines and Petroleum and Fisheries. The Bill will replace the outdated *Wildlife Conservation Act 1950* and the *Sandalwood Act 1929*. While outside the period of this performance report, the Bill was introduced to the WA Parliament in November 2015.

Parks and Wildlife is carrying out an extensive review of specially protected (threatened) fauna lists with the aim of aligning these with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) threatened fauna list. Parks and Wildlife has also carried out an assessment of the recommendations from *The Action Plan for Australian Birds 2010* (CSIRO, 2011) and *The Action Plan for Australian Mammals 2012* (CSIRO, 2013)¹⁶ in context of future native species management.

4.8 Industry development

Industry development for the native forest sector during Period 3 focussed on improved alignment of log size and quality characteristics with wood-processing capabilities and opportunities. This has included examination of potential peeling logs, engineered wood products and biomass industries, and supply chain logistics.

There were initiatives in the softwood sector to improve sawlog recovery and efficiency within harvesting operations.

4.9 Structure of the third five-year (Period 3) progress report

Sections 5 to 7 and the progress report appendices detail how WA RFA implementation is progressing:

- *Section 5* lists the commitments or obligations and provides an outline of the progress to implement these for this reporting period
- *Section 6* presents the recommendations of the independent review of the combined first and second five-yearly progress reporting and the Parties' actions and progress in responding to these
- *Section 7* presents detailed information on monitoring results of sustainability indicators on the State's south-west forests under eight broad criteria, which have been adopted to assess the successful implementation of ecologically sustainable forest management
- *Appendices* which provide more detailed information to support various commitments or obligations from the WA RFA's clauses and attachments.

¹⁵ Land, Approvals and Native Title Unit (2016) dpc.wa.gov.au/lantu/south-west-native-title-settlement/Pages/default.aspx

¹⁶ Invasive species council (2014). invasives.org.au/blog/invasive-species-greatest-threats-australias-endemic-terrestrial-mammals/

Each milestone or commitment identified in the WA RFA is followed by commentary provided by the relevant Party or Parties indicating the progress achieved over the third five-yearly reporting period (Period 3). While those milestones and commitments reported on in the combined first and second five-yearly progress report¹⁷ have been retained in this report, a progress update has only be given where a significant change has occurred in the region and adds to the understanding of how implementing the clause has progressed. Otherwise, the milestones and commitment will be reported as achieved.

¹⁷ Department of Parks and Wildlife (WA), Department of Agriculture, Fisheries and Forestry (Cwth) (2014).
dpaw.wa.gov.au/management/forests/managing-our-forests/74-wa-regional-forest-agreement-progress-report

5. Progress against milestones and commitments

At the completion of the combined first and second five-yearly progress report, close to 90 per cent of the WA RFA milestones and commitments were achieved or achieved in a modified form, achieved in part or were ongoing. During this time, the Parties acknowledged and accepted the shift in the State's policy and legislative direction of forest management during the early years of the WA RFA. Notwithstanding this shift, the Parties agree the intent of the agreement is being met to provide for ecologically sustainable management of south-west native forests through the relevant FMP. For the period of this progress report this was primarily the *Forest Management Plan 2004–2013* (FMP 2004–2013), reflecting a continuation of the FMP 2004–2013 policy settings.

Under Parts 1 to 3 of the WA RFA, the Parties have designated 73 clauses. These establish commitments to be actioned and which require commentary on progress with implementation through the five-yearly progress reports. The commitments designated as milestones (**Table 1**) are a sub-set of these 73 commitments. The current status of these commitments is as follows:

- 58 (79 per cent) have been achieved
- nine (12 per cent) have been achieved in part
- two (three per cent) have been achieved (outside the proposed timeline)
- three (four per cent) have not been achieved
- one (two per cent) are no longer applicable.

Of the 13 recommendations for continued implementation of the WA RFA outlined by the Independent Reviewer as a result of the combined first and second five-yearly review in 2013, the Parties have indicated that:

- 9 (69 per cent) have been completed
- 4 (31 per cent) are underway through ongoing actions that have been implemented since 2013.

Additional commitments have been made by the Parties in most of the 14 Attachments to the WA RFA and these have been reported in the Appendices. These commitments also incorporate a number of milestones (**Table 1**).

The following responses provide qualitative and quantitative information for each relevant milestone and commitment to June 2014, or to a date otherwise specified, encompassing the third five-year period, 2009 to 2014. In some cases, information on progress may extend beyond the reporting period to assist in providing a more comprehensive picture of achievements. The major headings and relevant numbered clauses under those headings, as well as relevant attachments from the WA RFA, have been used to provide a baseline for the purposes of reporting on progress with implementation in this report.

5.1 Part 1 Principles of the agreement

| Milestone | Clause number |
|---|---------------|
| The process for extending the Agreement for a further period will be agreed by the Parties as part of the fifteen year review set out in Clause 36. | 6 |

This milestone has been achieved in part.

Work on implementing this commitment has yet to start and will be addressed bilaterally by the Parties as part of this third five-yearly review process. The Parties intend to agree the process for extending the WA RFA after undertaking the third five-yearly review of the RFA, taking into consideration the independent reviewer's recommendations and public submissions.

| | |
|---|---------------------------|
| This Agreement may only be amended with the consent, in writing, of both Parties. The Parties agree to work co-operatively to address any differences between them as to the interpretation or implementation of the Agreement. | Clause number 8 |
|---|---------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The WA RFA has not been amended nor have there been any differences between the Parties relating to interpretation or implementation of the agreement during the reporting period.

| | |
|--|---------------------------|
| The Parties agree that if a dispute arises between the Parties regarding this Agreement it must be resolved expeditiously in accordance with the provisions of Clauses 10 to 14. | Clause number 9 |
|--|---------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

There were no disputes between the Parties during the reporting period.

5.2 Part 2 Functioning of the agreement

5.2.1 Relationship to statutory obligations

| | |
|--|----------------------------|
| Neither Party will seek to use existing or future legislation or a Government Agreement to undermine or impede this Agreement. | Clause number 19 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Neither party introduced legislation that would undermine or impede the agreement during Period 3.

| | |
|---|----------------------------|
| The Parties will manage their respective responsibilities with regard to the National Estate in accordance with the provisions of this Agreement as detailed in Attachment 2. | Clause number 21 |
|---|----------------------------|

This commitment is no longer applicable.

The Register of the National Estate (RNE) was established in the 1970s when heritage protection was not coordinated nationally. Over time it came to include more than 13,000 places, most of local and state significance. In 1997, the Council of Australian Governments (COAG) agreed to coordinate heritage protection and remove overlap, with each jurisdiction responsible for heritage of significance at its own level.

Based on the 1997 COAG agreement, the Australian Government in 2003 repealed the *Australian Heritage Commission Act 1975* (C'wlth), enacted the *Australian Heritage Council Act 2003* and amended the EPBC Act to provide for the creation of two new heritage lists: the National Heritage List and the Commonwealth Heritage List (for places which are the responsibility of the Australian Government). The level of protection provided by the RNE was limited to consideration of actions by Commonwealth agencies and was superseded by stronger forms of protection available under the EPBC Act. The EPBC Act includes provisions to identify places for inclusion in the National and Commonwealth Heritage lists to protect, conserve and protect the values of these places, including heritage protection on Commonwealth land and from Commonwealth actions.

The RNE was frozen on 19 February 2007, which means that no new places can be added or any existing places, or values of places, removed. The RNE continued as a statutory register for five years until

19 February 2012 to allow states and territories to consider whether places on the RNE should be protected under other statutory provisions or their own heritage registers. During this period, the Australian Government Environment Minister was required to consider information in the RNE in the course of his decision making under the EPBC Act. The Australian Government now maintains the RNE as a non-statutory information archive.

The WA RFA region includes one Commonwealth Heritage Place (Bindoon Defence Training Area) and no National Heritage Places.

All heritage places on the RNE, National Heritage List, Commonwealth Heritage List and World Heritage List can be found by searching the Australian Heritage Database¹⁸.

| | |
|--|----------------------------|
| The Commonwealth notes that its obligations to promote endangered species protection and management in the Region will involve ongoing cooperative and jointly funded work with Western Australian agencies. | Clause number 25 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The Parties continued to promote the protection and management of threatened species and ecological communities through recovery planning and implementation. Joint Commonwealth-State funded work primarily involved implementing recovery activities for nationally listed (EPBC Act) species. New or revised recovery plans were jointly prepared, funded and implemented cooperatively by the Parties. As part of the implementation of priority actions for recovery of threatened species and ecological communities in WA, the Australian Government provided funding through a range of programs such as Caring for Our Country, Biodiversity Fund, National Landcare Programme and 20 Million Trees Programme. The Australian Government provided this funding through these programs for a range of activities across WA, though not specifically targeted at the WA RFA region.

The Parties had a Species Information Partnership¹⁹ that aimed to improve information on threatened species listed by both jurisdictions and enhanced alignment, where appropriate, between national and state lists of threatened species.

In July 2014, Australia's Threatened Species Commissioner began working collaboratively with all levels of government, scientists, the non-profit sector, industry and the community to deliver better outcomes for threatened species across all tenures, noting this is outside the present reporting period.

| | |
|---|----------------------------|
| The Parties agree that any potential World Heritage Nomination involving areas in the South-West Forest Region of Western Australia will be from within the CAR Reserve System. | Clause number 26 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

During Period 3, there were no World Heritage nominations within the south-west forest region of WA.

The National Heritage Protocol (adopted by the then Environment Protection and Heritage Ministerial Council in April 2004) stated that as a general principle, future nominations for World Heritage listing will be drawn from the National Heritage List.

¹⁸ Department of the Environment and Energy (n.d.). environment.gov.au/cgi-bin/ahdb/search.pl

¹⁹ Department of Environment and Heritage and Department of Environment and Conservation (2006). olr.npi.gov.au/biodiversity/threatened/publications/pubs/wa-species-partnership.pdf

| | |
|---|----------------------------|
| Milestone The Parties agree to actively participate in the World Heritage assessment of the Australia-wide Eucalypt theme, including any potential contribution from the South-West Forest Region of Western Australia. | Clause number 27 |
|---|----------------------------|

This ongoing milestone was achieved in Period 1, Period 2 and Period 3.

During Period 3, there have been no World Heritage nominations within the south-west forest region of WA.

| | |
|--|----------------------------|
| The Parties note that in order to progress work and then proceed to World Heritage Nomination, the agreement of all relevant governments will be required. | Clause number 28 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

During Period 3, there were no World Heritage nominations within the south-west forest region of WA.

| | |
|--|----------------------------|
| The Commonwealth agrees that it will give full consideration to the potential socio-economic consequences of any World Heritage Nomination of places in the South-West Forest Region of Western Australia and that any such nomination will only occur after the fullest consultation and with agreement of the State. | Clause number 29 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

During Period 3, there were no World Heritage nominations within the south-west forest region of WA.

| | |
|---|----------------------------|
| The Parties agree that before any World Heritage Nomination is made: (a) all necessary management arrangements, including joint policy coordination arrangements will be agreed; and (b) all related funding issues will be resolved to the satisfaction of both Parties. | Clause number 30 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

During Period 3, there were no World Heritage nominations within the south-west forest region of WA.

| | |
|---|----------------------------|
| The Parties note that no controls under the <i>Export Control Act 1982</i> (Cwth) will apply to hardwood Woodchips or Unprocessed Wood sourced from the South-West Forest Region of Western Australia while this Agreement is in place. | Clause number 32 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The Export Control (Hardwood Wood Chips) Regulations 1996 made under the *Export Control Act 1982* (EC Act) (C'wlth) ensure that woodchips derived from hardwood native forests are only permitted to be exported if they are:

- (i) derived from a region to which a RFA applies, or
- (ii) exported under a restricted shipment licence.

As the WA RFA came into force in 1999 under the Export Control (Regional Forest Agreements) Regulations 1997, all export controls on woodchips and other processed wood from the WA RFA region (except for those products sourced from plantations) were lifted.

In regard to products from plantation-based material, under amendments to the *Export Control (Unprocessed Wood) Regulations 1986*, the requirement for export licences does not apply in WA since *The Code of Practice for Timber Plantations in Western Australia*²⁰ satisfactorily protects environmental and heritage values²¹. This was confirmed by the assessment of the *Code of Practice for Timber Plantations in Western Australia 2006* undertaken by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in 2012²². The *Code of Practice for Timber Plantations in Western Australia 2006* was approved for application under the relevant regulation by the then Parliamentary Secretary for Agriculture, Fisheries and Forestry on 2 May 2013²³.

| | |
|---|----------------------------|
| Western Australia confirms its commitment to the ongoing implementation of its plans, Codes of Practice and guidelines relevant to the achievement of Ecologically Sustainable Forest Management. | Clause number 33 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The Montréal Process²⁴ criteria and indicators provided a common understanding of ecologically sustainable forest management. The criteria are:

- conservation of biological diversity
- maintenance of productive capacity of forest ecosystems
- maintenance of ecosystem health and vitality
- conservation and maintenance of soil and water resources
- maintenance of forest contribution to global carbon cycles
- maintenance and enhancement of long-term multiple socio-economic benefits
- legal, institutional and economic framework for forest conservation and sustainable management.

The FMP for each 10-year period is based on the Montréal Process Criteria. The alignment of the Montréal criteria with the criteria used in the FMP 2004–2013 and FMP 2014–2023 is set out in Table 3.

Table 3: Criteria used in the forest management plans

| Montreal Process Criterion | FMP 2004–2013 | FMP 2014–2023 |
|---|-------------------------------|-------------------------------|
| 1. Conservation of biological diversity | biological diversity | biological diversity |
| 2. Maintenance of productive capacity of forest ecosystems | productive capacity | productive capacity |
| 3. Maintenance of ecosystem health and vitality | ecosystem health and vitality | ecosystem health and vitality |
| 4. Conservation and maintenance of soil and water resources | soil and water | soil and water |

²⁰ Forest Industries Federation (WA) Inc (2006).

planningplantations.com.au/assets/pdfs/management/regulation/wa/CodeOfPracticeForTimberPlantationsWA2006.pdf

²¹ Department of Agriculture and Water Resources (n.d.). agriculture.gov.au/forestry/industries/export#when-do-you-not-need-an-export-licence

²² Smethurst et al (2012). agriculture.gov.au/SiteCollectionDocuments/forestry/australias-forest-policies/plant-code/plant-code-wa.pdf

²³ Commonwealth of Australia (2013). comlaw.gov.au/Details/C2013G00832

²⁴ Montreal Process Working Group (2009). montrealprocess.org/Resources/Criteria_and_Indicators/index.shtml

| Montreal Process Criterion | FMP 2004–2013 | FMP 2014–2023 |
|---|-------------------------------|------------------------------------|
| 5. Maintenance of forest contribution to global carbon cycles | global carbon cycles | climate change and carbon cycles |
| 6. Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies | natural and cultural heritage | heritage |
| | socio-economic benefits | socio-economic benefits |
| 7. Legal, institutional and economic framework for forest conservation and sustainable management | plan implementation | plan implementation and management |

The FMP 2004–2013 continued to be implemented during Period 3. The plan and subsidiary guidance documents steered the management and operational conduct of Parks and Wildlife and the FPC on State forest and timber reserves.

Preparation of the FMP 2014–2023 began in Period 3. The FMP 2014–2023 built on the knowledge and experience learnt in implementing the FMP 2004–2013. Particular consideration was given to the potential impact of climate change on the health and productive capacity of forest ecosystems.

The responses provided in **Appendix 10** demonstrate WA’s achievement and implementation of ESFM.

The FPC and Parks and Wildlife also operated within the provisions of the *Forest Products Act 2000* (FP Act) and the *Forest Management Regulations 1993* and managed operations in native forests in accordance with the following guidance documents: *Code of Practice for Timber Harvesting in Western Australia*²⁵, *Manual of Management Guidelines for Timber Harvesting in Western Australia*²⁶ and the *Contractors’ Timber Harvesting Manual, South West Native Forests*²⁷. During Period 3, the FPC continued to review and implement these documents and other procedures for management practices in accordance with ISO 14001—2004 Environmental Management Systems – Requirements with guidance for use (ISO 14001) and the Australian Forestry Standard AS4708—2007²⁸.

5.2.2 Milestones

| Milestone | Clause number |
|--|---------------|
| This Agreement establishes milestones (Attachment 3) and the Parties agree to provide each other with an annual report detailing their achievement of the milestones for the first four years, and then as they fall due and as part of the five-yearly reviews and report in accordance with Clauses 36 and 37. Public annual reporting on the achievement of milestones during the first four years will be through a brief statement in the annual report of the relevant agency. | 34 |

This ongoing milestone was achieved (outside proposed timeline) in Period 1, Period 2 and Period 3.

The Parties have jointly prepared this report on the progress to implement the WA RFA milestones, commitments and obligations for the third five-yearly period (Period 3). The report has been released for public comment.

²⁵ Department of Conservation and Land Management (1999)

²⁶ Department of Conservation and Land Management (1999a) dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/timberharvman99.pdf

²⁷ Any further information or requests should be directed to the Forest Products Commission website fpc.wa.gov.au or by email to info@fpc.wa.gov.au

²⁸ Forest Products Commission (2016) fpc.wa.gov.au/about-us/publications/policies-and-procedures

The Parties agree that, where the Agreement provides for the commissioning of external reviews, suitably qualified experts will be used.

Clause number
35

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The FMP 2014–2023 was prepared during Period 3, and the plan began on 1 January 2014. Development of the plan was supported by a range of reports and reviews carried out by suitably qualified experts, including:

- A review of silvicultural practices in various south-west forest types²⁹. An expert panel was convened to review the role of silviculture in delivering ecologically sustainable forest management in Western Australia
- An independent expert panel reviewed the underlying data, structure and function of the modelling work undertaken by Parks and Wildlife to calculate sustained yield³⁰. The panel considered:
 1. if the structure, operation and outputs from the woodflow models are robust and flexible enough for computing the sustained yields and other wood availability figures included in the proposed FMP
 2. if the uncertainty associated with a drying climate has been adequately factored into the sustained yield calculations
 3. if the level of provision for other risks and uncertainty associated with the volume estimates are appropriate
 4. if the calculations incorporate suitable adjustments for the operational feasibility of obtaining the strategic woodflows
 5. issues raised in the FMP 2014–2023 public comment process
- The Draft FMP 2014–2023 contained a range of scenarios and management practices that could be implemented. An independent socio-economic impact assessment of these scenarios and practices was commissioned to identify and quantify their potential impact. The findings were reported in the *Social and Economic Impact Assessment of Implementation of the Draft Forest Management Plan 2014–2023. Prepared for the Conservation Commission of Western Australia and the Department of Environment and Conservation*³¹.

The relevant finding and reports were made available on the Parks and Wildlife's website as background information with the release of the Draft FMP 2014–2023 for public comment in August 2012.

In 2010, an expert panel was convened to report on the potential implications of climate change for timber harvesting in native forest ecosystems in multiple-use State forests in south-west WA³². The findings of the expert panel were published on the Parks and Wildlife website and considered in the preparation of the FMP 2014–2023.

²⁹ Burrows et al (2011). dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/panel_report.pdf

³⁰ Ferguson et al (2013). dpaw.wa.gov.au/images/document/conservation-management/forests/FMP/Sustained_Yield_Independent_Expert_Panel_Report_MARCH2013.pdf

³¹ URS Australia (2012). dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/socio_economic_impact_assessment.pdf

³² Maher et al (2010). dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/2response_and_final_report_-_vulnerability_of_forests_under_the_influence_of_climate_change.pdf

5.2.3 Five-yearly review/report on performance

| Milestone | Clause number |
|---|----------------------|
| The Parties note that under the CALM Act, Forest Management Plans are revised every ten years. Towards the end of the first and third five year periods of this Regional Forest Agreement, a joint Commonwealth/Western Australian review on performance against the milestones and commitments made in this Agreement will be undertaken at the same time as the Forest Management Plan revision process, thereby taking into account the required Environmental Protection Authority assessment of, and recommendations on, the revised Forest Management Plans due at those times and the associated statutory public consultation processes. The Commonwealth and the State will jointly report on performance before the end of the second five year period of this Agreement. | 36 |

This ongoing milestone was achieved in part in Period 1, Period 2 and Period 3.

Preparation of the FMP 2014–2023 began during Period 3, and the plan started on 1 January 2014. It was developed in accordance with the CALM Act by Parks and Wildlife on behalf of the Conservation Commission. Accordingly, this progress report covers primarily actions undertaken through the implementation of the FMP 2004–2013, including preparation of and extending into the start of the FMP 2014–2023.

| Milestone | Clause number |
|--|----------------------|
| The mechanisms for these joint reviews/report will be agreed by the Parties within six months of the signing of this Agreement and the reviews/report will be completed within three months after the completion of each five-year period. | 37 |

This milestone was achieved (outside proposed timeline) in Period 1, Period 2 and Period 3.

The *Scoping Agreement for the review of progress with implementation of the Western Australia Regional Forest Agreement: Third Five-Yearly Review* was signed by the Parties at a Ministerial level on 28 January 2016. The scoping agreement outlines the process for carrying out the third five-yearly review which remains essentially the same as the earlier combined first and second five-yearly review.

The Parties have jointly prepared this report on the progress with implementation of the WA RFA milestones, commitments and obligations for the third five-yearly period. The report has been released for public comment.

| Milestone | Clause number |
|---|----------------------|
| While these five year reviews/report on performance will not open up the Agreement to re-negotiation, both Parties may agree to some minor modifications to incorporate the results of the reviews or report on performance. The outcomes of the reviews and the report on performance will be made public. | 38 |

This milestone was achieved in Period 1 and Period 2 and achieved in part in Period 3.

The WA RFA was not modified as a result of the combined first and second five-yearly progress reporting process.

In accordance with the WA RFA, this third five-yearly progress report has been made available for public comment through:

- distribution to key and related stakeholders at regional, state and national levels

- publishing to the Parties' websites
- advertising in *The West Australian* and community newspapers covering the south-west forest region
- Koori Mail.

The progress report and any public comment received will be subject to an independent review. The independent review report and the Parties' joint government response will be tabled in the Australian Parliament and published to the relevant websites.

| | |
|---|----------------------------|
| The Commonwealth will table in the Commonwealth Parliament the signed Regional Forest Agreement and when completed the annual reports detailing achievement of the milestones for the first four years of the Agreement and the first five year review on performance against milestones and commitments. | Clause number 39 |
|---|----------------------------|

This commitment has been achieved in part in Period 1, Period 2 and Period 3.

The report by the Independent Reviewer for the combined first and second five-yearly review (1999 to 2009) was tabled in the Australian Parliament on 18 March 2014. The Parties' joint government response to the recommendations of the Independent Reviewer was also tabled in the Australian Parliament on 15 February 2015. Both reports are published on the Parties websites³³.

| | |
|---|----------------------------|
| The Parties agree that ESFM is an objective which requires a long-term commitment to continuous improvement and that the key elements for achieving it are: a) the establishment of a CAR Reserve System (Attachment 1); b) the development of internationally competitive Forest-based industries; and c) a fully integrated and strategic Forest Management System capable of responding to new information. | Clause number 40 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Detailed responses to this Clause are provided at:

- **Section 5.5** (*CAR reserve system*) and **Appendix 1** for part (a)
- **Section 5.6** (*Industry development*) and **Appendix 9** for part (b)
- **Appendix 10** for part (c).

5.3 *Ecologically sustainable forest management*

| | |
|--|----------------------------|
| Milestone Within 5 years of the date of this Agreement, Western Australia will further improve its Forest Management System and processes through the development and implementation of environmental management systems in accordance with the principles specified in Attachment 13 (of the RFA) and the actions identified in Attachment 5 (of the RFA) and acknowledges that its objective for native forest management under the CALM Act is system certification comparable with ISO 14000 series. The Parties note that such a system would include independent auditing of compliance with Codes of Practice and the Forest Management Plan. | Clause number 42 |
|--|----------------------------|

³³ dpaw.wa.gov.au and agriculture.gov.au

This ongoing milestone was achieved in part Period 1, Period 2 and Period 3.

The milestones and commitments detailed in Attachment 5 of the WA RFA, *Improvements to Western Australia's Forest Management Systems on Public Land*, were achieved in part during Period 3. The intent of the milestones and commitments in Attachment 5 were captured through the management actions of the FMP, for example improving forest health surveillance through extensive mapping of *Phytophthora* dieback in jarrah forest and developing comprehensive guidance documents to minimise soil disturbance. **Appendix 10** shows a diagrammatic overview of the forest management system (FMS) in WA. This overview identifies the key legislative, policy and guidance material comprising the FMS.

The FPC achieved environmental management system (EMS) certification for its native forest operations under ISO 14001 in 2001 and for whole of agency in 2007–08. FPC achieved forest management certification under *The Australian Forestry Standard AS4708-2007* (AFS) for karri forest operations in March 2009 and for all forest operations in July 2009. During Period 3, the BSI Group ANZ, an independent third-party certification body, audited FPC's operations to maintain its certification under its EMS and the AFS.

In October 2014, FPC achieved Forest Stewardship Council (FSC) Controlled Wood certification covering its karri forest harvesting and regeneration operations³⁴. While outside Period 3, the first surveillance audit was conducted in 2015.

For Period 3, Parks and Wildlife conducted annual audits of native forest harvesting coupe management and environmental protection. The findings from these audits are published in Parks and Wildlife's respective yearbooks³⁵.

Targeted audits were conducted on management practices including silviculture, dieback identification and interpretation, identification and management of habitat elements in native forest harvesting and landing rehabilitation. Audit findings are submitted to Parks and Wildlife's Director General and used to implement continual improvement and focus training requirements.

The FMP 2004–2013 end-of-term audit of performance report³⁶ was submitted to the Environmental Protection Authority in 2012 for consideration and subsequent advice to the WA Environment Minister. The report involved reporting 33 key performance indicators (KPIs) and outlined progress in implementing the plan. It contributed to the development of the Draft FMP 2014–2023 including a comprehensive review and subsequent revision of key performance indicators for inclusion in the new plan.

The Conservation Commission undertakes performance assessments to fulfil the functions described in section 19(1)(g) of the CALM Act to 'assess and audit the performance of the Department and the Forest Products Commission in carrying out and complying with the management plans'. During Period 3, the Conservation Commission undertook performance assessments across the FMP area within the conservation reserve system and State forest and timber reserve. Topics included *Phytophthora* dieback, the Wungong Catchment, protection of significant flora and understorey species, performance assessment policy, biodiversity outcomes of prescribed burning, salinity management and parks of the Perth Hills. Performance assessment reports are published on the Conservation Commission's website³⁷.

³⁴ Forest Products Commission Western Australia (2016a). fpc.wa.gov.au/forest-management/independent-certification/fpcs-management-plan-karri-forest

³⁵ Department of Parks and Wildlife (n.d.) dpaw.wa.gov.au/about-us/annual-report-and-yearbook

³⁶ Department of Parks and Wildlife (2013a). dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023

³⁷ Conservation Commission of Western Australia (n.d.). conservation.wa.gov.au/performance-assessments/performance-assessments.aspx

| Milestone | Clause number |
|--|---------------|
| Western Australia agrees to produce and publish a Forest Management Plan to implement the commitments of this Agreement by 30 June 2004 taking into account the importance of RFA certainty and commencing the planning process by early 2001. | 43 |

This milestone was achieved in Period 1, Period 2 and Period 3.

The FMP 2004–2013 began on 1 January 2004. The FMP 2014–2023 began on 1 January 2014. These gave effect to the values and intent of the WA RFA by implementing reserve proposals for the CAR reserve system and consolidating sustained yield levels.

| | |
|--|---------------------|
| Western Australia agrees to further develop and implement the Forest Management System for Private Lands in accordance with Attachment 6 (of the RFA). | Clause number 44 |
|--|---------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

WA continues to manage native vegetation on private lands through the clearing provisions of the *Environmental Protection Act 1986* (EP Act) and associated regulations³⁸. It is an offence to clear native vegetation, unless done under a clearing permit, or the clearing is for an exempt purpose. Environmentally sensitive areas (ESAs)³⁹ may be declared under section 51B of the EP Act and exemptions that apply under the clearing regulations do not apply in ESAs. These regulations are administered by the Department of Environmental Regulation.

With the creation of Parks and Wildlife in 2013, it became the department responsible for the continued delivery of those programs that, through partnerships between private landowners, government and other agencies, help protect the natural values of bushland located outside the conservation reserve system⁴⁰.

Protection of CAR values on private lands has been enhanced by targeted purchase of properties within the WA RFA region (FMP 2014–2023, Appendix 1) including parcels of land in Dalgapur, Beerup, Walpole, Nornalup and other localities and securing these areas in perpetuity.

Further detail on the status of forest management on private lands is in **Appendix 4**.

| | |
|---|---------------------|
| Western Australia confirms that the Sustained Yield for native forest on Public Land will continue to be based on areas available for timber harvesting outside the CAR Reserve System and that the average annual cut will be within Sustained Yield in the 10 year period of each Forest Management Plan. | Clause number 45 |
|---|---------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The calculation of sustained yields for both the FMP 2004–2013 and the FMP 2014–2023 was based on the areas available for timber harvesting outside the CAR reserve system, other informal reserves and fauna habitat zones. The total area of jarrah (*Eucalyptus marginata*), karri (*E. diversicolor*) and wandoo (*E. wandoo*) forests available for timber production within the WA RFA region for the calculation of sustained yields for the FMP 2004–2013 was 848,380ha. During Period 3 between 4520ha and 8990ha per annum of jarrah forest was cutover to a range of silvicultural objectives, and between 850ha and 1660ha per annum of karri forest.

³⁸ Department of Environment Regulation (n.d.) der.wa.gov.au/our-work/clearing-permits

³⁹ Department of Environment Regulation (2014). der.wa.gov.au/images/documents/your-environment/native-vegetation/Fact_sheets/fs24-clearing-regs_ESAs.pdf

⁴⁰ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/off-reserve-conservation

Table 4 summarises the area of each forest type cutover during Period 3. The silvicultural objectives of harvesting include to establish regeneration (shelterwood), promote growth on retained trees (thinning) and release regeneration (gap creation).

Table 4: Area of native forest harvested during 2009 to 2013 to a range of silvicultural or management objectives

| Forest type | Area cutover (hectares) | | | | |
|--------------|-------------------------|-------------|-------------|-------------|-------------|
| | 2009 | 2010 | 2011 | 2012 | 2013 |
| Jarrah | 8990 | 4520 | 6140 | 6760 | 5880 |
| Karri | 1660 | 1620 | 1320 | 1020 | 850 |
| Wandoo | 10 | 0 | 30 | 0 | 0 |
| Other* | 990 | 1250 | 1360 | 790 | 1390 |
| Total | 11,650 | 7390 | 8850 | 8570 | 8120 |

* Areas of any forest type harvested then cleared for utilities or harvested then cleared with subsequent reforestation for mining.

The CALM Act requires that production and harvesting of forest products from State forest and timber reserves is conducted on a sustained yield basis. An independent panel of experts reviewed the data and methodology used in the sustained yield calculations for the FMP 2004–2013, for which an average annual allowable cut for 10 years was determined for jarrah and karri first and second grade sawlogs (131,000m³ and 54,000m³ respectively)⁴¹. A separate independent panel reviewed the process for calculating the sustained yields for the FMP 2014–2023⁴². The average annual allowable cut for the 10 years was set at 132,000m³ of first and second grade sawlog for jarrah, and 59,000m³ for karri, with provision for an increase should markets for lower grade logs and improvements in utilisation eventuate.

Key performance indicator 5 reported the annual removal of wood products compared to the sustained yield determined by the FMP 2004–2013, and KPI 16 will report on this for the FMP 2014–2023.

A comparison of annual removal data to the allowable cut for the period 2009 to 2014 is presented in **Table 5** to **Table 11**.

First and second grade sawlogs

Over the FMP 2004–2013, which includes most of Period 3, the removal of first and second grade sawlogs for both jarrah and karri was within the allowable cut for each species. During 2014, the removal of first and second grade sawlogs was also within the allowable cut determined for each species under the FMP 2014–2023.

Table 5: Jarrah first and second grade sawlog removals during 2009 to 2013 relative to the 131,000m³ average annual sustained yield (FMP 2004–2013)

| Jarrah first and second grade sawlog volume (m ³) | | | | | | | |
|---|------------------------------|------------------|-----------|--------------------|------------------------------|-------------------|-----------|
| Annual volumes | | | | Cumulative volumes | | | |
| Year | KPI upper limit [^] | Annual removals* | Variation | Period | KPI upper limit [†] | Periodic removals | Variation |
| 2009 | 144,100 | 116,586 | -27,514 | | | | |

⁴¹ Ferguson et al (2001, 2003). conservation.wa.gov.au/media/794/CalculatingSustainedYield.pdf

⁴² Ferguson et al (2013). dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/Sustained_Yield_Independent_Expert_Panel_Report_MARCH2013.pdf

| Jarrah first and second grade sawlog volume (m ³) | | | | | | | |
|---|-----------|-----------|----------|--------------------|---------|---------|----------|
| Annual volumes | | | | Cumulative volumes | | | |
| 2010 | 144,100 | 94,008 | -50,092 | | | | |
| 2011 | 144,100 | 79,864 | -64,236 | | | | |
| 2012 | 144,100 | 117,428 | -26,672 | | | | |
| 2013 | 144,100 | 101,120 | -42,980 | | | | |
| | | | | 2009 to 2011 | 412,650 | 290,458 | -122,192 |
| | | | | 2010 to 2012 | 412,650 | 291,300 | -121,350 |
| | | | | 2011 to 2013 | 412,650 | 298,412 | -114,238 |
| 2004 to 2013 | 1,310,000 | 1,157,348 | -152,652 | | | | |

^ This figure represents the annual average sustained yield multiplied by 1.1 i.e. not more than 10 per cent over the annual average sustained yield.

* Figures incorporated an adjustment to the raw delivery data to reflect a change in the minimum sawlog specification accepted by customers during 2009 to 2013.

† This figure is the KPI specified limit for three consecutive years.

Table 6: Jarrah first and second grade sawlog removals during 2014 relative to the 132,000m³ average annual sustained yield (FMP 2014–2023)

| Jarrah first and second grade sawlog volume (m ³) | | | | | | | |
|---|------------------------------|-----------------|-----------|--------------------|-----------------|-------------------|-----------|
| Annual volumes | | | | Cumulative volumes | | | |
| Year | KPI upper limit [^] | Annual removals | Variation | Period | KPI upper limit | Periodic removals | Variation |
| 2014 | Not applicable for one year | 71,195* | | 2014 to 2016 | 435,600 | | |

^ The KPI requires that the cumulative removals of first and second grade sawlogs shall not exceed the cumulative average annual allowable cut by more than 10 and five per cent at the end of years three and six respectively of the FMP 2014–2023.

* Minor adjustments (if required) for variations in product specifications will be applied in the reporting for the mid-term performance review of the FMP 2014–2023 in 2018.

Table 7: Karri first and second grade sawlog removals during 2009 to 2013 relative to the 54,000m³ average annual sustained yield (FMP 2004–2013)

| Karri first and second grade sawlog volume (m ³) | | | | | | | |
|--|------------------------------|------------------|-----------|--------------------|------------------------------|-------------------|-----------|
| Annual volumes | | | | Cumulative volumes | | | |
| Year | KPI upper limit [^] | Annual removals* | Variation | Period | KPI upper limit [†] | Periodic removals | Variation |
| 2009 | 59,400 | 54,763 | -4,637 | | | | |
| 2010 | 59,400 | 56,261 | -3,139 | | | | |
| 2011 | 59,400 | 50,639 | -8,761 | | | | |
| 2012 | 59,400 | 50,823 | -8,577 | | | | |
| 2013 | 43,019 | 42,509 | -510 | | | | |
| | | | | 2009 to 2011 | 170,100 | 161,663 | -8,437 |
| | | | | 2010 to 2012 | 170,100 | 157,723 | -12,377 |

| Karri first and second grade sawlog volume (m ³) | | | | | | | |
|--|------------------------------|------------------|-------------|--------------------|------------------------------|-------------------|-----------|
| Annual volumes | | | | Cumulative volumes | | | |
| Year | KPI upper limit [^] | Annual removals* | Variation | Period | KPI upper limit [†] | Periodic removals | Variation |
| | | | | 2011 to 2013 | 144,481 | 143,971 | -510 |
| 2004 to 2013 | 540,000 | 539,490 | -510 | | | | |

[^] This figure represents the annual average sustained yield multiplied by 1.1 i.e. not more than 10 per cent over the annual average sustained yield.

* Figure incorporates an adjustment to the raw delivery data to reflect a change in the minimum sawlog size that was accepted by customers during 2009 to 2013.

[†] This figure is the KPI specified limit for three consecutive years.

Table 8: Karri first and second grade sawlog removals during 2014 relative to the 59,000m³ average annual sustained yield (FMP 2014–2023)

| Karri first and second grade sawlog volume (m ³) | | | | | | | |
|--|------------------------------|-----------------|-----------|--------------------|-----------------|-------------------|-----------|
| Annual volumes | | | | Cumulative volumes | | | |
| Year | KPI upper limit [^] | Annual removals | Variation | Period | KPI upper limit | Periodic removals | Variation |
| 2014 | Not applicable for one year | 40,580* | -24,320 | 2014 to 2016 | 194,700 | | |

* Minor adjustments (if required) for variations in product specifications will be applied in the reporting for the mid-term performance review of the FMP 2014–2023 in 2018.

[^] The KPI requires that the cumulative removals of first and second grade sawlogs shall not exceed the cumulative average annual allowable cut by more than 10 and five per cent at the end of years three and six respectively of the FMP 2014–2023.

Annual removal of other jarrah log products

The annual and cumulative removals of jarrah other bole⁴³ volume during Period 3 were significantly below the upper limits specified in the FMP 2004–2013 Table 4 and the FMP 2014–2023 Table 5.

Table 9: Jarrah other bole volume annual removals during 2009 to 2014 relative to the FMP specified limits

| Jarrah other bole volume (m ³) | | | | | |
|--|------------------|---------------------------------|---------------------------|--|-------------------------------------|
| Year | Annual Removals* | FMP average annual availability | Cumulative total removals | FMP average annual cumulative quantity | Cumulative variation (Actual – FMP) |
| 2009 | 136,678 | 534,000 | 949,055 | 3,204,000 | -2,254,945 |
| 2010 | 128,574 | 534,000 | 1,077,629 | 3,738,000 | -2,660,371 |
| 2011 | 194,454 | 534,000 | 1,272,083 | 4,272,000 | -2,999,917 |
| 2012 | 197,798 | 534,000 | 1,469,881 | 4,806,000 | -3,336,119 |
| 2013 | 169,188 | 534,000 | 1,639,069 | 5,340,000 | -3,700,931 |
| 2014 | 131,498 | 292,000 – 521,000 [^] | 131,498 | 292,000 – 521,000 | -160,502 |

* Figures do not include that portion of the non-sawlog volume made available during operations but retained either standing or felled within the follow-up silvicultural treatments.

[^] The FMP 2014–2023 provides for a range in production of other bole volume, with the upper limit subject to the approval of the Minister for Environment and dependent on the availability of markets for the lower grade logs.

⁴³ The FMP defines ‘Other bole log’ as a log cut from the bole of a tree that is below second grade sawlog specifications. This category includes logs sold as third grade sawlog, firewood and other residue products.

The low volumes of jarrah other bole volume removed relative to the FMP average availability was due to an absence of markets for some lower grade log material produced during integrated harvest operations, and the lack of thinning operations in young regrowth stands.

Annual removal of marri bole logs

The annual and cumulative removals of marri (*Corymbia calophylla*) bole logs during Period 3 were significantly less than the upper limits specified in the FMP 2004–2013 and FMP 2014–2023 due to the absence of persistent markets for lower grade log material and the lack of thinning operations in young jarrah regrowth stands.

Table 10: Marri bole volume annual removals during 2009 to 2014 relative to the FMP specified limits

| Marri bole volume (m ³) | | | | | |
|-------------------------------------|------------------|---------------------------------|---------------------------|--|-------------------------------------|
| Year | Annual removals* | FMP average annual availability | Cumulative total removals | FMP average annual cumulative quantity | Cumulative variation (Actual – FMP) |
| 2009 | 5239 | 196,000 | 77,995 | 1,176,000 | -1,098,005 |
| 2010 | 17,441 | 196,000 | 95,436 | 1,372,000 | -1,276,564 |
| 2011 | 9777 | 196,000 | 105,213 | 1,568,000 | -1,462,787 |
| 2012 | 15,199 | 196,000 | 120,412 | 1,764,000 | -1,643,588 |
| 2013 | 7480 | 196,000 | 127,892 | 1,960,000 | -1,832,108 |
| 2014 | 14,817 | 140,000 – 254,000 [^] | 14,817 | 140,000 – 254,000 | -125,183 |

* Figures do not include that portion of the non-sawlog volume made available during operations but retained either standing or felled within the follow-up silvicultural treatments.

[^] The FMP 2014–2023 provides for a range in production of marri bole volume, with the upper limit subject to the approval of the Environment Minister and dependent on the availability of markets for the lower grade logs.

The annual removal of other jarrah log products and marri bole logs was discussed in detail in the report on KPI 5 from the end-of-term audit of performance of the FMP 2004–2013 (March 2012)⁴⁴.

Annual removal of other karri log products

Karri other bole volume (OBV) was defined as the volume of all wood within the tree bole that was not of first and second grade sawlog quality. The FMP 2004–2013 provided for an annual average available limit over 10 years of 160,000m³.

Table 11: Karri other bole volume annual removals during 2009 to 2014 relative to the FMP specified limit

| Karri other bole volume (m ³) | | | | | |
|---|-----------------|---------------------------------|---------------------------|--|-------------------------------------|
| Year | Annual removals | FMP average annual availability | Cumulative total removals | FMP average annual cumulative quantity | Cumulative variation (Actual – FMP) |
| 2009 | 111,243* | 160,000 | 884,550 | 960,000 | -75,450 |
| 2010 | 155,793 | 160,000 | 1,040,343 | 1,120,000 | -79,657 |
| 2011 | 150,802 | 160,000 | 1,191,145 | 1,280,000 | -88,855 |

⁴⁴ Conservation Commission of Western Australia (2012). <http://www.conservation.wa.gov.au/management-planning/management-plans/forest-management-plan-2004-2013.aspx>

| Karri other bole volume (m ³) | | | | | |
|---|-----------------|---------------------------------|---------------------------|--|-------------------------------------|
| Year | Annual removals | FMP average annual availability | Cumulative total removals | FMP average annual cumulative quantity | Cumulative variation (Actual – FMP) |
| 2012 | 123,948 | 160,000 | 1,315,093 | 1,440,000 | -124,907 |
| 2013 | 104,942 | 160,000 | 1,420,035 | 1,600,000 | -179,965 |
| 2014 | 100,982 | 164,000 | 100,982 | 164,000 | -63,018 |

* Figures incorporate an adjustment to the raw delivery data to reflect a change in the minimum sawlog specification (and hence proportion sold as other bole volume) that customers accepted.

Annual removal of other wood species sawlogs

The average annual quantities of sawlogs harvested for other species during 2009 to 2013 were 84m³ of wandoo, 968 m³ of WA blackbutt or yarri (*E. patens*) and 559m³ of sheoak (*Allocasuarina fraseriana*). These volumes are all below the annual average allowable volume provided for in the FMP 2004–2013 of 1300m³ of wandoo, 1600 cubic metres of WA blackbutt and 1900m³ of sheoak. The FMP 2014–2023 set revised annual allowable harvest levels of 1100m³ for wandoo, 1300m³ for blackbutt and 1200m³ for sheoak. The 2014 removals of each species were also below these limits (134m³ for wandoo, 651m³ for blackbutt, and zero for sheoak). The FPC reported on the production levels of these species for each year through ongoing annual reporting, *Log Production from Crown Land and private property*⁴⁵.

5.3.1 Monitoring, reporting and consultative mechanisms

| Milestone | Clause number |
|--|---------------|
| Western Australia will report on the results of monitoring of sustainability indicators as part of each 5 year review and report in accordance with Clauses 36 and 37. | 46 |

This ongoing milestone was achieved in part in Period 1, Period 2 and Period 3.

WA contributes to reporting on the Montréal Process Criteria and Indicators through *Australia's State of the Forests Report* (SOFR)⁴⁶. Previously, the Commonwealth released SOFR 2003 in September 2003, SOFR 2008 in May 2008 and SOFR 2013 in December 2013 to fulfil the *National Forests Policy Statement*⁴⁷ commitment to provide the Australian public with forest sustainability reports every five years and international reporting requirements under the inter-governmental Montréal Process. National and regional monitoring and reporting in relation to all of Australia's forests is also covered by Section 10A of the *Regional Forest Agreements Act 2002*.

The FMP 2004–2013 requires a range of KPIs to be reported against to assess the progress and performance of implementing the plan. KPIs were reported on in the mid and end-of-term audit of performance reports (December 2008 and March 2012 respectively) which were submitted to the EPA. The majority of the KPIs align with the modified Montréal Process Criteria used to develop the FMP 2004–2013. A series of protocols were developed to define how data would be collected and analysed to report against the KPIs.

Section 7, Reporting on Sustainability Indicators for WA: 2009–2014, provides an overview of the Parties' reporting commitment on the sustainability indicators. This has been developed in the context of the criteria and indicators comprising the national framework. **Appendix 11** shows an alignment of the national framework to WA reporting processes from information compiled from the FMP 2004–2013 KPI reporting,

⁴⁵ Forest Products Commission Western Australia (2015). fpc.wa.gov.au/about-us/publications/annual-reports

⁴⁶ Montreal Process Implementation Working Group for Australia and National Forest Inventory Steering Committee (2013). agriculture.gov.au/abares/forestsaustralia

⁴⁷ Commonwealth of Australia (1992, 1995). agriculture.gov.au/forestry/policies/forest-policy-statement

the State's contribution to the range of indicators for Australian's State of the Forests reporting and other sources.

| | |
|---|------------------------------------|
| <p>Comprehensive Regional Assessments, the development of criteria and indicators for sustainable forest management through the Montréal Process and the development of this Agreement have provided extensive opportunities for public participation and reporting. Parties note the range of reporting and consultative mechanisms that currently exist in Western Australia (see Attachment 4 of WA RFA) and agree that Western Australia will further develop these by implementing the improvements specified in Attachment 4.</p> | <p>Clause number 47</p> |
|---|------------------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Attachment 4 of the WA RFA provided a list of planning and management activities undertaken in the WA RFA region and the level of community consultation and public reporting. Attachment 4 also listed a range of proposed improvements to these reporting and consultative mechanisms, including consulting on cultural heritage and research priorities and extending the opportunity for the public to examine operational planning.

WA continues to implement existing public reporting requirements and carries out ongoing community consultation relevant to WA public forests as well as improvements to community participation and public reporting. These are outlined in **Appendix 2**.

Preparation of the FMP 2014–2023 started during Period 3 and involved extensive consultation with the community, Aboriginal people, local government, peak conservation and industry groups, and relevant government agencies. It included:

- An Environmental Scoping Document released as a part of the EPA's environmental assessment process. The scoping document provided the community with an opportunity to comment on the key environmental issues that should be addressed in the FMP 2014–2023
- A 12-week statutory public comment period on the Draft FMP 2014–23, which resulted in approximately 5100 submissions being received and analysed with responses prepared for the EPA as part of the environmental impact assessment
- Public information sessions being carried out in Armadale, Bunbury and Manjimup during the public comment period
- Extensive consultation with Noongar people through input and feedback via the South West Aboriginal Land and Sea Council (SWALSC), the native title representative body, and the native title working parties representing the registered native title claim groups in the plan area. In 2013, a further meeting with representatives of the native title claim groups discussed appropriate mechanisms for ongoing consultation to conserve and protect Noongar cultural and heritage values to be incorporated into the final plan.

Parks and Wildlife and the FPC have continued to make available to the public three-year⁴⁸ and annual indicative timber harvest plans for the two forest resource supply zones⁴⁹. Parks and Wildlife also publishes regional burn programs and south-west regions prepare three-year indicative and annual burn plans. The community is provided with the opportunity to contribute to the development of these plans⁵⁰.

⁴⁸ Department of Parks and Wildlife (2014c). dpaw.wa.gov.au/management/forests/forest-produce/175-planning-for-timber-harvesting

⁴⁹ Forest Products Commission Western Australia (n.d.). fpc.wa.gov.au/harvest-plans

⁵⁰ Department of Parks and Wildlife (n.d.). Fire. dpaw.wa.gov.au/management/fire

FPC’s certification under the Australian Forestry Standard requires engaging with stakeholders and ongoing liaison with neighbours.

The FPC has developed a comprehensive stakeholder management database. Through the process of achieving Forest Stewardship Council (FSC) controlled wood certification, the FPC prepared a karri FMP. The plan’s development included comprehensive stakeholder engagement as required by the FSC controlled wood standard. Effective stakeholder engagement assists the FPC to achieve an environmentally sustainable, renewable and commercially viable forest products industry. The FPC ensures stakeholders needs and interests are consistently, transparently and meaningfully considered in FPC’s activities (Policy 54, Stakeholder engagement). An important aspect of forest management standards certification awarded to the FPC requires engaging stakeholders. This involves release of annual indicative timber harvest plans for public comment and ongoing liaison with neighbours, including Aboriginal people, at the coupe planning stage prior to timber harvesting⁵¹.

Preparation of area management plans⁵² required by Part V of the CALM Act can be supported by stakeholder working groups with community representation. The draft area management plan is released for public comment.

The Conservation Commission continues to administer a public nomination process to request the Commission to assess an area in the indicative timber harvest plan for the presence of unmapped old-growth forests⁵³.

5.3.2 Accreditation

| | |
|--|----------------------------|
| The Parties agree that Western Australia’s Forest Management System as amended by this Agreement, including improvements specified in Attachments 5 and 6, provide for continuing improvement in relation to ESFM. The Commonwealth accredits as providing for ESFM Western Australia's Forest Management Systems, as amended by this Agreement. | Clause number 48 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The Parties recognise that one of the substantive purposes of the WA RFA was to provide for ecologically sustainable management and use of the forests in the south-west forest region. The ecologically sustainable forest management section (Clauses 40 to 45) established the basis for the WA FMS which was further elaborated in Attachment 5 to the WA RFA. During the 15 years since the signing of the WA RFA, there has been a suite of changes, amendments and augmentations to the elements of the WA FMS to reflect the continuous improvement intent of the WA RFA. In order to demonstrate such, the Parties have provided the current WA FMS framework operating in the WA RFA in **Appendix 10**.

The FMP 2004–2013 covered a 10-year period and was the key policy document for managing south-west forests at a whole of forest, landscape and operational scale during Period 3. The FMP 2004–2013 specifically identified continual improvement and adaptive management to implement the plan. Parks and Wildlife and the FPC reported on the implementation of the FMP 2004–2013 in an end-term audit of performance report which was submitted to the EPA.

During Period 3, the FPC remained certified under *The Australian Forestry Standard* (AS 4708-2007)

⁵¹ Forest Products Commission Western Australia (n.d.). fpc.wa.gov.au/about-us/publications/policies-and-procedures

⁵² Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/parks/management-plans

⁵³ Conservation Commission of Western Australia (2005). conservation.wa.gov.au/performance-assessments/old-growth-overview/public-nominations.aspx

[AFS]⁵⁴, which required compliance with requirements including addressing continual improvement to its FMS, one of the nine criteria under the standard. The forest management certificate demonstrating the FPC's compliance with the AFS was awarded by an accredited third-party independent certification body.

The FPC is also certified to the FSC controlled wood standard for its karri forest operations⁵⁵. To achieve this certification, among other issues the FPC recognises and protects from disturbance Type 1 old-growth forest and identifies Type 2 old-growth forest as required by the standard, as well as an increased focus on retaining mature habitat trees.

Improvements to elements of the FMS on public and private lands are outlined in responses to Clauses 42 and at **Appendices 3 and 4**.

| Milestone | Clause number |
|---|---------------|
| <p>The Commonwealth accredits the process described in <i>An Appraisal of Methods and Data used by CALM to Estimate Wood Resource Yields for the South-West RFA Region of Western Australia</i> (Turner B.J., Department of Forestry, Australian National University, December 1997) and being used by CALM in the calculation of Sustained Yield of wood products from the public native Forest and plantation estate on the understanding that the improvements recommended in that report will be addressed prior to the development of the next Forest Management Plan. Western Australia agrees that the methods and data to be used in the calculation of the Sustained Yield of wood products from the public native Forest and the Sustained Yield figures to be included in the Forest Management Plans will be reviewed by a panel of suitably qualified independent experts as part of the development of each Forest Management Plan under the CALM Act and improvements incorporated during the forest management planning process. Western Australia confirms that its current standard of inventory will be maintained and yield and planning databases and systems, as amended by this Agreement, will be enhanced.</p> | 50 |

This ongoing milestone was achieved in Period 1, Period 2 and Period 3.

The improvements recommended in *An Appraisal of Methods and Data used by CALM to Estimate Wood Resource Yields for the South-West RFA Region of Western Australia* were addressed prior to developing the FMP 2004–2013. A number of recommendations were ongoing as part of continual improvement in collecting and analysing data used to calculate the sustained yield.

A suitably qualified panel of independent experts (Ferguson *et. al.* 2001a, 2001b and 2003) reviewed the data and calculation method used to derive the sustained yield figures for the FMP 2004–2013. Where appropriate, the recommendations of the panel were incorporated into the FMP 2004–2013. The review by the panel fulfilled this milestone and facilitated the calculation of the FMP 2004–2013 sustained yield figures.

Similarly, a suitably qualified panel of independent experts reviewed the calculation of sustained yields for the FMP 2014–2023 and their report, *Calculating the Sustained Yield for the South-West Native Forests of Western Australia*⁵⁶ was published to support the environment impact assessment of the *Proposed Forest Management Plan 2014–2023* by the EPA.

⁵⁴ Australian Forestry Standard Limited (2007). fpc.wa.gov.au/forest-management/independent-certification

⁵⁵ Forest Stewardship Council A.C. (2006). fpc.wa.gov.au/forest-management/independent-certification/fpcs-management-plan-karri-forest

⁵⁶ Ferguson et al (2013). dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023

During Period 3, the inventory, silvicultural monitoring, yield and scheduling systems were maintained, and major enhancements to the inventory, yield and planning databases and systems were undertaken as part of developing and implementing the FMPs. Extensive work was undertaken to update datasets and refine the basis for calculating the sustained yields for the FMP 2014–2023. This work is summarised in the ‘Productive capacity’ chapter of the Draft FMP 2014–23, and documented in greater detail in the Sustained Yield Information Sheet series⁵⁷. Substantial enhancements included:

- A major revision of the strategic-level inventory for the mature jarrah forest, involving re-measurement of standing log volume in more than 500 ground plots
- Updated stratification of regrowth jarrah forest using photo-interpretation of high resolution digital imagery
- Calibration and application of the 3-PG physiological growth model for jarrah and karri to estimate the impacts of a drying climate on future forest growth to the year 2070, using CSIRO (2007) climate projection datasets
- Refined adjustments for future drought, *Phytophthora* dieback, bushfire and vulnerability to climate change were incorporated in yield estimates
- Development and application of a WoodstockTM model for the jarrah and karri forests to perform woodflow scheduling and calculate sustained yields.

5.3.3 Sustainability indicators

| Milestone | Clause number |
|---|---------------|
| <p>The Parties agree that the current Forest Management System will be enhanced by further developing appropriate mechanisms to monitor and review the sustainability of Forest management practices. To ensure that this occurs, in consultation with the Commonwealth, the State agrees to establish an appropriate set of sustainability indicators to monitor Forest changes. Any indicators established will be consistent with the Montréal Process Criteria (as amended from time to time), the current form of which is specified in Attachment 7, and will take into account the framework of regional indicators developed by the Montréal Process Implementation Group. Western Australia will implement those indicators which are practical, measurable, cost-effective and capable of being implemented at the regional level and will monitor them at an appropriate frequency determined in consultation with the Commonwealth.</p> | 51 |

This milestone was achieved in Period 1, Period 2 and Period 3.

A range of KPIs relevant to the FMPs have been developed to measure achievement against the management activities and objectives within those plans. In deciding on the relevant KPIs to monitor, WA considered *Australia’s Sustainable Forest Management Framework of Criteria and Indicators 2008* developed by the Montréal Process Implementation Group⁵⁸.

The suite of KPIs from the FMP 2004–2013 was reviewed and revised during the preparation of the FMP 2014–2023. The process considered the balance of the overall suite of KPIs and feedback was sought from data custodians both internal and external to Parks and Wildlife, consultant advice on biodiversity and ecosystem health and vitality reporting, input from the Conservation Commission and consideration of public comments received as part of the release of the Draft FMP 2014–2023.

⁵⁷ Department of Environment and Conservation (2012a). dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/sustained_yield_information_sheets.pdf

⁵⁸ Montreal Process Implementation Working group (2008). agriculture.gov.au/abares/forestsaustralia/framework

The revised KPIs for the FMP 2014–2023 are broader in depth and structure for the biodiversity and ecosystem health and vitality reporting. This has been achieved by linking the KPIs to the values and targets in Parks and Wildlife’s *Nature Conservation Service Regional Plans* and the proposed use of remote-sensed data at a range of scales. The KPIs have clearly defined targets and a greater focus on repeat measures to assess change in condition. Additional KPIs include:

- reporting on joint management and customary activities
- measures to track the impact of climate change on values identified by the plan and the adaptive response to climate change
- social and economic benefits from a forest products industry
- maintaining an effective strategic road network
- communicating scientific knowledge to policy makers and operational managers
- whole of forest and landscape monitoring of forest health and condition.

Attachment 7 of the WA RFA detailed the Montréal Process Criteria for the conservation and sustainable management of temperate and boreal forests. The FMPs for the south-west forest region covering this review period were developed using the Montréal Process Criteria as a framework. The response to WA RFA Clause 33 lists the criteria adopted for these plans.

Section 7 provides an overview of the suite of sustainability indicators and **Appendix 11** sets out relevant information for these indicators.

| | |
|--|----------------------|
| Milestone | Clause number |
| Development of indicators, and collection of results for those indicators which can be readily implemented, will be completed in time to enable reporting during the first five-yearly review of this Agreement. | 52 |

This milestone was achieved in Period 1, Period 2 and Period 3.

Further information in reporting of the suite of sustainability indicators has been provided in response to **Clause 46** and in **Section 7**.

5.3.4 Private land

| | |
|--|----------------------|
| The Parties reaffirm their commitments made in the NFPS to the conservation and management of the private Forest estate. The Parties note that Western Australia has a management system in place that regulates the clearance of native Forest on Private Land. | Clause number |
| | 53 |

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

WA continues to manage native vegetation on private lands through the clearing provisions of the EP Act and associated regulations. With the creation of Parks and Wildlife in 2013, it became the department responsible for the continued delivery of those programs that, through partnerships between private landowners, government and other agencies, help protect the natural values of native forests and bushland located outside the conservation reserve system.

Further detail on the status of forest management on private lands is provided in **Appendix 4**.

| | |
|--|----------------------------|
| Western Australia will continue to encourage private Forest owners to ensure that their management operations are consistent with the appropriate Codes and to have in place adequate mechanisms to protect nature conservation, heritage, catchment values and sustainable wood production. | Clause number 54 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

*The Code of Practice for Timber Plantations in WA 2006*⁵⁹ was assessed by CSIRO in 2010 against the *Forest Practices Related to Wood Production in Plantations: National Principles* (March 1996)⁶⁰. This voluntary Code of Practice, which applies to public and private plantation growers on a range of land tenures, was considered to meet the intent of the National Principles which cover a range of environmental and heritage values along with operational activities.

The FPC and Parks and Wildlife continue to support and encourage private forestry initiatives through participation in workshops and field days, and providing information and practical, on-ground assistance to farmers on integrated farm planning, species selection, plantation establishment and silviculture.

Appendix 4 details how WA manages practices on the private forest estate.

| | |
|--|----------------------------|
| Western Australia will adopt the strategy and principles outlined in Attachment 6 in relation to Private Land. | Clause number 55 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Attachment 6 of the WA RFA, *Protection and Management of Forests on Private Lands*, outlined a range of strategies and mechanisms that encouraged the protection of the environmental values of forests on private land and encouraged private forest management through various instruments and mechanisms.

Appendix 4 details how WA instruments and mechanisms undertake the protection and management of the private forest estate.

5.4 *Threatened flora and fauna*

| | |
|--|----------------------------|
| The Parties agree that the CAR Reserve System, actions under the <i>Wildlife Conservation Act 1950</i> (WA) and the <i>Endangered Species Protection Act 1992</i> (Cwth), and the Forest Management Systems as amended by this Agreement, provide for the protection of rare or threatened flora and fauna species and ecological communities. | Clause number 56 |
|--|----------------------------|

This ongoing commitment was achieved in part in Period 1, Period 2 and Period 3.

The CAR reserve system and WA's management of forest areas (in line with Clause 48, Forest Management System) provides for the protection of threatened flora and fauna, and ecological communities, including those listed at the national level and fauna designated as migratory species.

As at 2014, **Appendix 1** details the level of reservation of forest ecosystems and old-growth forests within those forest ecosystems in the CAR reserve system and informal reserves within the WA RFA region. This is

⁵⁹ Forest Industries Federation (WA) Inc (2006). planningplantations.com.au/assets/pdfs/management/regulation/wa/CodeOfPracticeForTimberPlantationsWA2006.pdf

⁶⁰ Ministerial Council on Forestry, Fisheries and Aquaculture (1995). agriculture.gov.au/forestry/australias-forests/plantation-farm-forestry/principles

an update of the original figures in the 1999 WA RFA and the figures in the 2013 combined first and second five-yearly review.

Parks and Wildlife has approved corporate policies⁶¹ which outline the principles and standards for managing conservation areas and the CAR reserve system. A selection of the key policy statements include:

- Management of *Phytophthora* disease: Corporate policy statement 3
- Management of pest animals: Corporate policy statement 12
- Weeds management: Corporate policy statement 14
- Terrestrial conservation reserve system: Corporate policy statement 31
- Conserving threatened species and communities: Corporate policy statement 35
- Identification and management of wilderness and surrounding areas: Corporate policy statement 62.

The WC Act remains WA’s primary biodiversity legislation. The Commonwealth’s EPBC Act works in partnership with the WC Act to provide for the legislative protection of threatened flora, fauna and ecological communities.

Preparation of WA’s new biodiversity legislation continued during Period 3 and is a key area of focus for Parks and Wildlife. Although outside the scope of the third five-yearly progress reporting, the new Biodiversity Conservation Bill was introduced in the WA Parliament in November 2015⁶².

| | |
|--|----------------------------|
| Where threatened species restricted to Western Australia are listed under both the <i>Wildlife Conservation Act 1950</i> (WA) and the <i>Endangered Species Protection Act 1992</i> (Cwth), any new or revised Recovery Plans will be jointly prepared and funded under relevant programs and implemented co-operatively by the Parties to meet the requirements of both Acts. Where the Recovery Plans, Interim Recovery Plans or Regional and District Threatened Flora Management Plans meet the requirement of the <i>Endangered Species Protection Act 1992</i> (Cwth), the Commonwealth intends to consider their adoption under Section 46 of the <i>Endangered Species Protection Act 1992</i> (Cwth). | Clause number 57 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The *Wildlife Conservation Act 1950* provides for the listing of protected fauna and flora. The State-wide protected fauna and flora lists are published on the Parks and Wildlife website⁶³. The listing of a species and the category used helps to prioritise recovery planning and management, as well as allocation of resources. WA had the lead role for preparing state-based recovery plans for protected flora and fauna. These plans may be adopted at a national level where threatened species are listed under the EPBC Act, and where there is a decision to have a national recovery plan⁶⁴.

Appendix 5 lists threatened fauna and a flora species found in the WA RFA region, the associated conservation standing of these species to 2014 as declared under the WC Act or EPBC Act, and status of recovery plans (national, state or interim). As at 2014, 27 protected fauna species (one extinct) and 91 protected flora species are found in the WA RFA region. For Period 3, no additions have been made to the lists, although two flora species have been removed.

⁶¹ Department of Parks and Wildlife (2013c) dpaw.wa.gov.au/about-us/36-policies-and-legislation
⁶² Government of Western Australia (2015). mediastatements.wa.gov.au/Pages/Barnett/2015/11/New-biodiversity-laws-introduced-to-Parliament.aspx
⁶³ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities
⁶⁴ Department of the Environment and Energy (n.d.). environment.gov.au/cgi-bin/sprat/public/sprat.pl

In cases where the threatened species occurs in more than one state or territory, funds have been made available both to, and by, other states and territories and the Australian Government to implement recovery plans. WA collaborates with the Australian Government to prepare recovery plans for species listed as threatened under the Commonwealth's EPBC Act and the WC Act. Recovery plans set out actions needed to stop the decline and support the long-term recovery of threatened species.

As part of the implementation of priority actions for recovery of threatened species and ecological communities in WA, the Australian Government provided funding through a range of programs such as Caring for Our Country and the National Landcare Programme⁶⁵. WA also provides funding to implement recovery planning.

Threatened species recovery plans (including replacement recovery plans) approved by WA and adopted at a national level under the EPBC Act⁶⁶ for Period 3 are:

Fauna

- Noisy scrub-bird (*Atrichornis clamosus*)*
- Carnaby's black cockatoo (*Calyptorhynchus latirostris*)
- Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)
- Baudin's cockatoo or forest black cockatoo (*Calyptorhynchus baudinii*)
- Chuditch (*Dasyurus geoffroii*)
- Black-flanked rock-wallaby (*Petrogale lateralis lateralis*)
- Western ground parrot (*Pezoporus wallicus flaviventris*)*
- Western swamp tortoise (*Pseudemydura umbrina*)
- Western Whipbird (western heath subsp) (*Psophodes nigrogularis nigrogularis*)*
- Quokka (*Setonix brachyurus*)

Flora

- *Banksia nivea* subsp. *Uliginosa*
- *Caladenia bryceana*
- *Caladenia huegelii*
- *Caladenia procera*
- *Caladenia winfieldii*
- *Conospermum undulatum*
- *Darwinia apiculata*
- *Drakaea elastica*
- *Grevillea brachystylis* subsp. *grandis*
- *Grevillea rara*

* Recovery plans were developed in Period 3 and were adopted in 2014, outside the current reporting period.

The following threatened species interim recovery plans (including replacement recovery plans) were approved by WA for Period 3. Not all were considered for adoption under the EPBC Act as not all were required to have a recovery plan.

⁶⁵ National Landcare Programme (n.d.). <http://www.nrm.gov.au/>

⁶⁶ Department of the Environment and Energy (n.d.). environment.gov.au/biodiversity/threatened/recovery.html

Fauna

- Western trout minnow (*Galaxias truttaceus hesperius*)⁺⁺
- White-bellied frog (*Geocrinia alba*)
- Orange-bellied frog (*Geocrinia vitellina*)
- Western ringtail possum (*Pseudocheirus occidentalis*)

Flora

- *Andersonia annelsii*⁺
- *Caladenia lodgeana*⁺⁺
- *Cryptandra congesta*⁺
- *Drakaea confluens*
- *Grevillea acropogon*⁺
- *Grevillea althoferorum* subsp. *fragilis*
- *Grevillea fuscolutea*⁺
- *Rhacocarpus rehmannianus* var. *webbianus*⁺
- *Stylidium semaphorum*⁺
- *Thelymitra dedmaniarum*
- *Trithuria occidentalis* (previously *Hydatella dioica*)⁺⁺
- *Verticordia apecta*⁺⁺
- *Verticordia fimbriolepis* subsp. *Fimbriolepis*⁺⁺

⁺ Not listed under EPBC Act.

⁺⁺ Recovery plan not required under EPBC Act but species is covered by an approved conservation advice.

| | |
|--|----------------------------|
| Where threatened ecological communities and threatening processes restricted to Western Australia are listed under the <i>Endangered Species Protection Act 1992</i> (Cwth) any new or revised Recovery Plans or Threat Abatement Plans will be jointly initiated, prepared, funded under existing arrangements, agreed and implemented co-operatively by the Parties to meet statutory requirements. Where the Recovery Plans meet the requirement of the <i>Endangered Species Protection Act 1992</i> (Cwth), the Commonwealth intends to consider their adoption under Section 46 of the <i>Endangered Species Protection Act 1992</i> (Cwth). | Clause number 58 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

WA has been identifying and listing threatened ecological communities (TECs) since 1994⁶⁷. Ecological communities with insufficient information available to be considered a threatened ecological community, or which are rare but not currently threatened, are placed on the Priority list and referred to as priority ecological communities.

While there has been no change to the TECs list in the WA RFA region since the combined first and second five-yearly progress report, recovery plans or conservation advice for the following threatened ecological

⁶⁷ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities

communities, and threat abatement plans for threatening processes, were approved during the reporting period:

- Aquatic root mat community number 1 of caves of the Leeuwin Naturaliste Ridge
- Aquatic root mat community number 2 of caves of the Leeuwin Naturaliste Ridge
- Aquatic root mat community number 3 of caves of the Leeuwin Naturaliste Ridge
- Aquatic root mat community number 4 of caves of the Leeuwin Naturaliste Ridge
- Assemblages of plants and invertebrate animals of tumulus (organic mound) springs of the Swan Coastal Plain
- Claypans of the Swan Coastal Plain
- *Corymbia calophylla* - *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain
- *Corymbia calophylla* - *Kingia australis* woodlands on heavy soils (community type 3a)
- Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia
- Scott River ironstone association
- Shrublands on southern Swan Coastal Plain ironstones
- Shrublands and woodlands of the eastern side of the Swan Coastal Plain
- Shrublands and woodlands on Muchea Limestone.

Approved State only

- Clay pans of the Swan Coastal Plain (Swan Coastal Plain community types 7, 8, 9 and 10a) and Clay pans with mid-dense shrublands of *Melaleuca lateritia* over herbs.

*Threat Abatement Plans*⁶⁸

During the reporting period, the Australian Government had in place the following Threat Abatement Plans establishing a national framework to guide and coordinate Australia’s response to the impacts of foxes, feral cats, feral pigs and *Phytophthora* dieback disease:

- Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* – 2014
- Threat abatement plan for predation by European red fox – 2008. This plan was reviewed during the review period and a varied plan is anticipated post-review period
- Threat abatement plan for predation by feral cats – 2008. The plan was reviewed during the review period and a varied plan was made on 13 July 2015
- Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs – 2005. The plan was reviewed in 2011. The plan sunsetted on 1 October 2015 but it is anticipated that a new plan will be made by the WA Environment Minister.

| | |
|---|----------------------------|
| Recovery Plans to meet statutory requirements under the <i>Wildlife Conservation Act 1950</i> (WA) and the <i>Endangered Species Protection Act 1992</i> (Cwth) and extending beyond Western Australia will be prepared jointly with Western Australia and other relevant governments, and be incorporated in the agreed Interim Recovery Plan or Recovery Plan as the Western Australian component of the Recovery Plan. | Clause number 59 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

⁶⁸ Department of Environment and Energy (n.d.). <https://www.environment.gov.au/biodiversity/threatened/threat-abatement-plans/approved>

The following cross-jurisdictional threatened species recovery plan for the woylie *Bettongia penicillata ogilbyi* (fauna) was approved during the reporting period (2012)⁶⁹.

| | |
|---|----------------------------|
| The Parties will continue to consult on the listing of threatened species, ecological communities and threatening processes, and the preparation of Recovery Plans, recognising that priorities can change in the light of new information. The current status of recovery planning/actions for threatened flora and fauna are outlined in Attachment 8 (of the RFA). | Clause number 60 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

In 2009, an independent review of the EPBC Act - *The Australian Environment Act: Report of the Independent review of the Environment Protection and Biodiversity Conservation Act 1999*⁷⁰ was tabled in the Australian Parliament. An area of identified reform was to reduce and simplify the regulatory burden, including for the Australian, State and Territory governments to move to a single national list of threatened species through accreditation of state and territory processes for listing endemic species. On 12 November 2010, as a precursor to implementing this recommendation, the WA Government signed a Memorandum of Understanding (MoU) with the Australian Government for the joint referral of new threatened species listings to facilitate the timely listing by the other jurisdiction. The MOU ran to November 2013 during which time 113 listing amendments were referred to the Australian Government for updating of the EPBC Act listing, of which 12 resulted in amendments to the EPBC Act. The remaining 101 listing amendments are with DoEE for assessment.

In 2011, the Council of Australian Governments (COAG) initiated a reform agenda for national environment regulation, addressing four key themes, including developing a harmonised national list of threatened species and ecological communities.

In 2014, the Commonwealth, state and territory Environment Ministers agreed to establish a single national threatened species and communities list for each state and territory. A working group was formed at the end of 2014 to develop a common assessment method for the listing of threatened species and communities, and develop a MoU between the Commonwealth, state and territory Environment Ministers for an agreed approach to the listing of threatened species and communities.

Although outside the reporting period, the MoU was signed by the WA and Australian Environment Ministers in late 2015 and will lead to a single threatened species list⁷¹.

As at 2014, **Appendix 5** provides a summary of the status of threatened flora and fauna species declared under the WC Act and the EPBC Act including the status of recovery plans.

| | |
|--|----------------------------|
| The Parties reaffirm their commitment that Recovery Plans for species in the South-West Forest Region of Western Australia which have already been prepared will have actions completed or significantly advanced in accordance with the Recovery Plans. | Clause number 61 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

⁶⁹ Yeatman, G. Groom, C. (2012). environment.gov.au/resource/national-recovery-plan-woylie-bettongia-penicillata-ogilbyi

⁷⁰ Department of the Environment, Water, Heritage and the Arts (2009). environment.gov.au/resource/australian-environment-act-report-independent-review-environment-protection-and

⁷¹ Government of Western Australia (2015). mediastatements.wa.gov.au/Pages/Barnett/2015/11/Single-threatened-species-list-to-cut-red-tape.aspx

DoEE reviewed the implementation of actions from a number of recovery plans in consultation with Parks and Wildlife. Species reviewed within the WA RFA region were:

*Fauna*⁷²

- Gilbert’s potoroo (*Potorous gilbertii*)
- Western swamp tortoise (*Pseudemydura umbrina*)

*Flora*⁷³

- *Grevillea althoferorum* subsp. *fragilis*
- *Banksia squarrosa* subsp. *argillacea*
- *Lambertia orbifolia* subsp. *orbifolia* ms
- *Verticordia plumosa* var. *pleiobotrya*
- *Lasiopetalum pterocarpum*
- *Rulingia* sp. Trigwell Bridge (R Smith s.n. 20.6.89)

| | |
|--|----------------------------|
| The Parties note and Western Australia reaffirms its commitment to implement plant disease, weed and feral animal control strategies, including monitoring and evaluation procedures, in accordance with Western Australia’s Forest Management System. | Clause number 62 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Parks and Wildlife’s Forest and Ecosystem Management Division is responsible for forest management and the State-wide management of plant diseases, invasive pests and weeds.

Current priorities which have a bearing on the WA RFA region include:

- Provision of planning and technical support services to the FPC to provide for a sustainable forest products industry. Services such as the preparation of annual harvest plans, field surveys for old-growth forest and *Phytophthora* dieback disease mapping are provided under a service agreement to maximise access to expertise and systems within the division
- Review of declared species (in conjunction with Commonwealth, State agencies and other organisations) to ensure priority threats to WA’s environment are identified and measures are in place to minimise the risk of their introduction and spread. Declared species are plants or animals that have the potential to cause harm and threaten native biodiversity, and have control requirements within the State
- Coordinating the prioritisation and field delivery of programs to control invasive pests (including foxes, feral cats, and pigs), weed species and plant diseases, and the *Western Shield* program
- Preparation of a framework for recreational hunting groups to participate in pest animal control programs to improve conservation outcomes
- Undertaking an annual field survey program to map the occurrence of *Phytophthora* dieback disease in native vegetation prior to disturbance operations, in order to inform measures to prevent the spread of the disease. Approximately 20,000ha of vegetation is intensively mapped each year across the State.

⁷² Department of Parks and Wildlife (2014). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/197-approved-recovery-plans

⁷³ Department of the Environment and Energy (n.d.) environment.gov.au/cgi-bin/sprat/public/publicshowallrps.pl (except for *Banksia* and *Verticordia*)

Western Shield is Parks and Wildlife's flagship wildlife conservation program, and one of the largest ever undertaken in Australia. It involves the deployment of around one million baits each year across more than three million hectares of Parks and Wildlife-managed land from the Pilbara, through the south-west forests, to east of Esperance. By controlling introduced predators like foxes and feral cats, it aims to return the balance and mix of native animals to as close to pre-European levels as possible in selected areas in WA. The main focus is on small and medium-sized mammals and some ground-nesting birds and reptiles, including the woylie, Gilbert's potoroo, chuditch, numbat and western ground parrot.

A new feral cat bait *Eradicat*® was developed by Parks and Wildlife. The bait was successfully trialled in WA's semi-arid and south coast regions. It was approved for operational use by the Australian Pesticides and Veterinary Medicines Authority in December 2014.

In 2014, Parks and Wildlife revised or prepared new corporate policies relating to weed management, pest animal management and *Phytophthora* dieback management⁷⁴. To support the implementation of these policies, priority lists reflecting each region's weed and pest animal management focus have been developed. The lists assist with allocating resources, implementing management, and targeting surveillance and monitoring.

Biosecurity measures to prevent the introduction of new invasive species and control outbreaks are also essential to conserving biodiversity. In May 2013, the *Biosecurity and Agricultural Management Act 2007* (BAM Act) came into effect. The BAM Act replaces 16 older Acts, modernising biosecurity legislation and removing inconsistency between previous legislation.

Under the BAM Act and associated regulations, biosecurity is administered by the Department of Agriculture and Food Western Australia (DAFWA). Parks and Wildlife works with DAFWA through the Biosecurity Senior Officers Group (BSOG), which also has membership from Department of Fisheries, Department of Defence (C'wlth) and the FPC. This group aims to achieve a whole-of-government approach to the State's biosecurity. This includes clarifying the roles and responsibilities of key stakeholders and deploying resources to work towards an integrated approach across tenure and between land managers.

In 2013, BSOG initiated the preparation of a State biosecurity strategy. The purpose of the strategy is to emphasise the importance of shared responsibility for the management of biosecurity in WA and outlines the roles for government, industry and community.

During Period 3, a contingency plan for WA for myrtle rust was in preparation. While outside the timing of the progress report, the *Biosecurity Plan for Myrtle Rust (Eucalypt rust complex) in Western Australia: Threat Specific Contingency Plan*⁷⁵ was finalised in late 2015. The plan provides background information on the disease biology and available control measures to assist with preparedness for an incursion into WA of myrtle rust⁷⁶.

WA contributed to the activities of the then Research Working Group 7 (RWG7) under the Forestry and Forest Products Committee until mid to late 2011. Following the COAG restructure in 2011, the activities formerly undertaken by RWG7 were taken over by a Subcommittee on National Forest Health (SNFH) under Plant Health Australia in November 2012. Both RWG7 and SNFH produced an *Annual Pest, Disease and Quarantine Status Report for Australia and New Zealand* during the review period. The purpose of the report was to communicate to government the annual statement of forest pest and disease conditions and quarantine situation in Australia and New Zealand. SNFH has now been incorporated into the Subcommittee on National Plant Health Surveillance.

⁷⁴ Department of Parks and Wildlife (2013c). dpaw.wa.gov.au/about-us/36-policies-and-legislation

⁷⁵ Any further information or requests should be directed to the WA Department of Agriculture and Food website agric.wa.gov.au or by email to info@agric.wa.gov.au

⁷⁶ Department of Agriculture and Food (n.d.). agric.wa.gov.au/plant-biosecurity/myrtle-rust-western-australia?nopaging=1

| | |
|--|----------------------------|
| The Parties note that and Western Australia reaffirms its commitment to maintain the flora and fauna databases, enhanced through data collected as part of the Comprehensive Regional Assessment, for use in the management and protection of rare and threatened flora and fauna. | Clause number 63 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Parks and Wildlife continues to maintain databases which collect information relating to flora and fauna populations and distributions. These include:

- FloraBase⁷⁷ captures descriptions and images of species, and holds information on location, tenure, habitat, population size and management issues
- The Threatened and Priority Fauna Database contains fauna observation records, including fauna listed as threatened under the WC Act or included on the Priority List
- The Threatened and Priority Flora Database (DEFL) contains flora observation records, including flora listed as threatened under the WC Act or included on the Priority List
- The Fauna Survey database captures scientific fauna licence returns data from environmental consultants and other licensees. The information captured in these datasets included details on taxon, locality, some habitats and observations
- NatureMap⁷⁸ captures information from the Parks and Wildlife flora and fauna databases, the WA Herbarium and WA Museum collection records and produces maps, lists and reports of WA's flora and fauna diversity.

DEFL was significantly upgraded during the reporting period and now has greater functionality in recording threats and management actions. Additional functionality has also been added for monitoring the response of threatened flora to fire.

For Period 3, 366 threatened flora occurrences had population monitoring data gathered and entered into DEFL and 6238 threatened fauna records added to the threatened fauna database within the WA RFA region.

5.5 *The CAR reserve system*

| | |
|--|----------------------------|
| The Parties agree that the primary function of the CAR Reserve System is to ensure the conservation and protection of environmental and heritage values. | Clause number 64 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The primary functions of the CAR reserve system are supported through the management activities and continued implementation of the FMP 2004–2013 and were carried forward into the FMP 2014–2023.

Information on the status of the CAR reserve system is provided in clauses 65 to 67.

⁷⁷ Department of Parks and Wildlife (n.d.). florabase.dpaw.wa.gov.au/

⁷⁸ Department of Parks and Wildlife (n.d.). naturemap.dpaw.wa.gov.au/

| | |
|--|------------------------------------|
| <p>The Parties agree that the CAR Reserve System established in accordance with this Agreement will comprise:</p> <ul style="list-style-type: none"> (a) On Public Land as described in Attachment 1 and Map 1: <ul style="list-style-type: none"> (i) Formal Reserves; and (ii) CAR Informal reserves as described in Attachment 1; and (b) On Private Land as described in Attachment 1 : <ul style="list-style-type: none"> (i) lands with CAR Values protected under secure management arrangement by agreement with private landholders; (c) On State-owned freehold land and Commonwealth land as described in Attachment 1 : <ul style="list-style-type: none"> (i) lands with CAR Values protected under secure management arrangement by the landholders or managing authority. | <p>Clause number 65</p> |
|--|------------------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Significant areas have been added or are proposed to be added to the CAR reserve system in the WA RFA region. These were detailed in Appendix 2 of the FMP 2004–2013 and updated in Appendix 1 of the FMP 2014–2023. These areas give effect to the CAR reserve system.

Appendix 1 of this report provides an overview of the areas reserved for conservation and protection of environmental and heritage values – the area and percentage of forest ecosystems and old-growth forest reserved and proposed.

| | |
|--|------------------------------------|
| <p>The Parties agree that the CAR Reserve System established under this Agreement meets the JANIS Reserve Criteria as defined in Clause 2.</p> | <p>Clause number 66</p> |
|--|------------------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The CAR reserve system meets the JANIS Reserve Criteria. This is supported through the implementation of the existing status of the CAR reserve system and the conservation management activities of the FMP 2004–2013 and the FMP 2014–2023.

Appendix 1 of this report provides an overview, as of December 2014, of the areas reserved for conservation and protection of environmental and heritage values, percentage of forest ecosystems reserved and proposed and existing reserves of old-growth forest.

| | |
|---|------------------------------------|
| <p>The Parties agree that changes to the CAR Reserve System will only occur in accordance with this Agreement. The Parties will seek to avoid a net deterioration in the protection of identified CAR values at the regional scale. Proposed changes to the boundaries of the CAR Reserve System will be made publicly available.</p> | <p>Clause number 67</p> |
|---|------------------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The CAR reserve system, as outlined in Attachment 1 of the WA RFA, was enhanced by 187,250ha of additional reserves and accounted for in the reserve design process, undertaken for the development of the FMP 2004–2013. The reserves and additional areas identified in the FMP 2004–2013 were legislated in three reserves acts in 2004.

Parks and Wildlife has a standard process for undertaking and recording variations made to the CAR reserve system. There was no net deterioration in the protection of CAR values at the regional scale during this review period. **Appendix 1** provides an overview of the status of the CAR reserve system in the WA RFA area, including reservation of native forest ecosystems, old-growth forest and informal reserves.

Reserve areas from the FMP 2004–2013 were carried forward into the FMP 2014–2023. About 4000ha is proposed for addition to the Whicher National Park near Busselton. This recognises the floristic diversity of the area and Whicher Scarp as a new, distinct forest ecosystem which contributes to the CAR reserve system.

Proposed changes to the CAR reserve system are made publicly available through the preparation of forest management plans. During Period 3, proposed changes were published in 2012 in the Draft FMP 2014–2023.

| | |
|---|------------------------------------|
| <p>The Parties note that a reconfiguration of the stream reserve system has been recommended by the Western Australian Water and Rivers Commission. This may form part of the next Forest Management Plan which will be scientifically assessed by the Environmental Protection Authority. While that reconfiguration, in its current form is expected to be neutral in its effect on timber resources, the Parties will ensure that security of access to resources for industry is maintained following implementation of any new stream reserve configuration.</p> | <p>Clause number 68</p> |
|---|------------------------------------|

This commitment was achieved in Period 1, Period 2 and Period 3.

While this commitment has been finalised, work relevant to the management of river and stream zones continues to be reviewed and incorporated into forest practices, where relevant. **Appendix 7** provides more detail on work carried out through research and performance monitoring which has contributed to adaptive management in south-west forests.

| | |
|--|------------------------------------|
| <p>The Parties agree that best endeavours will be used to maintain the levels of protection of National Estate Values in a regional context, however, minor changes to the levels of protection of individual values may occur as a result of changes to the CAR Reserve System.</p> | <p>Clause number 69</p> |
|--|------------------------------------|

This ongoing commitment was achieved during Period 1, Period 2 and Period 3.

As indicated in the response to Clause 21, the RNE was established in the 1970s when heritage protection was not coordinated nationally. In 1997, the Council of Australian Governments agreed to coordinate heritage protection and remove overlap, with the Australian Government consequently freezing the RNE and creating the National Heritage List and the Commonwealth Heritage List (for places that were the appropriate responsibility of the Australian Government).

During Period 3, the Parties committed to the management of ‘national estate values’ as the term is still used in the *Regional Forest Agreement Act 2002* to describe an RFA. The term is interpreted to mean values of those places, being components of the natural or cultural environment in Australia, that have been assessed and recognised for their aesthetic, historic, scientific or social significance or other special value for future generations as well as for the present community by the Australian or WA government. This may include components of the natural or cultural environment that are now listed on the National Heritage List, the Commonwealth Heritage List or WA Heritage Register.

5.5.1 Action to establish and manage reserves

| <i>The State undertakes to:</i> | Clause number |
|---|---------------|
| (a) manage the areas in the CAR Reserve System identified in Attachment 1, with the exception of Commonwealth owned or leased land, on the basis outlined in Attachment 1 and in accordance with the objectives set out in relevant classifications in Attachment 9; | 70 |
| Milestone | |
| (b) within one year of the date of this Agreement, subject to section 9(2) of the CALM Act, establish new formal reserves under the Land Administration Act 1997 (WA) where: | |
| (i) they were proposed in the Forest Management Plan 1994-2003; and | |
| (ii) they are proposed as formal reserves under the <i>Land Administration Act 1997</i> (WA) in this Agreement, excluding those that will be established as formal reserves under section 62 of the CALM Act and which may later progress to formal reserves under the <i>Land Administration Act 1997</i> (WA); | |
| Milestone | |
| (c) within 6 months of the date of this Agreement, classify all proposed Formal reserves (specified in Attachment 1) other than those in (b) above as “Forest Conservation Zones” under Section 62 of the CALM Act, where: | |
| (i) these areas are State forest or timber reserves; | |
| (ii) this will be the final classification; or | |
| (ii) this will be an interim classification prior to classification under the <i>Land Administration Act 1997</i> (WA); | |
| Milestone | |
| (d) within three months of the date of this Agreement initiate the State processes for creation of new formal reserves proposed to be classified under the <i>Land Administration Act 1997</i> (WA), as specified in Attachment 1; | |
| Milestone | |
| (e) introduce an amendment to the CALM Act into the Western Australian Parliament by 31 December 1999 to require the approval of both Houses of Parliament to revoke Forest Conservation Zones in State Forest which will be created under Section 62 of the CALM Act, and use its best endeavours to secure the enactment of the amendment introduced; and | |
| Milestone | |
| (f) establish the proposed new informal reserves, as identified in Attachment 1, in the next Forest Management Plan. | |

The milestones with regard to Clauses 70(a) and (d) to (f) were achieved in Period 1, Period 2 and Period 3.

The milestones with regard to Clauses 70(b) and 70(c) were achieved outside the proposed timeline in Period 1, Period 2 and Period 3.

Significant areas were added to the CAR reserve system in the WA RFA region. These areas were detailed in Appendix 2 of the FMP 2004–2013, *Reserve proposals*. The FMP 2004–2013 gave effect to the CAR reserve system and **Appendix 1** of this report provides a comprehensive overview of the area reserved, percentage of forest ecosystems reserved, and proposed and existing reserves of old-growth forest.

The priority was to progress the changes to the formal conservation reserve system. Delays in progressing changes in tenure to the formal reserve system came from a number of sources, including resolving native title requirements, removing areas from the RNE subject to the creation of new reserve areas in leases within state agreement acts and negotiating relinquishing titles held by other agencies and groups to areas proposed for inclusion in the reserve system.

Nonetheless, where possible Parks and Wildlife manages land according to the category proposed in the FMP 2014–2023.

5.6 *Industry development*

| | |
|--|----------------------------|
| The Parties agree that State Forest outside the CAR Reserve System is available for timber harvest in accordance with the Forest Management Plan and the undertakings of this Agreement. | Clause number 71 |
|--|----------------------------|

This ongoing commitment was achieved in part in Period 1, Period 2 and Period 3.

WA confirmed that the area of State forest and timber reserves in the south-west forest region outside formal reserves, informal reserves and fauna habitat zones are available for wood production in accordance with the FMP 2004–2013 and FMP 2014–2023. Proposed additions to the CAR reserve system under each FMP are not available for timber harvesting as Parks and Wildlife manages these areas to the proposed reserve category.

Within the portions of State forest and timber reserves that are available for wood production, WA ensured that there was sufficient area to source the allowable cut allocated under each FMP. Clauses 72 and 75 of the WA RFA were not satisfied as a result of implementing the reserve proposals that resulted in a reduced area of native forest available to the forest products industry.

| | |
|--|----------------------------|
| The Parties agree that any changes to State Forest or Timber Reserves available for timber harvesting will only occur in accordance with this Agreement and will not lead to deterioration in the Sustained Yield in terms of volume, species and quality. | Clause number 72 |
|--|----------------------------|

This ongoing commitment was not achieved in Period 1, Period 2 or Period 3.

The area of native forest available for timber harvesting and subsequent reduction of the available resource under the FMP 2004–2013 was carried forward in the FMP 2014–2023. A detailed overview of the policy changes that brought this about was documented in the combined first and second five-year progress report for 1999 to 2009 (July 2013). Changes to key policy settings included the:

- end to harvesting in old-growth karri and tingle forest after 2003
- end to large scale clear felling in karri forest in 2004
- addition of about 500,000ha to the conservation reserve system in the south-west
- end of harvesting in all old-growth forest.

The changes to sustained yield settings and area of native forest available to the forest products industry were accepted by the Parties at the time of the combined first and second five-year progress report.

| | |
|--|------------------------------------|
| <p>The Parties acknowledge that Forest-based industries dependent upon the South-West Forest Region make a significant contribution to both the regional and State economies and are an essential component of many communities in the Region. The Parties intend that this Agreement will enhance opportunities for further growth and development of Forest-based industries dependent upon the South-West Forest Region and provide long-term stability for these industries. The Parties therefore acknowledge that this Agreement must provide enhanced security of access to resources for Forest-based industry for the life of the Agreement. The Agreement will facilitate industry development including:</p> <ul style="list-style-type: none"> (a) new investment, plantation development, reforestation, downstream processing, value-adding and jobs growth in wood-based manufacturing industries; (b) further introduction of new technology, enhanced utilisation of regrowth timber for sawn products, thinning of regrowth forests and more efficient utilisation of residual wood, including for the production of charcoal; (c) investment in Mineral and Petroleum Exploration, Mining and Mineral processing and Petroleum Operations; and (d) tourism and recreation investment. | <p>Clause number 73</p> |
|--|------------------------------------|

This commitment was achieved in part in Period 1, Period 2 and Period 3.

Forest and wood products industry

For Period 3, there was no new investment in plantation expansion following the collapse of companies using Managed Investment Schemes for new plantation development. Information from *Australian plantation statistics 2016*⁷⁹ shows that in 2008–09 WA plantations totalled 425,100ha. This declined by 41,700ha (9.8 per cent) in 2014–15, a reduction of 35,400ha in hardwood and 3,070ha in softwood to 276,400ha of hardwood and 97,900ha of softwood. Investment in existing plantations included the FPC replanting plantations on State-owned land consistent with government policy.

While there have been few new investments in plantation expansion, existing businesses have invested in upgrading facilities to improve operational efficiencies. This includes investment in chipping technology to recover lower grade timber and improve sawing technology for logs with sweep. A number of trials into peeling of regrowth karri and jarrah have been conducted resulting in one customer routinely using karri in laminated veneer lumber.

The FPC continued to work on enhancing opportunities for further growth and development of wood-based industries and regional communities. This was achieved by working with industry groups to help achieve greater value from the wood available through optimising harvesting and primary conversion processes. The reduction in size and quality of native logs resulted in a focus on maximising the recovery of products within logs through improved selection and segregation in the field, distribution logistics and enhancements to harvest planning processes.

The FPC continued membership of and contribution to associations involved with research across Australia such as Forest and Wood Products Australia including programs to optimise transport, assess wood quality and utilise lower grade resource. The programs had a strong emphasis on delivering information back to the forest industries. In Period 3, the FPC continued to engage with industry, including as a member of the Forest Industry Federation of Western Australia, Forest and Wood Products Australia and the Australian Forest Products Association.

⁷⁹ ABARES (2016)
http://www.agriculture.gov.au/abares/publications/display?url=http://143.188.17.20/anrdl/DAFFService/display.php?fid=pb_aplns_d9abfe20160816.xml

The FPC continued to support industry events and education. Initiatives included:

- producing a suite of information on WA native forest timbers and sustainability
- supporting the establishment of the Forest Learning website for schools, which provides insights into how Australian forests play a vital role in the provision of forest and wood products and environmental services for society
- forest biosecurity seminars for local community groups
- participating and promoting the industry at the annual Wood Show held at the Claremont showgrounds
- supporting the annual Western Australian and Australian Furniture of the Year Awards.

Plantation development and reforestation

In January 2010, changes to policy in relation to the government's role in forestry were announced. These changes were due to the FPC's reducing financial viability arising from a number of factors including reduced log sales, the absence of development of a carbon market and the end of funding for the strategic tree farming initiative. As a consequence of this, together with the economic downturn in the timber industry, a major review of FPC objectives and operations was undertaken which led to the FPC focusing on the economic sustainability of its core functions in the native forest, softwood plantation and wild WA sandalwood sectors.

Extractive industries

Mining and State Agreement legislation takes precedence over the CALM Act, but concurrence of the WA Environment Minister was required for mining operations regulated under the *Mining Act 1978* to proceed on most Parks and Wildlife-managed public land tenures, including the areas covered by the WA RFA. In addition, all mining and associated development projects were required by the relevant State Government regulatory agencies to undergo processes to assess new applications that address environmental, heritage and native title issues. State Agreement Acts (SAA) were in force for the major mining projects operating within the WA RFA region (mostly State forest), covering the bauxite and alumina operations of Alcoa and Worsley⁸⁰, and coal mining operations of Griffin and Premier Coal. The *Mining Act 1978* regulated other mineral resource extraction activities and mineral exploration. Petroleum (includes gas) exploration and production activities within State land and waters were authorised under the *Petroleum Act 1967*. The Department of Minerals and Petroleum (DMP) is the lead regulator and decision-making authority for non-SAA projects. Extractive industry proposals determined to be environmentally significant underwent environmental impact assessment under Part IV of the EP Act.

Approximately 1000ha⁸¹ or 0.07 per cent of State forest and timber reserves per annum were subject to mining operations that included clearing, principally for extraction of bauxite (Darling Scarp north from Collie), coal (east of Collie) and gold (near Boddington). SAAs and mineral and petroleum titles covered more than 40 per cent of State forest and timber reserves, with 95 per cent of this area within Alcoa and Worsley's SAA areas.

DMP publishes an annual Statistics Digest⁸² containing key statistical information and editorial on the WA resource sector, including overviews of the value of the mineral and petroleum sector, commodity price trends, royalty information and breakdowns along regional and local government lines for commodity production. While outside the reporting period, in 2014–15 the value of mineral and petroleum production across the south-west (that is the area approximating Parks and Wildlife's three forest regions) was more than \$488 million, with the major commodities produced being alumina, coal, mineral sands and gold (DMP, 2015).

⁸⁰ BHP Billiton

⁸¹ Department of Parks and Wildlife (2015a). Table 22: Silvicultural Objectives, page 106, https://www.dpaw.wa.gov.au/images/documents/about/annual-report/2015/20150304_parks_and_wildlife_yearbook_2014-15_v2.pdf

⁸² Department of Mines and Petroleum (2014). dmp.wa.gov.au/About-Us-Careers/Statistics-Digest-3962.aspx

Parks and Wildlife continues to provide advice, including input into environmental approvals and rehabilitation, to proponents and decision-making authorities on a range of major resource and other development proposals. The aim is to guide the effective management of development projects and activities to maintain or improve nature conservation outcomes for lands and waters managed under the CALM Act and species protected under the WC Act, consistent with the FMP 2004–2013 and FMP 2014–2023. This role extends to contributing feedback on the development and implementation of environmental conditions for mining development proposals and expansions of rail and other infrastructure by mining companies.

Parks and Wildlife also fulfilled various responsibilities relating to advice and decision making under the provisions of SAAs for resource development projects affecting Parks and Wildlife-managed lands, in particular bauxite mining and rehabilitation activities in State forests of the south-west by Alcoa and South 32 (Worsley Alumina), coal mining and rehabilitation activities by Yancoal Australia and Lanco Griffin Coal, and basic raw material extraction operations in State forest.

Parks and Wildlife also maintained its role in providing significant support for implementing the responsibilities of the WA Environment Minister and the Conservation Commission in their consideration of mining and petroleum activities, under sections 24 of the *Mining Act 1978* and section 15A of the *Petroleum and Geothermal Energy Resources Act 1967*, to access lands managed under the CALM Act. This role focuses on the provision of advice in the form of recommendations or concurrence to the Mines and Petroleum Minister for proposed mining and petroleum activities in CALM Act-managed lands and waters.

Tourism and recreation

WA continues to support and encourage the tourism and recreational benefits derived from the south-west forest areas. A wide variety of activities are catered for, including picnicking, bushwalking, cycling, camping, swimming, fishing and canoeing. On occasions, some areas are utilised for activities such as organised car rallies and adventure racing. The Tourism WA fact sheet for 2014–15 provides an estimate of visitor numbers and nights spent in the south-west⁸³.

The quality of recreational facilities and services provided by WA has been underpinned by significant investment, much of which has occurred in the national parks created under the FMP 2004–2013. Recreation and tourism assets such as the Valley of the Giants and Tree Top Walk, the Bibbulmun Track and Munda Biddi Trail are recognised as world-class facilities that provide an important basis for some south-west tourism and recreation industries.

In August 2013, the State Government announced \$34.4 million in Royalties for Regions funding over four years for the *Caravan and Camping Action Plan*. Just under \$15 million has been earmarked to improve camping facilities in national parks and an additional \$6.3 million allocated to the *Parks for People* initiative⁸⁴. Investment will be made to provide high-quality, low-cost campgrounds in national parks throughout the south-west and mid-west, including \$895,000 for Logue Brook campground north-east of Harvey, and \$800,000 for Nanga campground redevelopment in Lane Poole Reserve south of Dwellingup. A part of the \$20 million *Conservation Parks Visitor Infrastructure and Roads Initiative* (from 2010 to 2014), works to improve facilities and road infrastructure in new and expanded campgrounds in Yalgorup National Park, Lane Poole Reserve and at Logue Brook were completed in 2013–14.

The *Healthy Parks, Healthy People* program was an important component of raising community awareness of the health benefits of parks. It provided focus for public participation and community involvement on Parks and Wildlife-managed lands. During 2011–12, cross-promotional opportunities with non-government health organisations and other partners were pursued.

⁸³ Tourism Australia (2015). tourism.wa.gov.au/Publications%20Library/Research%20and%20reports/Australia%27s%20South%20West%202015%20Factsheet.pdf

⁸⁴ Department of Parks and Wildlife (n.d.) dpaw.wa.gov.au/parks/parks-for-people

Other support for the tourism and recreation sectors in the south-west include:

- engaging with a range of groups and organisations, including the Nature Based Recreation and Tourism Research Reference Group⁸⁵
- participating in the Great South West Edge⁸⁶ to Tourism Australia and Parks Australia’s National Landscapes program (2011)
- *Free Park Days* initiated in 2010, with free public entry into selected parks across the State including Beedelup, Gloucester, Porongurup, Walyunga and Yanchep national parks and the Tree Top Walk
- developing and maintaining a parks-focused Explore Parks WA website⁸⁷
- the campgrounds website Park Stay WA⁸⁸, which provides details for more than 110 camp sites around the State. An online trial generated more than 7000 bookings for popular sites across the State including Lane Poole Reserve near Dwellingup.

Demand for certain types of recreation activities is increasing – activities such as mountain-biking, geocaching, trail bike riding, four-wheel driving and competitive adventure events are growing in popularity. The various recreation activities are provided for subject to a range of environmental and regulatory considerations, including requirements for drinking water catchment protection and disease management. The need to balance enjoyable and enriching visitor experiences with conservation and other values and uses is an important management challenge. Other related matters include managing visitor safety, unauthorised recreational activities and vandalism of recreational facilities. The FMP 2014–2023 outlines a suite of management activities to help plan for future recreation and tourism.

| | |
|---|----------------------------|
| As part of providing greater security of access to resources for Forest-based industry, the Commonwealth will not prevent enterprises obtaining, using or exporting timber, Woodchips or Unprocessed Wood products sourced from the South-West Forest Region in accordance with this Agreement. | Clause number 74 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

As the WA RFA was maintained over the third five-year reporting period, it met the necessary conditions in relation to export control of woodchips or unprocessed wood products which had been established with the signing of the agreement.

⁸⁵ Department of Parks and Wildlife (2013). parks.dpaw.wa.gov.au/for-business/nature-based-recreation-and-tourism-research-projects

⁸⁶ Tourism Australia (2011). tourism.australia.com/national-landscapes/8334.aspx

⁸⁷ Department of Parks and Wildlife (2013f). parks.dpaw.wa.gov.au/whats-on

⁸⁸ Department of Parks and Wildlife (n.d.). parkstay.dpaw.wa.gov.au/

| | |
|---|------------------------------------|
| <p>The Parties agree that this Agreement is expected to provide, based on current sawlog specifications, logging and sawmilling technology, royalty structure, market demand and price, sawlog Sustained Yield levels for the period 1999-2003 inclusive of 324,000 m³ per annum of Jarrah first and second grade sawlogs averaged over the period, 186,000 m³ per annum of Karri first and second grade sawlogs and 78,000 m³ per annum of Marri sawlogs. For the period 2004-2018 inclusive, this Agreement is expected to provide sawlog Sustained Yield levels of 286,000 m³ per annum of Jarrah first and second grade sawlogs, 178,000 m³ per annum of Karri first and second grade sawlogs subject to clause 76 and 80,000 m³ per annum of Marri sawlogs. Environmental, heritage, economic, social and ecologically sustainable forest management issues have been taken into account in providing a land base and management practices that are expected to produce these yields. The quantities in this clause are based on scheduling of timber harvesting so as to produce a non-declining yield of sawlogs. The Sustained Yield of sawlogs for the period 2004 to 2018 makes allowance for a higher level of harvest for jarrah and karri sawlogs for the period 1999 to 2003 and has been confirmed by a Panel of Independent Experts. The Parties acknowledge that sawlog Sustained Yield levels in Western Australia are subject to periodic review under the CALM Act.</p> | <p>Clause number 75</p> |
|---|------------------------------------|

This ongoing commitment was not achieved in Period 1, Period 2 or Period 3.

The response provided as part of the combined first and second five-year progress reporting (July 2013) and response provided at Clause 45 of this progress report outlines why the commitment in this clause was not achieved. The volumes set by the FMP 2004–2013 continued through this reporting period prior to further assessment as part of the preparation of the FMP 2014–2023.

Information on the sustained yield by species against the settings in the FMP 2004–2013 are reported at Clause 45.

| | |
|--|------------------------------------|
| <p>The parties acknowledge the recommendation of the panel of Independent Experts that the Sustained Yield of Karri sawlogs could be set at 178,000 m³ per annum from 2004 with some minor revisions to the rotation length of a small number of Karri regrowth stands. Western Australia agrees to the introduction of revised Karri rotation lengths as part of the next Forest Management Plan, noting that harvesting associated with these revisions will occur beyond the life of the current Forest Management Plan.</p> | <p>Clause number 76</p> |
|--|------------------------------------|

This commitment was not achieved in Period 1, Period 2 or Period 3.

The response provided as part of the combined first and second five-year progress reporting (July 2013) and response provided at Clause 45 of this progress report outlines why the commitment in this clause was not achieved. The volumes set by the FMP 2004–2013 continued through this reporting period prior to further assessment as part of the preparation of the FMP 2014–2023.

A revised rotation length for part of the older regrowth karri forest (regenerated in the 1930s) was applied in the calculation of sustained yields and management of karri forest for the FMP 2004–2013, and this setting was carried forward into the FMP 2014–2023.

| | |
|---|----------------------------|
| Western Australia expects to change from a system of sawlog sales based on sawlog specifications to a system of sales based on bole log specifications at the time of the next Forest Management Plan. Based on a bole log sales system, it would be expected that the actual level of sawlogs will be more than that obtained from the current specifications for sawlogs through increased utilisation of Gross Bole Volume. At the time of this change a new bole log sustained yield figure would be established. | Clause number 77 |
|---|----------------------------|

This commitment was achieved in part during Period 1, Period 2 and Period 3.

The sustained yields for jarrah and karri during Periods 1, 2 and 3 have been calculated on the basis of first and second grade sawlogs. However, these figures have been readily converted as required to the equivalent volumes of other log grades that may be sold by the FPC.

In Period 3, the FPC reviewed the sawlog specifications for the FMP 2014–2023. Provision for the sale of both bole sawlogs and graded sawlogs is incorporated in the FPC’s internal Procedure 63 *Native Forest Log Specifications*.

A new bole log sales system was introduced through a request for proposals process associated with the introduction of the FMP 2014–2023⁸⁹. A range of new log product categories provides greater flexibility to industry and the sustained yield continues to be calculated on the basis of first and second grade sawlog equivalents, in part to provide consistency for monitoring and reporting purposes. The FPC intends to continue offering both bole and graded sawlogs to ensure maximum flexibility in the sawmilling industry. This clause will therefore continue to be achieved in part and a new bole log sustained yield figure will not be required.

| | |
|--|----------------------------|
| Wherever possible Western Australia will continue to enhance silvicultural programs and reforestation works to improve the productive capacity of State forests. | Clause number 78 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Silvicultural programs to enhance the productive capacity of State forest continued during Period 3 with a range of silvicultural treatments applied over extensive areas of jarrah and karri forest. These treatments included thinning of regrowth, culling and silvicultural burning. Areas of silvicultural treatments and reforestation works associated with mining are recorded in SILREC (an in-house system with spatial and data attributes which records areas of south-west native forest cut-over to varying silvicultural prescriptions and treatments) and reported through Parks and Wildlife and FPC annual reporting processes. For example, key efficiency indicator 6 in FPC’s annual report⁹⁰ tracks the area of regrowth karri thinned relative to targets.

In the jarrah forest, the availability of residue markets continues to restrict the capacity of FPC to achieve full silvicultural outcomes, although markets for these products will continue to be investigated. During Period 3, the area of jarrah and karri regrowth forest actually thinned was less than the area provisionally scheduled for thinning each year due to reduced product demand. Consequently, adjustments to future wood flows were incorporated into the revision of sustained yield for the FMP 2014–2023.

During Period 3, progressive reforestation of areas mined for minerals and basic raw materials continued in accordance with requirements for mine site rehabilitation under SAA.

⁸⁹ Forest Products Commission Western Australia (n.d.). fpc.wa.gov.au/sale-and-supply/how-we-sell-timber/contracts-and-tenders

⁹⁰ Forest Products Commission Western Australia (2015). fpc.wa.gov.au/content_migration/about_us/annual_report/annual_report_1415.aspx

| | |
|--|------------------------------------|
| <p>Milestone Both Parties are committed to the implementation of a range of Forest-based industry development initiatives (Attachment 14). The Parties agree to develop a Memorandum of Understanding for a joint Commonwealth-Western Australian South-West Forest Industry Structural Adjustment Program (WA FISAP) which will establish the respective roles and responsibilities of the two governments in administering the program. The Parties further agree that a total of \$59 million is available to implement these initiatives (refer Clause 98).</p> | <p>Clause number 79</p> |
|--|------------------------------------|

This milestone was achieved in Period 1, Period 2 and Period 3.

In Period 3, FPC continued to help implement development initiatives in the forest industry. Initiatives were undertaken to supply plantation residues for a new biomass power station.

Clause 73 and **Appendix 9** provide a more detailed overview of the work undertaken during Period 3 supporting the range of industries which derive benefits from access to south-west forests.

| | |
|---|------------------------------------|
| <p>The Parties recognise the importance of certainty of resource supply to industry and the role this plays in investment in value-adding. Western Australia will explore mechanisms to enable contracts for the sale of wood to extend beyond the period of Forest Management Plans and make them renewable as well as transferable.</p> | <p>Clause number 80</p> |
|---|------------------------------------|

This ongoing commitment was achieved in part during Period 1, Period 2 and Period 3.

The FP Act caps contract periods for sale of log products from native forests to the ten-year period of a FMP. Investment for the wood and wood-based products industries was facilitated by the State Government's Investment Security Guarantees (ISG) and provided a level of certainty beyond the ten-year period of a FMP. Companies with an ISG could seek compensation if the contracted supply of log volume was affected by future changes to government policy, which could influence the level of sustained yield. Sawmilling companies that were offered contracts for jarrah and karri graded sawlogs were initially offered an ISG to secure funding for new investment that they were undertaking. This was successful in gaining initial investment but further investment is required for the wood-processing industry to adapt to new markets such as engineered wood products.

During Period 3, FPC investigated options for encouraging further investment in the wood-processing industry with the development of the new FMP 2014–2023.

5.7 *Indigenous heritage*

| | |
|---|------------------------------------|
| <p>The Parties agree that the procedures outlined in Attachment 10 will be implemented by Western Australia to ensure the appropriate management of Aboriginal heritage including the maintenance of traditional uses and values, in the South-West Forest Region of Western Australia.</p> | <p>Clause number 81</p> |
|---|------------------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Consultation with Aboriginal people on the appropriate management of cultural and heritage values occurs in a modified approach to that envisaged in Attachment 10 of the WA RFA.

Appendix 6 outlines in more detail the legislative requirements for safeguarding Aboriginal cultural and heritage and Parks and Wildlife's and FPC's mechanisms for implementing these.

5.8 Other forest uses

| | |
|---|----------------------------|
| The Parties agree that Forest uses other than timber production will be determined in accordance with Western Australian legislation with due regard for protection of environmental and heritage values. | Clause number 84 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The aim of sustainable forest management is to balance the conservation of biodiversity, cultural heritage values and the socio-economic benefits of public native forests to WA regional communities. In addition to wood production for wood-processing facilities, public native forests support customary activities, research, and infrastructure development, for example power supply and communications, and supply other forest products, such as commercial and domestic firewood, craftwood, burls, apiculture, mining, water production and supply, wildflower and native plant picking, seed collection, bush foods, eucalypt and native plant oils, bioprospecting and basic raw materials. These forests also support a variety of recreation and tourism activities including four-wheel driving, car rallies, trail bike riding, mountain biking, orienteering, rogaining, and camping.

These forest uses, activities and resources are provided for under the FMP 2014–2023 and managed through the appropriate lawful authority, licences or permits in accordance with the CALM Act and WC Act and associated regulations⁹¹. The legislation is supported by a suite of corporate policies, guidelines, codes of practices and other guidance material which set strategic approaches and outline principles, standards and instructions giving due regard to the protection of the forested environment, conservation of biodiversity and cultural heritage uses and values⁹².

| | |
|--|----------------------------|
| The Parties acknowledge that under State arrangements Mineral and Petroleum Exploration, Mining Operations, Petroleum Operations and the establishment of all related infrastructure (including access and transport) is permitted in the CAR Reserve System subject to relevant State approval processes. In National Parks and Class A reserves the approval of both houses of State Parliament is required before Mining Leases and General Purpose Leases are granted and Mining can occur. Western Australia will ensure that proposed Mining and Petroleum Operations and related infrastructure in the CAR Reserve System will be referred for environmental impact assessment procedures under the <i>Environmental Protection Act 1986</i> (WA). Petroleum Operations will be undertaken in accordance with the <i>Petroleum Act 1967</i> (WA) and the <i>Petroleum Pipelines Act 1969</i> (WA) and Mining Operations will be undertaken in accordance with the <i>Mining Act 1978</i> (WA) and State Guidelines for Mineral Exploration and Mining within Conservation Reserves and Other Environmentally Sensitive Lands in Western Australia. Western Australia will ensure that environmental assessment procedures will protect and maintain identified CAR Values in a regional context where feasible. | Clause number 85 |
|--|----------------------------|

This ongoing commitment was achieved during Period 1, Period 2 and Period 3.

Mineral exploration and development activities are managed in WA in accordance with a well-established legislative framework, supported by policy and guidance documents and government agency oversight. State forest and timber reserves are multiple use forests and, subject to grant of tenement and activity assessment and approvals processes under the *Mining Act 1978*, *Petroleum and Geothermal Resources Act 1967* and relevant State Agreement Acts (where applicable), are potentially available for these activities.

⁹¹ Department of Parks and Wildlife (2013) parks.dpaw.wa.gov.au/for-business/commercial-operations-licensing and dpaw.wa.gov.au/plants-and-animals/licences-and-permits

⁹² Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/36-policies-and-legislation

For activities regulated under the *Mining Act 1978* and the *Petroleum and Geothermal Resources Act 1967*, there are specific legal requirements under the legislation to consult and obtain agreement, or in some cases recommendations, from the WA Environment Minister prior to any approval of access to State forests and other reserved lands for proposed mineral or petroleum related activities. Where required under the legislation, and as otherwise considered appropriate, advice regarding proposed access to reserves is also sought from the Conservation Commission.

During Period 3, the referral of resource development proposals on State forests and by the Department of Mines and Petroleum (DMP) was undertaken on the basis of a MoU between DMP and the EPA. This MoU has now been superseded by the *Memorandum of Understanding for Collaborative Arrangements between the Office of the Environmental Protection Authority and the Department of Mines and Petroleum* (February 2016)⁹³.

Where resource development related proposals are referred to the EPA for possible environmental impact assessment under Part IV of the EP Act, advice is routinely sought from Parks and Wildlife in relation to potential impacts on the values of State forests and reserves affected by proposed resource development activities and how such impacts may be addressed. This occurs at the proposal referral stage and during any formal impact assessment processes that are required. Arrangements for the provision of Parks and Wildlife input to formal impact assessments for mining and industrial development proposals are set out in a MoU between Parks and Wildlife and the Office of the Environmental Protection Authority.

State Agreement Acts are the principal legislative mechanism under which major mining projects are administered in WA. Alcoa, Worsley Alumina, Yancoal Australia and Lanco Griffin Coal hold SAA leases over land within the WA RFA region. Mining activities within SAA leases are administered by the Department of State Development (DSD) on advice of relevant government agencies (via continuously operating government agency working groups coordinated and chaired by DSD). These groups review and advise the government on rolling mine plans, mine closure and completion criteria and other matters relevant to mining activities under the SAAs, and have representation from a range of agencies including the Department of Water, Water Corporation, Office of Environmental Protection Authority, Parks and Wildlife and Department of Mines and Petroleum.

During Period 3, Parks and Wildlife worked with Alcoa as well as DSD, DMP and other agencies to revise and update the completion criteria for areas of Alcoa rehabilitated mine sites for handback to the State. The criteria take particular account of returning sustainable timber, fire management regimes, dieback mapping and reestablishing resilient vegetation complexes. While outside the reporting period, the completion criteria was finalised and published in late 2015⁹⁴.

| | |
|---|----------------------------|
| The parties note that rehabilitation of any Mining site will be in accordance with the provisions of the <i>Mining Act 1978</i> (WA) and will aim to achieve world's best practice. | Clause number 86 |
|---|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The Parties acknowledge that rehabilitation of mining areas in the WA RFA region must meet the requirements of relevant legislation, including the Mining Act, the EP Act and SAAs, and applicable ministerial conditions in the case of activities and developments subject to the environmental assessment and approval process under the EP Act.

⁹³ Environmental Protection Authority and Department of Mines and Petroleum (2016). dmp.wa.gov.au/Documents/Environment/ENV-MEB-016.pdf

⁹⁴ Mining and Management Program Liaison Group (2015). dsd.wa.gov.au/alcoa/s-bauxite-mine-rehabilitation-program.

Parks and Wildlife continues to have significant input to determining requirements for mine site rehabilitation on land that it manages, and has been involved in revising and updating completion criteria for Alcoa’s rehabilitation operations, as outline in the response to Clause 87.

5.9 Competition principles

| | |
|--|------------------------------------|
| <p>Milestone The Parties recognise that in accordance with the Competition Principles Agreement, Western Australia will undertake a review of relevant sections of the CALM Act and a review of competitive neutrality applying to CALM’s wood-based businesses. The Commonwealth agrees that the day to day pricing and allocation arrangements for Forest Produce from public forests are matters for Western Australia. Western Australia confirms its commitment to the wood pricing and allocation principles set out in the NFPS.</p> | <p>Clause number 87</p> |
|--|------------------------------------|

This milestone was achieved in Period 1, Period 2 and Period 3.

Part 8 of the FP Act 2000 requires that all sales processes are transparent, fair and equitable, and observe and apply relevant WA Department of Finance policies and public sector guidelines. The State Government website TendersWA is used as a notification mechanism when tenders are released and awarded.

For the SAA and long-term contracts, pricing reviews were undertaken in accordance with the requirements specified in each contract and the log sales process adjusted accordingly.

FPC’s Policy 30 *The Utilisation of Forest Products from Native Forests* outlines implementation strategies to ensure that products from native forests will be marketed, prepared and delivered in processes which are consistent with the functions and strategic objectives of FPC as well as satisfying environmental performance criteria set in a FMP. During Period 3, new native forest supply and production contracts (other than existing long-term contracts with the roll-over provisions) were awarded through an open and public request for tenders process arising from the FMP 2014–2023.

5.10 Research

| | |
|---|------------------------------------|
| <p>The results of the Comprehensive Regional Assessment of the Forest values of the South-West Forest Region indicated a number of research priorities. The Parties have outlined research priorities in Attachment 11.</p> | <p>Clause number 88</p> |
|---|------------------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Research activities undertaken by Parks and Wildlife and FPC are detailed in **Appendix 7**. Parks and Wildlife provides an annual overview of research projects published on the Parks and Wildlife’s website⁹⁵.

For Period 3, applicable key research programs across fauna conservation, flora conservation and landscape conservation are:

- identifying the cause(s) of the recent declines of woylies (*Bettongia penicillata ogilbyi*) in south-west WA
- Gilbert’s potoroo (*Potorous gilbertii*) recovery plan

⁹⁵ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research

- importance of fox, cat and native predator interactions to sustained fauna recovery in the northern jarrah forest
- responses of terrestrial vertebrates to timber harvesting in the jarrah forest
- long-term stand dynamics of regrowth karri forest in relation to site productivity and climate
- management of invertebrate pests in forests of south-west WA
- aspects of *Phytophthora* dieback behaviour relevant to the formulation of jarrah silviculture guidelines
- *FORESTCHECK* integrated site-based monitoring of timber harvesting and silviculture in the jarrah forest
- monitoring stream biodiversity (KPI 20 of the FMP 2004–2013).

Forest products industry priority projects include:

- carbon stocks and flows in native forests and harvested wood products⁹⁶
- operational deployment of LiDAR derived information into softwood resource systems⁹⁷
- herbicide screening trials to ensure industry best practice and seek to reduce the use of chemicals
- analysis and deployment of a genetic improvement program for radiata pine⁹⁸
- improved harvest and haul logistics⁹⁹
- wood quality initiative that uses information about site, management regime and daily weather data to predict variation in wood density and stiffness¹⁰⁰
- biosecurity initiatives¹⁰¹.

| |
|--|
| The Parties agree to consult each other in the development of future research projects that may affect the Agreement and note that the subject areas and priorities may change throughout the duration of the Agreement. |
|--|

| |
|----------------------------|
| Clause number 89 |
|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Research projects undertaken in Period 3 were not conducted via the mechanism provided for in this clause. Research conducted by various organisations is detailed in **Appendix 7**.

| |
|---|
| The Parties agree to make publicly available, wherever possible, research reports relevant to this Agreement. |
|---|

| |
|----------------------------|
| Clause number 90 |
|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Appendix 7 lists the suite of research reports undertaken for the development of the FMP 2014–2023 and any other relevant research reports. Parks and Wildlife also publishes to specialist scientific journals, *Conservation*

⁹⁶ Forest and Wood Products Australia (2016). fwpa.com.au/images/resources/Amended_Final_report_C_native_forests_PNC285-1112.pdf

⁹⁷ Forest and Wood Products Australia (2015). fwpa.com.au/images/resources/FWPA_PNC305-1213_Final_Report_Feb2015_amended.pdf

⁹⁸ Forest and Wood Products Australia (2013). fwpa.com.au/images/resources/SEEDPLAN_IL_FWPA_Final_Report.pdf

⁹⁹ Australian Forest Operations Research Alliance (n.d.). usc.edu.au/connect/research-and-innovation/research-partnerships/australian-forest-operations-research-alliance-afora

¹⁰⁰ Forest and Wood Products Australia (2013). fwpa.com.au/images/resources/FWPA_Research_Report_PNC%20196-1011_Final_Dec13.pdf

¹⁰¹ Forest and Wood Products Australia (2011). fwpa.com.au/images/resources/PRC218-1011_Myrtle_Rust_June_2011_0.pdf

Science Western Australia and *Nuytsia – WA’s journal of systemic botany*¹⁰² and maintains an online database of research papers published by Parks and Wildlife staff¹⁰³.

5.11 Data use and access

| | |
|--|------------------------------------|
| <p>The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and accreditation of relevant information owned and held by each of them and have agreed to provide such access and accreditation for the term of this Agreement in accordance with the practices and procedures specified in Attachment 12.</p> | <p>Clause number 91</p> |
| <p>The Data Agreement covers: (a) ownership and custodianship; (b) archival lodging and location and associated documentation standards; and (c) access, use and maintenance of the data.</p> | <p>Clause number 92</p> |

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The Parties acknowledge the importance of providing timely access to data and information to assist in implementing the requirements of the WA RFA. Access will be facilitated in accordance with the intent as detailed in Attachment 12 of the agreement.

Recommendation 12 of the independent review of the combined first and second five-year progress report proposes that the Parties consider reviewing the historical data sets supporting the WA RFA and take appropriate steps to update these data sets and ensure ongoing access. An overview of the progress to implement this recommendation is provided in **Section 6** of this progress report.

| | |
|---|------------------------------------|
| <p>Milestone The Parties also agree to lodge archival copies of data within six months of signing this Agreement.</p> | <p>Clause number 93</p> |
|---|------------------------------------|

This milestone was achieved in Period 1, Period 2 and Period 3.

Archival copies of significant joint data sets were lodged with the C’wlth Department of Agriculture and Water Resources during Period 1 (March 2000) while a comprehensive report on the Status of Data Archiving was completed in Period 2.

¹⁰² Department of Parks and Wildlife (2013) dpaw.wa.gov.au/about-us/science-and-research/76-publications-and-resources/104-dpaw-scientific-journals

¹⁰³ Department of Parks and Wildlife (n.d.). science.dpaw.wa.gov.au/papers/

5.12 *Legally binding rights and obligations*

5.12.1 Forest management

| | |
|--|----------------------------|
| Western Australia will: (a) implement the CAR Reserve System described in Attachment 1 and identified on Map 1, including the tenure classification outlined therein, and management of these areas on the basis of the Agreement as if they were reserves until established in accordance with Clause 70. Milestone (b) make improvements to its Forest Management System including audits as outlined in Clause 42; and Milestone (c) Undertake reviews in accordance with the Competition Principles Agreement as outlined in Clause 87. | Clause number 95 |
|--|----------------------------|

The ongoing commitment (a) was achieved in part in Period 1, Period 2 and Period 3. Milestones (b) and (c) were achieved in Period 1, Period 2 and Period 3.

Detailed responses to this clause for Period 3 are provided:

- for part (a) refer to Clause 70
- for part (b) refer to Clause 42.

| | |
|--|----------------------------|
| The Commonwealth will: (a) maintain accreditation of Western Australia's Forest Management System for the South-West Forest Region as amended by this Agreement providing changes to the system are consistent with the provisions of this Agreement; and (b) not prevent enterprises obtaining, using or exporting timber, Woodchips or Unprocessed Wood products sourced from the South-West Forest Region of Western Australia in accordance with this Agreement. | Clause number 96 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Detailed responses to this clause for Period 3 are provided:

- for part (a) refer to Clause 48
- for part (b) refer to Clause 74.

5.12.2 Compensation

| | |
|--|----------------------------|
| The WA RFA details the provisions for compensation in 97.1 to 97.20 (not repeated here). | Clause number 97 |
|--|----------------------------|

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

There were no claims by either of the Parties against the compensation provision during Period 3.

5.12.3 Industry assistance

| | |
|--|----------------------------|
| The Commonwealth will, subject to the terms and conditions under any Commonwealth Act which appropriates money, provide an amount of \$20 million and Western Australia will provide \$39 million to implement a South-West Forests Industry Structural Adjustment Program, subject to the development of a Memorandum of Understanding between the two Parties which establishes the respective roles and responsibilities of the two Governments in administering the Program, and a range of other Forest-based industry development initiatives. | Clause number 98 |
|--|----------------------------|

This commitment was achieved in Period 1, Period 2 and Period 3.

Under the Western Australia Forest Industry Structural Adjustment Program (WA FISAP) the Commonwealth administered a \$20 million program and the State Government implemented a \$161 million program to implement the *Protecting our old growth forests* policy.

6. Report on implementation of recommendations from the independent review of the combined first and second (1999 to 2009) five-yearly performance reporting

In December 2013, Dr Glen Kile independently reviewed the combined first and second five-yearly progress report of the WA RFA. His report¹⁰⁴ to the Australian and WA governments was tabled in the Australian Parliament on 18 March 2014 and contained 13 recommendations to the Parties as a consequence of undertaking the review. The Parties' joint government response¹⁰⁵ to Dr Kile's recommendations was tabled in the Australian Parliament on 11 February 2015.

The recommendations relate to issues identified by Dr Kile for the Parties to consider for the continued implementation of the WA RFA. An overview of the progress in implementing the recommendations follows.

Reviewer's Recommendation 1: The Parties clarify some matters in A Report on Progress with the Implementation of the Regional Forest Agreement for the South–West Region of Western Australia in a revised published (online) version.

Joint Government Response

The Parties agree to address and clarify certain factual information raised by stakeholders in submissions during the public comment period on A Report on Progress with the Implementation of the Regional Forest Agreement for the South–West Region of Western Australia.

*The Parties have addressed this recommendation, attached as an addendum to this Joint Government Response at **Annex B**.*

Status of Reviewer's Recommendation 1: Completed as reported in the Joint Government Response, November 2014.

Reviewer's Recommendation 2: The Parties develop an agreed statement or addendum of the legislative and administrative changes at Commonwealth and State level that affect the Regional Forest Agreement.

Joint Government Response

The Parties agree to outline the legislative and administrative changes made by the Australian and Western Australian Governments that affect The Regional Forest Agreement for the South-West Forest Region of Western Australia.

*The Parties have addressed this recommendation, attached as an addendum to this Joint Government Response at **Annex C**.*

***Annex C** provides an overview of the changes in legislation (Acts and Regulations) made by the Australian and Western Australian Governments since the signing of the Western Australian RFA in May 1999 up to 2014. This annex also lists the key administrative changes to the primary and supporting departments or agencies which oversee the Western Australian RFA and the Western Australian Government policies which support ecologically sustainable forest management within the Western Australian RFA region.*

Status of Reviewer's Recommendation 2: Completed as reported in the Joint Government Response, November 2014.

¹⁰⁴ Kile, G. (2013). dpaw.wa.gov.au/management/forests/managing-our-forests/74-wa-regional-forest-agreement-progress-report

¹⁰⁵ Department of Parks and Wildlife (WA), Department of Agriculture, Fisheries and Forestry (Cwth) (2013). agriculture.gov.au/forestry/policies/rfa/regions/wa/rfa

Reviewer's Recommendation 3: The Parties recommit to timely and regular reviews of the implementation of the Regional Forest Agreement recognising the scope of reviews will change as the RFA is progressively implemented.

Joint Government Response

The Parties support the intent of this recommendation in terms of the next five-yearly review of the Western Australian RFA.

The Parties appreciate that the next five-yearly review of the Western Australian RFA needs to be completed in a timely manner to ensure public confidence in the management of the State's public forests and the transparency of the review process.

The Parties commit to undertaking the next five-yearly review and expect it to commence in early 2015.

Status of Reviewer's Recommendation 3: Underway. Preparation of this progress report commenced in 2015.

Reviewer's Recommendation 4: The Government of Western Australia agrees on the mechanism to achieve external input into Research and Development (R&D) priorities and opportunities to expand cooperative research programmes.

Joint Government Response

The Parties agree that external input into research and development priorities and opportunities provides for the views of academics and the wider community to be considered and, as appropriate, incorporated into forest management.

The State will continue to seek opportunities for external input into research and development. Western Australia has an existing mechanism in place that provides a mechanism to take into account input from external parties.

The Forest Management Plan 2014-2023¹⁰⁶ lists the following management activities which assist in setting the research direction for forest management in the Western Australian RFA area. The Department of Parks and Wildlife has responsibility for:

- 126 The Department and other proponents where required by the Department, will:
- 126.1 seek to address knowledge gaps, including through relevant 'benchmarking' activities and research programs, as appropriate
- 126.2 work collaboratively with other agencies and institutions on matters of mutual interest
- 126.4 conduct adaptive management projects in a manner that has regard to an adaptive management policy, to be prepared by the Department.
- 128 The Conservation Commission and the Department will:
- 128.1 evaluate the results from research, monitoring, audits and adaptive management projects to determine whether the plan, or guidelines and policies referred to in the plan, should be amended.

The Forest Products Commission (FPC), through cooperative arrangements with industry, universities, government agencies and other research providers coordinates the research

¹⁰⁶ Department of Parks and Wildlife (2013c). <https://www.dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023>

requirements for industry development. This provides for a high level of external input and ensures a high degree of collaboration with industry participants.

FPC is a member of Forest and Wood Products Australia (FWPA). FWPA provide research and development services for the forest and wood products industry across Australia. FWPAs research priorities are developed based on industry and research community input.

In line with its science policy guidelines¹⁰⁷, relevant research within the Department of Parks and Wildlife is coordinated and integrated with related activities undertaken by relevant agencies/research entities.

Status of Reviewer's Recommendation 4: Completed as reported in the Joint Government Response, November 2014

Reviewer's Recommendation 5: The Government of Western Australia continues to periodically review the sustained yield in relation to the changing biotic and abiotic risk factors.

Joint Government Response

The Parties agree that sustained yield from the multiple-use native forests in the Western Australian RFA area require a periodic review to provide confidence to all stakeholders on the reliability of the volumes allocated to wood processing industries.

The Parties commit to continued periodic reviews of the sustained yield, taking into account changing biotic and abiotic risk factors, through the preparation of Forest Management Plans as required every 10 years by the Conservation and Land Management Act 1984 (CALM Act).

The Chair of the Conservation Commission of Western Australia in his introduction to the Forest Management Plan 2014-2023, addressed changing climate and sustained yield stating:

"... In this context, the sustained yield modelling undertaken for this plan and reviewed by a panel of independent experts has incorporated the latest climate projections (CSIRO, 2007). In addition a 'safety margin' has been applied to account for various risks, to determine the allowable levels of timber harvesting. ..."

The review of sustained yield undertaken for the Forest Management Plan 2014-2023 and the Department of Parks and Wildlife response to the review's recommendations was published on the Department's website¹⁰⁸.

Status of Reviewer's Recommendation 5: Completed as reported in the Joint Government Response, November 2014.

The FMP 2014-2023 contains a number of management actions to monitor changes in biotic and abiotic risk factors to inform the next review of the sustained yield.

¹⁰⁷ Department of Environment and Conservation (n.d.).
dpaw.wa.gov.au/images/documents/about/policy/Science_Policy_Guidelines_1-6.pdf

¹⁰⁸ Department of Parks and Wildlife (2013c). dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023

Reviewer’s Recommendation 6: The Parties review the indicators used for Ecologically Sustainable Forest Management assessment in the Forest Management Plan 2014-2023 as part of the next 5-yearly Regional Forest Agreement to ensure they adequately address each of the Montreal Criteria.

Joint Government Response

The Parties agree to consider the indicators used for ecologically sustainable forest management in the Forest Management Plan 2014-2023, against the suite of criteria and indicators adopted by Australia under the Montreal Process and committed to in the Western Australian RFA.

This review will be carried out in the lead up to the next five-yearly review of the Western Australian RFA and will assist in informing the Parties on the extent to which the indicators used in the Forest Management Plan 2014-2023 and those identified in the Western Australian RFA correspond.

It is acknowledged that the Forest Management Plan 2014-2023 key performance indicators do not address all of the 44 national indicators committed to in the Western Australian RFA. The national level indicators used in the Western Australian RFA include some indicators that rely on information from Australian Government agencies. However, Western Australia reports on a number of these indicators every five years through Australia’s State of the Forest reporting. Australia’s State of the Forest Report 2013 was released in March 2014¹⁰⁹.

Any State level indicator must be practical, measurable, cost effective and capable of being implemented at a regional level.

Status of Reviewer’s Recommendation 6: Completed.

The FMP 2014-2023 aligns with the Montréal Process Criteria. Western Australia has identified the alignment of the FMP 2014-2023 key performance indicators and other reporting processes with the Montréal Process indicators. More detail is provided in the response to WA RFA Clause 33 and at **Appendix 10**.

Reviewer’s Recommendation 7: The Parties assess the adequacy of the compliance provisions related to the Forest Management Plan 2014-2023 as part of the next 5-yearly Regional Forest Agreement review.

Joint Government Response

The Parties submit that the intent of this recommendation is met through the legislative requirement to prepare a forest management plan in accordance with the CALM Act and related subsidiary documents and associated compliance requirements of the plan¹¹⁰.

The Parties support reporting on the implementation of forest management compliance using the key performance indicators outlined in the Forest Management Plan 2014-2023. This is assisted by independent performance assessments undertaken by the Conservation Commission of Western Australia.

The FPC’s systems for management of its forest operations, including monitoring compliance with legislative requirements, have been recognised through achieving Environmental Management System (ISO14001:2004), Australian Forestry Standard (AS4708—2007) certification and more recently FSC Controlled Wood certification. The Australian Forestry Standard is a recognised international standard for sustainable forest management. This certification is based on rigorous independent

¹⁰⁹ Montreal Process Implementation Working Group (2013). agriculture.gov.au/ABARES/forestsaustralia/Pages/SOFR/sofr-2013.aspx

¹¹⁰ CALM Act Section 19(g)(iii)

auditing and is recognition of FPC's ongoing commitment to ecologically sustainable forest management practices.

A key initiative of the Forest Management Plan 2014-2023 is the preparation of a forest industry regulation policy, which has been completed by the Department of Parks and Wildlife (Policy Statement 89)¹¹¹. As required by the Forest Management Plan 2014-2023, inter-agency working arrangements to clarify the statutory roles and responsibilities of the Department of Parks and Wildlife and the FPC will be prepared to improve the current arrangements.

Status of Reviewer's Recommendation 7: Underway.

The Parties acknowledges that significant progress has been made in developing working arrangements between Parks and Wildlife and the FPC. A trial of these working arrangements is currently underway across Parks and Wildlife's three forest regions, Swan, South-West and Warren, within the WA RFA region. The trial will assist the relevant agencies to refine and finalise the working arrangements which is anticipated for completion by December 2016.

FPC continues to maintain Environmental Management System (ISO14001:2004) and Australian Forestry Standard (previously AS4708—2007 and currently AS4708—2013) certification of all of its forest operations. In addition, the FPC achieved FSC Controlled Wood certification for its karri forest operations in 2014.

Reviewer's Recommendation 8: The Government of Western Australia considers the development of a comprehensive forest health assessment system.

Joint Government Response

The Parties agree that a comprehensive forest health assessment system, which integrates information gathered through monitoring by relevant government agencies and research organisations, would provide a valuable tool to assist in managing forest health and vitality.

Western Australia submits that native forest ecosystem health is recognised as a key issue in the Forest Management Plan 2014-2023.

Throughout preparation of the plan, including assessment by the Environmental Protection Authority, report on appeals by the Appeals Convenor and determination of appeals by the Minister for Environment, it was noted that management activities 23 to 35 of the Forest Management Plan 2014-2023 provide a comprehensive approach to address key threats to the health and vitality of native forests and plantations in the plan area, with the objective of minimising the impact of weeds, animal pests and plant diseases.

The FPC actively manages softwood and hardwood plantations in line with the principles of the Plantation Forest Biosecurity Plan prepared under the auspices of Plant Health Australia. The plan ensures biosecurity planning and implementation at the forest management unit level. Planning identifies procedures to put into place to reduce impacts of pest incursions.

Forest health measures are also supported through relevant Commonwealth and State legislation and activities undertaken by various agencies and industry participants.

Status of Reviewer's Recommendation 8: Completed as reported in the Joint Government Response, November 2014.

¹¹¹ Department of Parks and Wildlife (2015a). dpaw.wa.gov.au/about-us/36-policies-and-legislation (Now Policy Statement 11)

Western Australian agencies undertake ongoing work in this area including monitoring and reporting associated with FMP 2014-2023 KPIs 1 to 8 adopting the use of remote sensing and the revised working arrangements relating to forest health surveillance and monitoring.

Parks and Wildlife coordinate ongoing programs for the identification and mapping of Phytophthora dieback disease and implements measures to restrict spread of the disease.

Reviewer’s Recommendation 9: The Parties ensure the climatic trends evident in the Regional Forest Agreement region are considered in future forest management planning and management for forest goods and services including conservation, wood and catchment water yields.

Joint Government Response

The Parties acknowledge the need to consider and include current climate trends in future forest management planning.

The Parties propose that planning for climate trends is effectively accounted for in 10-yearly intervals with the development of a forest management plan in accordance with the CALM Act, covering publically managed south-west native forests. A forest management plan gives effect to the obligations and commitments of the Western Australian RFA.

The Parties note the following statements by the Conservation Commission of Western Australia in its preparation of the Forest Management Plan 2014-2023:

“...It has been particularly concerned with the vulnerability of forests to climate change in developing the plan. The potential impact of climate change on the health and productive capacity of the natural ecosystems has been central to the Conservation Commission’s consideration of the elements that make up the plan. ...”

and

“... Planning for climate change has been considered in developing the range of proposed operations (management activities) outlined in the ‘Biological diversity’, ‘Ecosystem health and vitality’, ‘Soil and water’ and ‘Productive capacity’ chapters. Some socio-economic benefits may also be affected. ...”

The Parties also refer to the response provided to Recommendation 5, relating to the periodic review of the sustained yield in relation to the changing biotic and abiotic risk factors.

Status of Reviewer’s Recommendation 9: Completed as reported in the Joint Government Response, November 2014.

In addition to accounting for the latest climate change projections and incorporating a ‘safety margin’ when undertaking the sustained yield modelling for wood production in the development of the FMP 2014-2023, the plan also includes management activities to provide for silviculture for ecosystem health and water production; recognition of changes in salt risk ratings in selected areas; and modifications to the silvicultural guideline settings for regeneration burning. More detail is provided in the status update to recommendation 10.

Reviewer's Recommendation 10: The Government of Western Australia undertakes an analysis of the adoption of research outputs into management practice as part of the process of determining future research priorities.

Joint Government Response

The Parties agree that an analysis of the adoption of research outputs into forest management practice would be beneficial.

Western Australia agrees to assess the adoption of research outputs into management practices as part of the process to determine future research priorities.

Status of Reviewer's Recommendation 10: Completed.

The FMP 2004-2013 and 2014-2023 operated and continued to operate within an adaptive management framework in which the results of research programs are routinely incorporated into revised guidance and management practices. **Appendix 12** provides examples of outputs from research and monitoring programs which have contributed to responsive adaptation to management practices and monitoring programs, including:

- Ongoing monitoring of climate trends across the WA RFA;
- Key Performance Indicators 12 and 13 of the FMP 2014-2023 require the collation of key statistics relating to trends or changes in climate over the plan area, reporting on new knowledge relating to the impact of a changing climate on values identified in the plan and actions taken to adapt to a changing climate;
- Updated settings for regeneration burning;
- Provision for 'silviculture for ecosystem health' and 'silviculture for water production';
- Changes to phased harvesting requirements to manage salt risk;
- Use of predicted future climate scenarios in the calculation of timber sustained yields;
- Guiding principle in the selection of the location and extent of FHZs to consider likely changes in habitat quality and impacting processes over time; and
- Provision for salvage harvesting from areas subject to unplanned events, such as bushfire, to make use of fire damaged or killed trees and contribute to the cost of regenerating affected forest areas.

Appendix 12 also outlines the process for regular review of research outcomes and priorities within Parks and Wildlife, including publication of an annual research activities report.

Reviewer's Recommendation 11: The Parties review policy settings that affect the utilisation of wood harvested in the Regional Forest Agreement region in light of changing economic circumstances, technology and the opportunity for climate change mitigation.

Joint Government Response

The Parties support the full and sustainable utilisation of wood products harvested from the Western Australian RFA area.

The Parties acknowledge that wood is an important renewable resource. Ecologically sustainable forest management practices contribute to carbon sequestration in the forest and carbon storage in wood and wood-based products, and through avoidance of emissions associated with use of substitutes/alternatives to wood products.

The FPC has a role in ensuring the efficient and effective utilisation of wood harvested from the Western Australian RFA region, and as a component of its overall mission of contributing to the

State's economic and regional development, it will promote 'innovation in forest management and local value adding for timber resources'. This is reflected in FPC's corporate goal to 'facilitate a viable forest industry to deliver social and economic benefits to the people of Western Australia', especially by increased utilisation and potential new markets.

The Forest Management Plan 2014-2023:

- *requires, FPC to prepare a timber industry development strategy to align future industry opportunities with the location and log quality mix made available under this plan, and likely future plans based on woodflow modelling*
- *provides for, with Ministerial approval, access to the upper allowable cut which includes full utilisation of lower value wood products.*

Status of Reviewer's Recommendation 11: Underway.

Management activity 62 of FMP 2014-2023 requires FPC to prepare a timber industry development strategy. In accordance with the statement of corporate intent, the FPC continues to investigate new market opportunities focusing on residue and engineered wood products¹¹². An expansion of these wood-processing industries supports the principles of ESFM in the FMP 2014-2023 and allows for the potential access to the upper yield limits for other bole volume as specified in the plan.

While outside the reporting period, the Australian Government established the Forest Industry Advisory Council (FIAC) in October 2014 to provide advice from a cross-section of industry participants on issues affecting Australia's forestry sector. FIAC provides advice to the Australian Government on issues facing the Australian forestry sector, initiatives to foster growth and sustainability of the sector, strategic priorities to support best practice and other forestry issues as requested.

Reviewer's Recommendation 12: The Parties review the need for updating key data sets and any steps that should be taken to ensure ongoing access to historical data sets.

Joint Government Response

The Parties agree that the data sets generated by the Comprehensive Regional Assessment of the south-west forest region, prior to signing the Western Australian RFA in May 1999, hold a large amount of complex data applicable to the RFA at that time.

The Parties agree to form a working group with representatives from relevant Australian and Western Australian government agencies that will:

- *identify the key data sets applicable to the ongoing implementation of the Western Australian RFA*
- *identify the custodian of the key master data sets and where and in what format these key data sets should have been archived*
- *establish how these key data sets have been maintained and their operability since initial archiving*
- *identify which of the key data sets may require updating and the agency/agencies responsible for undertaking this activity.*

The Parties note that essential data sets which support the Forest Management Plan 2014-2023, for example changes in forested tenure over time, level of reservation of native forest ecosystems, the extent of old-growth forest types, planned and unplanned fire history, silvicultural treatment of

¹¹² Forest Products Commission Western Australia (2014). fpc.wa.gov.au/publications/statement-corporate-intent-2013-14

harvested areas and the calculation of sustainable yield (past wood product yields from harvested areas to verify assumptions on wood volume) are maintained by the Department of Parks and Wildlife.

The Parties agree to establish a master register of key data sets which satisfy relevant criteria in terms of ongoing implementation of the Western Australian RFA.

Status of Reviewer's Recommendation 12: Underway.

The Parties are reviewing the datasets used to develop and support the WA RFA, identifying historical and current custodian, accessibility and currency of the datasets.

Reviewer's Recommendation 13: The Parties consideration of the scope of the next 5-yearly Regional Forest Agreement review should ensure the ongoing Regional Forest Agreement requirements are met in Forest Management Plan 2014-2023 particularly in relation to:

- a. Ecologically Sustainable Forest Management**
- b. protection of threatened flora and fauna, and that**
- c. the indicators of Ecologically Sustainable Forest Management are sufficiently comprehensive to cover social, economic and environmental aspects of forest management**

Joint Government Response

The Parties support a targeted focus of the next five-yearly review which concentrates on ongoing commitments and obligations in the Western Australian RFA, including where these link to the Forest Management Plan 2014-2023 implementation of the principles of ecologically sustainable forest management and the protection of threatened flora and fauna.

The Parties acknowledge that in line with Clause 43 of the Western Australian RFA, the commitments and obligations of the RFA will be implemented through a forest management plan. The current plan is the Forest Management Plan 2014-2023, which came into effect on 1 January 2014 and was prepared having regard to the principles of ecologically sustainable forest management as defined in Section 19 of the CALM Act.

The Parties agree that the intent of this recommendation will be considered in the scope of the next five-year review of the Western Australian RFA.

Status of Reviewer's Recommendation 13: Completed.

As proposed in the Joint Government Response, the preparation of the FMP 2014-2023 gave full consideration and continuation of the commitments in the WA RFA to measures to protect threatened flora and fauna and the delivery of Ecologically Sustainable Forest Management. **Appendix 5** provides further details on the protection of threatened flora and fauna, while **Appendix 11** describes the alignment of the FMP 2014-2023 Key Performance Indicators with the Montreal Process indicators of Ecologically Sustainable Forest Management.

7. Results of monitoring sustainability indicators

A modified adaptation of the international Montréal Process Criteria was applied as the framework for the goals, proposed operations and management activities in the FMP 2004–2013, which came into effect in January 2004 and covered most of the current review period. The eight criteria and 33 KPIs used by the FMP 2004–2013 were developed with input from key industry and conservation stakeholders, government agencies, and in consultation with the WA community during the development of the FMP 2004–2013. The criteria and KPIs were WA's response to establish an appropriate set of sustainability indicators, which reflected the criteria and indicators adopted nationally, to comply with the principles of ecologically sustainable forest management.

The internationally adopted Montréal Process Criteria for temperate and boreal forests provide seven broad criteria to describe those forest values that society seeks to maintain in forests. These are:

- conserving biological diversity
- maintaining productive capacity of forest ecosystems
- maintaining forest ecosystem health and vitality
- conserving and maintaining soil and water resources
- maintaining forest contribution to global carbon cycles
- maintaining and enhancing long-term multiple socio-economic benefits to meet the needs of societies
- legal, policy and institutional framework.

The FMP 2004–2013 used a modified short form adaptation of these Montréal Process Criteria to ensure harmonisation with the Montréal Process Criteria. These were:

- biological diversity
- productive capacity
- ecosystem health and vitality
- soil and water
- global carbon cycles
- natural and cultural heritage
- socio-economic benefits
- plan implementation.

In December 2008 and April 2012, the *Mid-term audit of performance report of the Forest Management Plan 2004–2013*¹¹³ and *Forest Management Plan 2004–2013 End-of-term audit of performance report*¹¹⁴ respectively were submitted to the EPA. These audits reported against the actions and KPIs under the modified format of the Montréal Process Criteria and used the best available data from State Government agencies, primarily Parks and Wildlife, FPC and the Conservation Commission.

While this level of monitoring and reporting meets WA statutory requirements, the Parties have reviewed the collection of monitoring results against the suite of Montréal Process indicators adopted within Australia. To this end, the Parties have identified the relevant WA KPIs and other reporting mechanisms or processes that can be used to provide information against each of the 44 national indicators in **Appendix 11**.

¹¹³ Conservation Commission of Western Australia (2008). conservation.wa.gov.au/media/7582/fmp_mid_term_audit_report_200308.pdf

¹¹⁴ Conservation Commission of Western Australia (2012). conservation.wa.gov.au/management-planning/management-plans/forest-management-plan-2004-2013.aspx

Appendix 1 | Comprehensive, Adequate and Representative reserve system

1. The Comprehensive, Adequate and Representative (CAR) Reserve System comprises gazetted reserves, formal reserves proposed under the Forest Management Plan, new formal reserves and CAR informal reserves as shown on Map 1.
2. The CAR reserve system will total 1,047,201 hectares, which is 44% of the public land in the region or 25% of the entire region. The CAR reserve system will comprise:
 - (a) 422,512 hectares of gazetted reserves;
 - (b) 268,896 hectares of formal reserves proposed under the Forest Management Plan;
 - (c) 205,009 hectares of new formal reserves;
 - (d) 137,886 hectares of CAR informal reserves in State Forest; and
 - (e) 12,898 hectares of CAR informal reserves on Commonwealth land.
3. The reservation level in the CAR reserve system for forest ecosystems, old-growth forest, other natural values, ecological vegetation systems and vegetation complexes are detailed in Table 1, 2, 3, 4 and 5 respectively.
4. Map 1 and Table 6 identify those reserves requiring implementation by the State as a consequence of this Agreement.

Milestone

5. Areas have been identified as indicative areas printed at a map scale of 1:250,000 and held as an electronic layer. The State will finalise boundaries on 1:25,000 maps to enable gazettal. Finalisation will include identifying best management boundaries. Wherever possible, these will follow easily identifiable features such as cadastre and roads and natural or ecological boundaries. Finalisation will also consider field verification of values being protected, and appropriate boundaries mapped to protect the identified values.

The milestone and ongoing commitments were achieved in Period 1, Period 2 and Period 3.

The *Protecting our old-growth forests* policy (2000) resulted in significant additions to the CAR reserve system within the WA RFA region. Under this policy and other policy settings introduced through the FMP 2004–2013, the CAR reserve system in December 2009 totalled 1,270,570ha, which was 53 per cent of the public land in the WA RFA region or 30 per cent of all land within the WA RFA region.

As at December 2014, the CAR reserve system totalled 1,292,454ha, which was 52 per cent of the public land in the WA RFA region or 30 per cent of all land within the WA RFA region. While there has been a significant increase in the area of the CAR reserve system during Period 3, the minor reduction in the proportion it comprises of public land (from 53 to 52 per cent) arises from updates in 2013 to the tenure of lands managed by other State Government agencies within the WA RFA Region.

The area of existing and proposed CAR reserves in 1999 was shown on Map 1 (of the WA RFA) and the CAR reserve system in December 2014 is shown on **Map 2** of this report.

The reservation status of forest ecosystems and old-growth forests in 2014 are shown in **Tables 12 and 13** respectively. Notably, there has been a net increase of 2321ha in the area mapped as old-growth forest during Period 3, most of which has been identified from surveys conducted during the planning phase for disturbance operations in the Karri, Jarrah North East and Jarrah Unicup forest ecosystems.

Table 12: Reservation levels of forest ecosystems within existing and proposed reserves within the WA RFA region as at 2014

| Forest ecosystem | Pre-1750 area (ha) | Present area on public land** (ha) | CAR Reserve System | | | | | Other informal reserves (ha) | Fauna habitat zones (ha) |
|----------------------------------|--------------------|------------------------------------|--------------------|----------------|----------------------------|------------------|------|------------------------------|--------------------------|
| | | | Formal reserves | | CAR informal reserves (ha) | Total CAR | | | |
| | | | Gazetted (ha) | Proposed (ha) | | (ha) | (%) | | |
| Darling Scarp | 29,000 | 5710 | 2431 | 2,102 | 32 | 4565 | 15.7 | 273 | 0 |
| Jarra Blackwood | 343,500 | 270,010 | 76,157 | 15,554 | 5290 | 97,002 | 28.2 | 15,893 | 6480 |
| Jarra Leeuwin | 56,400 | 10,720 | 7735 | 729 | 272 | 8736 | 15.5 | 54 | 0 |
| Jarra Mt Lindesay | 126,600 | 32,590 | 18,904 | 5028 | 181 | 24,113 | 19.0 | 365 | 0 |
| Jarra north east | 717,100 | 281,030 | 49,312 | 65,289 | 9320 | 123,922 | 17.3 | 7520 | 8973 |
| Jarra north west | 670,600 | 455,250 | 83,585 | 13,744 | 17,081 | 114,411 | 17.1 | 17,463 | 21,909 |
| Jarra Rate's Tingle * | 1500 | 1160 | 1156 | 0 | 0 | 1156 | 99.6 | 0 | 0 |
| Jarra Red Tingle * | 350 | 220 | 216 | 3 | 0 | 220 | 99.8 | 0 | 0 |
| Jarra Sandy | 107,900 | 66,260 | 17,786 | 6767 | 1249 | 25,802 | 23.9 | 2051 | 2030 |
| Jarra South | 557,300 | 423,580 | 222,566 | 10,902 | 7884 | 241,351 | 43.3 | 24,339 | 5803 |
| Jarra Unicup | 81,000 | 21,290 | 15,348 | 3440 | 2 | 18,790 | 23.2 | 35 | 0 |
| Jarra woodland | 106,400 | 54,450 | 23,612 | 5967 | 15,226 | 44,806 | 42.1 | 7903 | 38 |
| Jarra Yellow Tingle | 11,600 | 8380 | 7675 | 624 | 0 | 8299 | 71.5 | 0 | 0 |
| Sub-total Jarra dominant | 2,809,250 | 1,630,650 | 526,483 | 130,149 | 56,537 | 713,173 | | 75,896 | 45,233 |
| Karri Main Belt | 193,000 | 154,590 | 70,027 | 2114 | 7488 | 79,628 | 41.3 | 13,451 | 1031 |
| Karri Rate's Tingle * | 1100 | 790 | 788 | 0 | 0 | 788 | 99.7 | 0 | 0 |
| Karri Red Tingle | 7200 | 5220 | 5132 | 82 | 0 | 5214 | 72.4 | 0 | 0 |
| Karri West Coast | 14,500 | 4920 | 4245 | 438 | 0 | 4683 | 32.3 | 15 | 0 |
| Karri Yellow Tingle | 15,800 | 11,800 | 11,198 | 549 | 0 | 11,747 | 74.3 | 0 | 0 |
| Sub-total Karri dominant | 231,600 | 177,320 | 91,390 | 3183 | 7,488 | 102,060 | | 13,466 | 1031 |
| Wandoo forest | 363,200 | 115,200 | 42,929 | 22,500 | 5230 | 70,660 | 19.5 | 4449 | 1537 |
| Wandoo woodland | 163,000 | 52,760 | 20,237 | 13,048 | 5577 | 38,861 | 23.8 | 1906 | 401 |
| Sub-total Wandoo dominant | 526,200 | 167,960 | 63,166 | 35,548 | 10,807 | 109,521 | | 6,355 | 1938 |
| Peppermint and coastal heath | 80,100 | 63,280 | 57,335 | 4892 | 153 | 62,379 | 77.9 | 0 | 0 |
| Rocky outcrops | 26,400 | 13,820 | 7600 | 1396 | 1901 | 10,897 | 41.3 | 2530 | 0 |
| Sand Dunes | 11,500 | 11,570 | 11,065 | 246 | 0 | 11,311 | 98.4 | 0 | 0 |
| Shrub, herb and sedgeland | 429,900 | 265,430 | 211,033 | 16,077 | 19,535 | 246,644 | 57.4 | 11,313 | 0 |
| Swamps | 15,300 | 6850 | 6070 | 324 | 130 | 6524 | 42.6 | 293 | 0 |
| Whicher Scarp " | 23,700 | 4000 | 417 | 1768 | 257 | 2442 | 10.3 | 155 | 26 |
| Bullich and Yate * | 2800 | 2720 | 1642 | 671 | 0 | 2313 | 85.0 | 158 | 16 |
| Other *** | n/a | n/a | 16,332 | 7489 | 689 | 24,510 | n/a | 1,413 | 277 |
| Sub-total Other | 589,700 | 367,670 | 311,494 | 32,863 | 22,665 | 367,020 | | 15,862 | 319 |
| GRAND TOTAL | 4,156,750 | 2,343,600 | 992,533 | 201,743 | 97,497 | 1,291,774 | | 111,579 | 48,521 |

* Rare ecosystem with 100 per cent reservation target of current area.

** The extant area of each forest ecosystem was derived for the 1999 RFA by adding an estimated area on private land to a spatially represented area on public land. In 2014, present areas are provided for public land only in the absence of recalculated estimates for private land.

*** This category includes water, exotic species, cleared and unclassified land.

“ A new 'Whicher Scarp' ecosystem has been identified which was formerly part of the Jarra Blackwood ecosystem.

Table 13: Old-growth forest within proposed and existing reserves within the WA RFA region as at 2014

| Forest ecosystem | Present area on public land** (ha) | CAR Reserve System | | | | | Other informal reserves (ha) | Total reserved | | |
|----------------------------------|------------------------------------|--------------------|---------------|----------------------------|----------------|-------|------------------------------|----------------|-------|----|
| | | Formal reserves | | CAR informal reserves (ha) | Total CAR | | | (ha) | (%) | |
| | | Gazetted (ha) | Proposed (ha) | | (ha) | (%) | | | | |
| Darling Scarp “ | 151 | 97 | 0 | 7 | 104 | 68.7 | 7 | | | |
| Jarrah Blackwood | 45,464 | 38,993 | 4096 | 303 | 43,392 | 95.4 | 2061 | 45,491 | 99.9 | # |
| Jarrah Leeuwin * | 484 | 477 | 7 | 0 | 484 | 100.0 | 0 | 489 | 100.0 | |
| Jarrah Mt Lindesay | 12,464 | 11,262 | 840 | 62 | 12,164 | 97.6 | 300 | 12,172 | 97.7 | ## |
| Jarrah North East * | 13,217 | 2864 | 8746 | 307 | 11,917 | 90.2 | 1264 | 12,896 | 100.0 | |
| Jarrah North West * | 8003 | 6974 | 446 | 308 | 7729 | 96.6 | 214 | 7897 | 99.6 | # |
| Jarrah Rate’s Tingle * | 1091 | 1091 | 0 | 0 | 1091 | 100.0 | 0 | 1091 | 100.0 | |
| Jarrah Red Tingle * | 214 | 211 | 3 | 0 | 214 | 100.0 | 0 | 214 | 100.0 | |
| Jarrah Sandy * | 2224 | 2109 | 95 | 8 | 2212 | 99.4 | 12 | 2223 | 100.0 | |
| Jarrah South | 151,307 | 136,512 | 5201 | 679 | 142,392 | 94.1 | 8915 | 151,268 | 100.0 | |
| Jarrah Unicup | 4517 | 3984 | 255 | 2 | 4241 | 93.9 | 21 | 4251 | 100.0 | |
| Jarrah Woodland | 12216 | 10,441 | 1019 | 630 | 12,090 | 99.0 | 126 | 11,989 | 99.6 | # |
| Jarrah Yellow Tingle | 7074 | 6652 | 422 | 0 | 7074 | 100.0 | 0 | 7074 | 100.0 | |
| Sub-total Jarrah dominant | 258,426 | 221,667 | 21,130 | 2306 | 245,104 | | 12,920 | 257,055 | | |
| Karri Main Belt | 53,210 | 46,380 | 521 | 1150 | 48,050 | 90.3 | 5160 | 51,927 | 100.0 | |
| Karri Rate’s Tingle * | 731 | 731 | 0 | 0 | 731 | 100.0 | 0 | 731 | 100.0 | |
| Karri Red Tingle | 3288 | 3214 | 74 | 0 | 3288 | 100.0 | 0 | 3288 | 100.0 | |
| Karri West Coast * | 516 | 469 | 46 | 0 | 516 | 100.0 | 0 | 519 | 99.4 | # |
| Karri Yellow Tingle | 6956 | 6760 | 196 | 0 | 6956 | 100.0 | 0 | 6956 | 100.0 | |
| Karri South Coast ^ | 363 | 295 | 68 | 0 | 363 | 100.0 | 0 | 362 | 100.0 | |
| Sub-total Karri dominant | 65,064 | 57,849 | 905 | 1150 | 59,904 | | 5,160 | 63,783 | | |
| Wandoo forest * | 8923 | 4770 | 2835 | 351 | 7956 | 89.2 | 922 | 8797 | 99.9 | # |
| Wandoo woodland * | 3192 | 1790 | 1026 | 228 | 3043 | 95.3 | 149 | 3243 | 99.9 | # |
| Sub-total Wandoo dominant | 12,115 | 6560 | 3861 | 579 | 10,999 | | 1071 | 12,040 | | |
| GRAND TOTAL | 335,605 | 286,076 | 25,896 | 4035 | 316,007 | | 19,151 | 332,878 | | |

* Rare or depleted ecosystem.

** Extant area figures are available for public lands only.

^ The majority is located outside of the WA RFA region.

“ Darling Scarp old-growth forest includes jarrah and wandoo dominant forest.

Remainder occurs on other public land not vested in the Conservation Commission of WA.

Remainder occurs in Redmond forest block (outside the WA RFA region) but is protected through management plans.

1. *Formal reserves*

6. The following changes to tenure [as listed in Table 6] will be progressed under State processes.

7. All existing gazetted and new formal reserves proposed in the Forest Management Plan 1994-2003 shown on Map 1 which will not be subject to changes in tenure or purpose as documented in Table 6, will retain the classification of formal reserve as proposed in the Forest Management Plan 1994-2003 and depicted in maps 1, 2 and 3 in that Plan.

Milestone

8. Interim management guidelines will be prepared for CALM managed lands listed in Table 6 within twelve months of the signing of this Agreement. Management Plans for these lands will be developed and implemented progressively as required.

9. Areas that were proposed as a Formal Reserve in the Forest Management Plan 1994-2003, but are now intended to remain as State forest under this Agreement, will continue to be managed as a proposed reserve in accordance with the Forest Management Plan 1994-2003, until a new Forest Management Plan that implements a change in intention is gazetted.

The milestone and ongoing commitments were achieved in part in Period 1, Period 2 and Period 3.

The end-term-audit of the performance report of the FMP 2004–2014 (March 2012) reported on the progress to implement reserve proposals. The report noted that while 88 per cent of the area proposed to be reserved had been fully implemented, there continued to be a delay in finalising the remaining proposed reserves. This was due mainly to circumstance outside Parks and Wildlife's control. The key issues relate to:

- resolving native title over the south-west¹¹⁵
- DMP's requirements for access to proposed conservation reserves for exploration and mining
- rights of SAA mining lessees.

Where possible, Parks and Wildlife manages land according to the proposed tenure. This means that an area proposed to change from State forest to a reserve category such as a national park will be managed as if it is a national park.

The status of these formal and informal reserves has been updated in Appendix 1 and Appendix 11 of the FMP 2014–2023.

To December 2014, area management plans or draft area management plans¹¹⁶ have been prepared for the following reserves in the WA RFA area in accordance with Part V of the CALM Act:

- | | |
|---|------|
| • Beeliar Regional Park | 2006 |
| • Forestdale Lake Nature Reserve | 2005 |
| • Jandakot Regional Park | 2010 |
| • Lake McLarty | 2008 |
| • Lane Poole Reserve and proposed reserve additions | 2011 |
| • <i>Perup Management Plan</i> | 2012 |
| • Rockingham Lakes Regional Park | 2010 |

¹¹⁵ Native title over the south-west will be resolved once the National Native Title Tribunal, under the Native Title Act 1993, registers the Indigenous Land Use Agreements.

¹¹⁶ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/parks/management-plans

- *Tuart Forest National Park Management Plan* 2014
- *Walpole Wilderness Management Plan* 2008
- *Wellington National Parks, Westralia Conservation Parks and Wellington Discovery Forest Management Plan* 2008
- Yanchep and Neerabup parks and reserves 2012

Recognising the community's interest and role in protecting the State's natural environment, draft area management plans are released for public comment. Area management plans outline the key management strategies, identify the range of activities which occur and set KPIs to measure the success of implementing the plans.

2. *CAR informal reserves*

2.1. State forest areas

10. CAR Informal Reserves in State forest total 137,886 hectares and are identified on Map 1. These CAR Informal Reserves have been identified as indicative areas printed at a map scale of 1:250,000 and held as an electronic layer.
11. Areas of land adjoining informal reserves that were accredited by the Commonwealth Scientific Advisory Group for the Deferred Forest Agreement will be designated as informal reserves by Western Australia.
12. The Parties have agreed that CAR informal reserves are the following component of the informal reserve system:
 - (a) Stream reserves of a width equal to or greater than 150 metres;
 - (b) Those informal reserves and adjoining areas of land that were accredited by the Commonwealth Scientific Advisory Group for the Deferred Forest Agreement;
 - (c) Diverse ecotype zones of an area equal to or greater than 40 hectares;
 - (d) 400 m wide travel route reserves in the area containing Karri Yellow Tingle ecosystem; and
 - (e) The Bibbulmun Track travel route reserve (400 metres wide).
13. The Parties have accredited these informal reserves as CAR informal reserves on the basis that they are set aside specifically for conservation purposes and meet the principles established in the JANIS Reserve Criteria.
14. CAR Informal Reserves in State forest will be recognised in future Forest Management Plans.
15. The Department of Conservation and Land Management will identify CAR Informal Reserves on State forest on operational and planning maps and manage the areas for the identified CAR values.
16. The State will finalise boundaries on 1:25,000 maps. Finalisation will consider field verification of values being protected, and appropriate boundaries mapped to protect the identified values.
17. The boundaries to CAR Informal Reserves in State forest may be reviewed and amended by the Department of Conservation and Land Management in the following circumstances:
 - Circumstance 1. Field inspections or improved mapping indicate that amendments are required to create practical management boundaries or to more accurately reflect the location of the value.
 - Circumstance 2. The area does not contain the values for which it was identified.
 - Circumstance 3. Existing boundaries are found to place unreasonable restrictions on the practical access to areas outside the CAR Reserve system for forest-based industry or for infrastructure development.

18. Amendments to the boundaries of CAR Informal Reserves in State forest will be assessed by the Department of Conservation and Land Management according to whether they:
- Condition 1. Comply with clauses 67 and 72 of this Agreement.
 - Condition 2. Use best endeavours to maintain the levels of protection of National Estate values in a regional context.
 - Condition 3. Maintain a widely-distributed, inter-connected network of protected areas.
 - Condition 4. Maintain the Sustained Yield of areas available for timber harvesting in terms of volume, species and quality.
 - Condition 5. Optimise the inclusion of areas that are unavailable for timber harvesting due to other considerations such as slope, access and site quality.
 - Condition 6. Avoid conflict with strategic burning zones.
19. Changes to the CAR Informal Reserves in State forest will be reported in relation to the circumstances and conditions in clauses 17 and 18 above and included in the five-yearly reviews/report on performance.
20. CAR Informal Reserves will be managed according to the principles established in the Forest Management Plan 1994-2003 for “Managing Area of Special Significance” and “Code of Practice for Timber Harvesting in Western Australia” and timber harvesting will be excluded from all CAR Informal Reserves.

These commitments were achieved in part in Period 1 and Period 2 and achieved in Period 3.

Recognition of the CAR informal reserves listed at 12 (a) to (e) above has been carried forward in the FMP 2014–2023. These areas continued to be managed in accordance with the *Guidelines for the Protection of the Values of Informal Reserves and Fauna Habitat Zones* (October 2009). Harvesting for wood products is excluded from all CAR informal reserves.

By December 2014, the CAR informal reserve system on lands managed by Parks and Wildlife was 84,585ha (**Table 14**), which is a reduction from the area reported in the previous WA RFA progress report of 86,319ha.

Apart from the inclusion of more than 50,000ha of CAR informal reserves in proposed formal reserves under the FMP 2004–2013, changes to the CAR informal reserves were the result of variations arising from:

- further additions to the formal reserves proposed in the FMP 2014–2023
- ongoing minor refinement of boundaries of formal reserves and State forest
- an improved method to determine eligible areas of diverse ecotype zones (greater than 40ha as stand-alone or any area attached to other CAR reserves)
- refined mapping of diverse ecotype zones, or
- changes to any CAR informal reserve approved through a documented process. This includes variations to the spatial location of parts of the Bibbulmun Track, travel routes and trails incorporated into the FMP 2014–2023.

These changes are the result of data management and design processes that were examined by the Independent Expert Panel reviewing the calculation of sustained yields for the FMP 2014–2023. They concluded:

Recommendation 2.1, Area database: The processes used in maintaining and adjusting the GIS and FMIS databases are mature, flexible, robust and documented well. The Panel is satisfied that the identification and verification of net productive area meets best practice standards.

Table 14: Changes to the CAR informal reserves on Parks and Wildlife-managed land (hectares)

| | |
|-----------------------------------|--------|
| Area at December 2009 | 86,319 |
| area lost to - | |
| formal reserves | 1618 |
| other informal reserves | 1355 |
| other State forest | 2086 |
| outside Parks and Wildlife estate | 495 |
| area gained from - | |
| formal reserves | 165 |
| other informal reserves | 1815 |
| other State forest | 1685 |
| outside Parks and Wildlife estate | 155 |
| Area at December 2014 | 84,585 |

The ecological vegetation systems (EVS) in **Table 15** were developed from an aggregation of the vegetation complexes mapped and described in the publication Mattiske EM and Havel JJ (1999) *Vegetation Mapping in the South West of Western Australia*. They are an aggregation of vegetation assemblage, climatic zones (defined in terms of median rainfall discounted by summer evaporation) and landform pattern.

Table 15: Reservation levels of ecological vegetation systems as at 2014

| EVS | Present area (ha) * | CAR reserve system | | | | Other informal reserve (%)s | Fauna habitat zones (%) |
|-----|---------------------|--------------------|--------------|------------------|---------------|-----------------------------|-------------------------|
| | | Formal reserves | | CAR informal (%) | Total CAR (%) | | |
| | | Gazetted (%) | Proposed (%) | | | | |
| Ac2 | 21,820 | 64.1 | 2.9 | 2.3 | 69.3 | 1.8 | 1.4 |
| Ac3 | 1784 | 22.1 | | | 22.1 | | |
| Ac4 | 3083 | | 1.5 | 18.0 | 19.5 | 7.5 | 2.0 |
| Ac7 | 23,648 | 43.2 | 16.1 | 4.8 | 64.1 | 1.2 | |
| Ac8 | 1623 | 67.3 | 8.3 | | 75.6 | | |
| Ak6 | 11,296 | 59.5 | 8.8 | 2.9 | 71.2 | 1.8 | |
| An0 | 889 | 3.0 | | | 3.0 | | |
| Bk7 | 79,753 | 29.4 | 4.9 | 5.8 | 40.2 | 12.3 | 2.0 |
| Bw8 | 69,968 | 71.7 | 8.0 | 2.3 | 82.1 | 2.4 | 0.1 |
| Cv1 | 3574 | 7.9 | 0.6 | | 8.5 | | |
| Cv2 | 358 | 44.9 | | | 44.9 | | |
| Cw0 | 1654 | 20.2 | | | 20.2 | | |
| Ds0 | 8621 | 4.6 | 3.4 | | 8.0 | | |
| Ds2 | 3429 | 9.4 | 0.3 | | 9.7 | | |
| Ev2 | 6598 | 0.8 | 1.5 | 0.1 | 2.4 | | |
| Ev5 | 13,390 | 57.6 | 2.1 | 1.1 | 60.8 | 3.6 | |
| Fv3 | 7311 | 6.2 | 0.9 | | 72 | 0.3 | |
| Fv4 | 1312 | 0.7 | | | 0.7 | | |
| Fv5 | 1449 | 2.6 | 1.1 | 0.3 | 4.0 | 0.8 | |
| Fw5 | 9182 | 25.2 | 6.1 | 9.3 | 40.6 | 7.7 | 8.9 |
| Gw3 | 3195 | 22.3 | | | 22.3 | | |
| Gw4 | 7236 | 4.0 | 8.3 | 11.7 | 23.9 | 8.2 | 4.9 |
| Gw5 | 12,457 | 19.3 | 0.8 | 13.2 | 33.4 | 16.1 | 3.5 |
| Gw6 | 8296 | 60.0 | 5.8 | 0.4 | 66.2 | 1.5 | |
| Gw9 | 31,429 | 87.5 | 3.2 | 0.1 | 90.8 | | |

| EVS | Present area (ha) * | CAR reserve system | | | | Other informal reserve (%)s | Fauna habitat zones (%) |
|-----|---------------------|--------------------|--------------|------------------|---------------|-----------------------------|-------------------------|
| | | Formal reserves | | CAR informal (%) | Total CAR (%) | | |
| | | Gazetted (%) | Proposed (%) | | | | |
| HI6 | 111,156 | 12.0 | 0.9 | 11.2 | 24.1 | 10.3 | 5.0 |
| Ia8 | 30,074 | 96.6 | 2.2 | | 98.8 | | |
| Ic2 | 682 | 27.7 | 0.9 | 3.0 | 31.7 | | |
| Ic5 | 5714 | 2.4 | 4.7 | 7.6 | 14.7 | 8.8 | 3.8 |
| Ic6 | 1084 | | 31.1 | 0.3 | 31.4 | 1.1 | |
| Ig0 | 7628 | 1.8 | 4.9 | | 6.7 | | |
| Ig3 | 1829 | 2.4 | | | 2.4 | | |
| Ip3 | 123,814 | 15.1 | 16.1 | 1.0 | 32.2 | 1.8% | 3.0 |
| Ip8 | 3044 | 44.8 | | 0.4 | 45.2 | 6.7 | 0.4 |
| Iw8 | 7086 | 60.1 | 4.0 | 3.3 | 67.5 | 6.0 | |
| JG4 | 26,195 | 19.4 | 15.8 | 0.2 | 35.5 | 0.7 | 1.8 |
| JP3 | 19,278 | 69.8 | 2.0 | | 71.8 | 0.1% | |
| JP4 | 71,379 | 23.3 | 4.8 | 2.4 | 30.6 | 1.5 | 2.8 |
| JP6 | 208,164 | 10.8 | 2.7 | 2.6 | 16.0 | 1.8 | 5.1 |
| Ja4 | 596 | | 34.8 | | 34.8 | | |
| Ja8 | 16,356 | 86.5 | 6.4 | | 92.9 | | |
| Jc6 | 1895 | | | 2.6 | 2.6 | 59.5 | 2.8 |
| Jc8 | 2907 | 92.0 | | 0.3 | 92.2 | 0.5 | |
| Jg4 | 7209 | 9.7 | 4.5 | 2.8 | 16.9 | 2.8 | 5.3 |
| Jg5 | 153,622 | 25.3 | 4.8 | 2.2 | 32.4 | 3.6 | 2.1 |
| Jg6 | 16,240 | 60.6 | 8.0 | 0.4 | 69.0 | 1.1 | |
| Jk6 | 2740 | 84.1 | 6.6 | | 90.7 | | |
| Jk8 | 6453 | 65.5 | 15.8 | 0.1 | 81.4 | 0.1 | |
| Jm8 | 4758 | 31.3 | 3.3 | 1.4 | 36.1 | 2.1 | |
| Jn5 | 2841 | 9.2 | 35.5 | 5.3 | 50.1 | 1.7 | 0.9 |
| Jp2 | 6,666 | 3.4 | 2.1 | | 5.5 | | |
| Jp3 | 19,201 | 12.7 | 14.7 | | 27.4 | | |
| Jp4 | 2374 | 30.7 | 5.4 | | 36.1 | 0.1 | |
| Jp5 | 90,935 | 47.3 | 2.9 | 0.6 | 50.8 | 1.6 | 2.5 |
| Jp6 | 4573 | 16.7 | 7.7 | | 24.4 | | |
| Jp9 | 8875 | 31.4 | 3.5 | 1.8 | 36.6 | 0.3 | |
| Jv3 | 5224 | 10.2 | 4.6 | | 14.8 | | |
| Jw5 | 28,054 | 47.8 | 3.8 | 1.8 | 53.4 | 3.7 | 2.7 |
| Jw7 | 10,922 | 14.1 | | 2.4 | 16.5 | 13.7 | 0.7 |
| KI9 | 27,257 | 63.8 | 4.8 | 2.3 | 70.9 | 8.3 | |
| Km8 | 47,598 | 16.1 | 0.6 | 5.8 | 22.4 | 18.3 | 1.1 |
| Km9 | 7807 | 39.4 | 1.6 | 2.9 | 43.9 | 1.0 | |
| Ko8 | 6890 | 77.3 | 4.6 | | 81.8 | | |
| Kp8 | 51,481 | 36.0 | 0.3 | 1.7 | 38.0 | 7.3 | 1.0 |
| Ks8 | 48,416 | 44.7 | 2.1 | 12.4 | 59.2 | 6.9 | 0.3 |
| Kv7 | 3910 | 60.3 | | 9.4 | 69.7 | 7.5 | |
| L | 6251 | 23.2 | 1.9 | 0.2 | 25.3 | | |
| MS5 | 12,034 | 39.9 | 9.9 | 3.9 | 53.7 | 2.0 | 0.6 |
| Mb2 | 455 | 25.5 | 2.55 | | 28.0 | | |
| Mb5 | 1142 | | | | | | |
| Mk8 | 5878 | 44.6 | 1.5 | 11.1 | 57.3 | 0.9 | |
| Mm4 | 2888 | 14.2 | 7.6 | | 21.8 | 1.5 | |
| Mm5 | 28,665 | 11.4 | 6.6 | 3.5 | 21.5 | 10.5 | 4.8 |
| Mm6 | 2636 | 12.0 | 1.5 | | 13.5 | | |
| Mn5 | 3642 | 61.5 | 0.6 | 8.4 | 70.5 | 1.4 | |
| Mn6 | 47,836 | 28.3 | 8.4 | 3.5 | 40.2 | 9.1 | 1.7 |
| Mp8 | 161,670 | 40.4 | 2.8 | 1.3 | 44.4 | 5.3 | 0.4 |
| Ms4 | 4218 | 20.2 | 0.3 | | 20.5 | 0.4 | |
| Ms5 | 28,553 | 11.0 | 6.7 | 1.0 | 18.7 | 4.9 | 1.3 |

| EVS | Present area (ha) * | CAR reserve system | | | | Other informal reserve (%)s | Fauna habitat zones (%) |
|-----|---------------------|--------------------|--------------|------------------|---------------|-----------------------------|-------------------------|
| | | Formal reserves | | CAR informal (%) | Total CAR (%) | | |
| | | Gazetted (%) | Proposed (%) | | | | |
| Ms6 | 1144 | 35.2 | 2.2 | | 37.4 | | |
| Ms8 | 2860 | 23.6 | 8.6 | 1.8 | 34.1 | 8.6 | |
| NM5 | 6962 | 34.8 | | 15.9 | 50.8 | 11.0 | 3.2 |
| NM6 | 51,845 | 34.7 | 3.4 | 7.4 | 45.5 | 5.0 | 2.8 |
| Nm5 | 34,341 | 29.8 | 1.8 | 6.3 | 37.9 | 9.5 | 1.3 |
| Po8 | 14,589 | 70.3 | 19.6 | | 89.9 | | |
| Po9 | 15,550 | 96.2 | 0.3 | | 96.5 | | |
| Py7 | 11,146 | 82.2 | 5.9 | | 88.1 | | |
| Py8 | 2776 | 9.9 | 7.8 | | 17.8 | | |
| Py9 | 26,049 | 94.9 | 0.3 | | 95.2 | | |
| Qm7 | 370 | 80.2 | 3.1 | | 83.2 | | |
| Qu7 | 6124 | 70.6 | 8.3 | | 78.9 | | |
| Qu8 | 7264 | 39.6 | 25.6 | | 65.2 | | |
| Qu9 | 11,427 | 99.7 | | | 99.7 | | |
| Ra8 | 913 | 100.0 | | | 100.0 | | |
| Rs3 | 29,779 | 23.1 | 10.8 | 4.5 | 38.4 | 2.9 | 2.0 |
| Rs4 | 10,289 | 19.5 | 19.5 | 0.3 | 39.3 | 1.2 | |
| Rs5 | 647 | 85.8 | 5.5 | | 91.2 | | |
| Rs7 | 836 | 51.5 | 12.2 | 0.1 | 63.8 | 17.3 | |
| Sv6 | 58,516 | 97.0 | 1.3 | | 98.4 | | |
| Sv8 | 18 | 47.2 | 27.7 | | 75.0 | | |
| Sv9 | 20,500 | 95.9 | 2.1 | 0.4 | 98.5 | 0.2 | |
| Sw3 | 40,959 | 28.8 | 11.2 | 17.6 | 57. | 5.4 | 1.4 |
| Sw4 | 585 | 3.6 | | | 3.6 | | |
| Sw5 | 5420 | 61.1 | 23.8 | | 84.9 | | |
| Sw6 | 4930 | 52.1 | 5.6 | 11.4 | 69.1 | 1.7 | |
| Sw7 | 10,685 | 65.3 | 6.8 | 2.8 | 75.0 | 0.4 | |
| Ta8 | 53,499 | 78.6 | 4.1 | 0.3 | 83.0 | 1.0 | |
| Vp1 | 83,171 | 27.3 | 14.1 | 2.3 | 43.7 | 0.4 | 0.3 |
| Vp2 | 83,007 | 9.4 | 24.5 | 9.2 | 43.2 | 1.4 | 2.0 |
| WM2 | 40,891 | 23.4 | 6.8 | 7.1 | 37.3 | 4.5 | 1.5 |
| WS2 | 12,986 | 40.0 | 8.2 | | 48.2 | | |
| WI1 | 58,660 | 10.8 | 22.7 | 3.8 | 37.3 | 3.8 | 0.7 |
| WI2 | 129,051 | 18.8 | 15.8 | 4.4 | 39.0 | 6.6 | 3.0 |
| Wm1 | 39,610 | 6.7 | 13.2 | 4.7 | 24.7 | 0.2 | 0.3 |
| Wm2 | 16,221 | 9.9 | 14.4 | | 24.3 | 0.5 | |
| Wm4 | 43,674 | 53.6 | 4.0 | 0.7 | 58.4 | 2.5 | 1.3 |
| Yv4 | 23,410 | 57.4 | | 3.5 | 60.9 | 1.2 | |
| Zv4 | 19,065 | 27.4 | 13.6 | | 41.0 | | |
| Zv9 | 931 | 80.7 | 5.5 | 0.1 | 86.3 | | |

* The present area of a number of ecological vegetation systems have increased from the 1999 RFA values due to improved mapping of remnant vegetation on private land. The reservation levels have altered accordingly.

2.2 Commonwealth land

21. CAR Informal Reserves on Commonwealth land total 12,898 hectares and are identified on Map 1.

22. The Commonwealth agrees to manage those areas of Commonwealth owned land identified in the Bindoon Training Area as CAR Informal Reserves for the protection of identified CAR values, on the following conditions:

Condition 1. That the reserve boundary encompasses only that area that actually contains the CAR values.

Condition 2. That the reserve does not exclude Defence activities that would not compromise the maintenance of the CAR values.

Condition 3. That the establishment of the reserve is based on the development of Defence management arrangements (i.e. Defence Environmental Management Plans) rather than any modification to existing tenures which may be detrimental to Defence's usage of the training areas.

Condition 4. That Defence is the sole approving agency for the Defence Environmental Management Plans that prescribe the management regime for the reserve. Defence will however consult with relevant State and Commonwealth agencies on the appropriateness of the management regimes.

Condition 5. Consultation on Defence management of Defence activities in the training areas will be achieved in the consultation process with State and Local authorities in the development and review of the Environmental Management Plans for the Bindoon Training Area.

Condition 6. Public comment on changes to reserve boundary will occur except in circumstances proscribed by national defence protocols.

Condition 7. The reserve boundary will delineate the actual CAR values. Defence will establish all operational and environmental management buffer zones around the reserve based on particular land use activities that may occur adjacent to the reserves. The buffer zones will be identified in the Defence Environmental Management Plans.

23. The Department of Defence will identify this CAR Informal Reserve on Commonwealth land on operational and planning maps.

24. These CAR Informal Reserves on Commonwealth land will be included in future Environmental Management Plans (EMP) for the area. A revised EMP including this CAR Informal Reserve will be prepared with public participation, by the year 2003, subject to national security considerations.

These ongoing commitments were achieved in part in Period 1, Period 2 and Period 3.

The Department of Defence (Defence) continued to manage the natural values of Bindoon Defence Training Area (BDTA) in general alignment with the seven conditions outlined in this clause. These conditions were generally appropriate, noting the change to a national Defence Environmental Management System (Defence EMS). Defence continues to work closely with relevant State Government agencies to develop and implement components of the EMS, for example bushfire management plans.

The Defence EMS and associated plans cover all the forest and biodiversity values of the BDTA and Defence does not separately map the CAR reserve system as sites were afforded adequate protection and management under the existing plans. An overview of the Defence EMS is publicly available¹¹⁷.

Operating at the level below the Defence EMS, a State-wide environmental management plan is in place, with site specific management strategies for the BDTA identified. Additionally, significant site-level management plans have been developed and implemented including the *Bindoon Defence Training Area Bushfire Management Plan 2016–2020*, *Dieback Management Plan 2014* and the *Bindoon Defence Training Area Heritage Management Plan 2009*. These plans are generally only distributed to parties with direct

¹¹⁷ Department of Defence (n.d.). defence.gov.au/environment/

responsibility for actions or a defined need to know due to the nature of the Defence assets within the BDTA, for example the Bushfire Management Plan 2016–2020 is provided to DFES, DPaW and the neighbouring local government authorities.

The 2009 review of the natural heritage values of the BDTA confirmed the site still met criteria against which the BDTA was placed on the Commonwealth Heritage List.

The boundaries of the BDTA remained unchanged and the area identified on Map 1 of the WA RFA remained within Commonwealth land.

Appendix 2 | Public reporting and consultative mechanisms

Attachment 4 to the WA RFA tables documents, actions or processes relating to public reporting and consultative mechanisms that have been implemented by relevant State departments or agencies. The public reporting mechanisms and ongoing opportunities for public participation and consultation associated with the existing WA processes, instruments and actions identified within the WA RFA have continued during the review period.

The mechanisms in the attachment to the WA RFA have not been reported against in this review period unless there was specific activity relevant to the review period. This is because the public reporting and consultative mechanisms range from those that cover ongoing processes to those with prescribed periods underpinning the mechanism and those on an ‘as required’ basis.

Improvements to consultative mechanisms

In addition to improvements to consultation mechanisms in Attachments 5, 6 and 10, the State intends to further develop its consultative mechanisms applying to the south-west forest region by:

Milestone

1. Reviewing the processes for the involvement of communities in planning for cultural heritage conservation by 2002.

This milestone was achieved in Period 1, Period 2 and Period 3.

The Parties continue to review the process for involving the community in planning for cultural heritage and conservation. The response to this appendix and **Appendix 6** provides an overview of the significant advances made in consulting with or opportunities for the community to provide feedback.

The primary change to consultation for Period 3 relates to the amendments to the CALM Act and WC Act to recognise Aboriginal cultural and heritage values and the opportunity for joint management. The process to prepare the FMP 2014–2023 involved substantial input from Noongar people.

Milestone

2. Consulting a peak stakeholder committee, comprising a wide range of interests, on research priorities within CALM by 1999.

Milestone

3. Establishing scientific advisory committees to facilitate input of external advice to research projects and to aid integration of CALM’s strategic research planning with research priorities of other organisations, agencies and institutions by 1999.

These milestones were achieved in Period 2 and Period 3.

In 2004, the Conservation Commission established a Research Advisory Committee (RAC), the purpose of which was to identify and provide advice on scientific and social research priorities that would make the most strategic improvement in biodiversity conservation outcomes for WA. It was also intended that the RAC would aid the State’s biodiversity research effort through encouraging better integration of research across government, including the tertiary education sector and CSIRO.

In 2007, the Conservation Commission decided to consider alternative approaches to facilitate input of external advice on research planning and priorities. In the findings from the mid-term audit of performance of the FMP 2004–2013, the Conservation Commission committed to resurrect the RAC but this has not occurred.

However, the intent of the milestone has been met through other processes such as external reports commissioned for the development of the FMP 2014–2023 and collaboration with universities and CRCs on research projects which align with the forest management objectives. **Appendix 7** outlines the body of scientific work carried out that has contributed to the ongoing enhancement of forest practices in WA.

Milestone

4. Extending the use of operational planning on a periodic and integrated basis and introducing the opportunity for public examination of “look ahead” plans by 2002.

The milestone was achieved in Period 1, Period 2 and Period 3.

Since 1999, indicative timber harvest plans have been prepared for State forest and timber reserves. The preparation of rolling three-year indicative plans and annual plans was required by the FMP 2004–2013, and has been carried forward into the FMP 2014–2023. The three-year harvest plans are published on the Parks and Wildlife website¹¹⁸, and the annual harvest plan on the FPC website¹¹⁹.

Indicative annual prescribed burn plans are prepared and published on the Parks and Wildlife website. Further detail on prescribed burn planning is provided in response to the following clause and Appendices 10 and 12.

Milestone

5. Considering publishing medium-term fire management plans which include an outline of the ecological basis for burning regimes by 2000.

The milestone was achieved in Period 1, Period 2 and Period 3.

Since 2000, annual burn plans and medium-term master burn plans have been made publicly available. Parks and Wildlife continues to prepare master burn plans for each region across WA. The community are given opportunity to contribute to these plans. Area operational burn plans are available through Parks and Wildlife offices and notification of prescribed burns are available to the public through the Parks and Wildlife website¹²⁰.

During Period 3, Parks and Wildlife started a major initiative to develop regional fire management plans. These plans delineate fire management areas based on fuel types and loads, biogeography and land use, and set objectives, strategies and success criteria for fire management over a five-year planning horizon. They underpin the development of seasonal prescribed fire programs, indicative multi-season prescribed fire programs and prescribed fire plans, as well as playing an important part in assessing the effectiveness of these programs and facilitating adaptive management.

The plans are developed collaboratively by Fire Management, Nature Conservation, Sustainable Forest Management and Parks and Visitors Services regional and district staff to ensure that all facets of Parks and Wildlife’s business is considered in context of the department’s fire management responsibilities. The *Regional Fire Management Plan for the Swan Region* was completed in 2014, and region plans for the South West and Warren are currently in development, with an anticipated December 2018 completion date¹²¹.

¹¹⁸ Department of Parks and Wildlife (2014d). dpaw.wa.gov.au/management/forests/forest-produce/175-planning-for-timber-harvesting

¹¹⁹ Forest Products Commission Western Australia (n.d.). fpc.wa.gov.au/harvest-plans

¹²⁰ Department of Parks and Wildlife (2016). dpaw.wa.gov.au/management/fire/prescribed-burning/burns/indicative

¹²¹ Department of Environment and Conservation (2012a). https://www.dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/1dec_fire_management_planning_webversion_final_2-2-12.pdf

Appendix 3 | Improvement to Western Australia's forest management systems on public land

Attachment 5 of the WA RFA listed 25 items that related to improvements in WA's FMS on public lands.

The State agrees to further develop its Forest Management Systems applying to the South-West Forest Region across agencies and land tenures by:

Milestone

1. Including a commitment in Forest Management Plans to the following nationally agreed principles of ecologically sustainable forest management.

This milestone was achieved in Period 1, Period 2 and Period 3.

As for the FMP 2004–2013, the basis of the approach to forest management in the 2014 to 2023 plan stems from the nationally agreed principles of ESFM. The forests of the south-west area are managed to maintain the suite of forest values for present and future generations, guided by the precautionary principle as required by the WA RFA and the CALM Act.

Milestone

2. Developing and publishing policy related to productive capacity of former mine sites, maintenance of carbon and hydrological cycles, and natural and cultural heritage, in relevant Forest Management Systems.

This milestone was achieved in part in Period 1, Period 2 and Period 3.

Policy guiding ESFM in WA is developed and published through a range of mechanisms including corporate policy statements, guidelines and subsidiary documents such as protocols, procedures, manuals, prescriptions and user guides. Documents relevant to ESFM are listed in **Appendix 10** which outlines WA's FMS.

Establishing and refining policy settings continued through Period 3. The FMP 2014–2023 included preparing and releasing for public comment the Draft FMP 2014–2023 accompanied by a suite of background and supporting documents.

The Draft FMP 2014–2023 outlined a number of management options for consideration by the community that would help inform policy direction. These related to potential impact on carbon, productive capacity and the level of timber yield to be sustained from State forest and timber reserves. In recognition of the potential impact of climate change on hydrological cycles, refinements in policy for the management of salt risk as well as new provisions including silviculture for ecosystem health and silviculture for water production were introduced. As part of this process, the Draft FMP 2014–2023 presented for the first time an indicative estimate of the above and below-ground carbon stocks in live standing trees within the major forest types in south-west forests on lands vested in in the Conservation Commission.

In relation to the productive capacity of former mine sites, Parks and Wildlife negotiates the requirements for hand back of rehabilitated mining areas in State forest on the basis of agreed completion criteria. The key objective of completion criteria is to ensure mine site rehabilitation displays the self-sustaining characteristics of a forest ecosystem to support the assigned land purposes. This allows Parks and Wildlife to manage areas that have been mined and rehabilitated in the long-term in conjunction with surrounding unmined native forest using established forest management practices and without input of extraordinary level of resources.

In February 2011, the *Guidelines for conservation management plans relating to mineral exploration of land managed by the Department of Environment and Conservation* were published and endorsed by DMP prior to publication. An update of the guidelines is planned in order to address planned changes to mining approvals processes.

For Alcoa World Alumina (Alcoa) bauxite mining operations, Parks and Wildlife also developed completion criteria agreed between the company and WA to assist in ensuring that forest that has been mined has been successfully rehabilitated before being returned for management by Parks and Wildlife. Although outside the timeframe of the Period 3 progress report, updates to completion criteria for Alcoa's mining areas started during Period 3, were completed in July 2015 and are available on the Department of State Development's website¹²². Policy was also developed to guide the thinning of former mine sites to maintain productive capacity and provide for hydrological outcomes. With regard to extraction of basic raw materials, the FMP 2014–2023 outlined management activities which seek to minimise the areas affected by bauxite extraction and the potential for other adverse environmental impacts.

During Period 3, new provisions of the CALM Act and WC Act were introduced which enable Aboriginal people to undertake customary activities, such as preparing and consuming food, preparing or using medicine, and engaging in artistic, ceremonial or other customary activities on land vested in the Conservation Commission. Parks and Wildlife worked closely with Aboriginal communities to develop protocols for access for Aboriginal customary activities. Additionally, the amendments to the CALM Act provide for joint management arrangements. Policy development work started during Period 3, resulting in Corporate Policy Statement 87, *Aboriginal Joint Management* (September 2015)¹²³.

3. Introducing into the Western Australian Parliament a revised/new Wildlife Conservation Act and, then reviewing nature conservation strategies, taking into account the recommendations of the Independent Expert Advisory Group.

This commitment was achieved in part in Period 1, Period 2 and Period 3.

The Biodiversity Conservation Bill 2015 was substantially developed during Period 3 and introduced into WA's Parliament in November 2015. The bill was drafted to provide a modern and effective approach to biodiversity conservation and the ecologically sustainable use of biodiversity. It is designed to replace the punitive-based approach of the WC Act with an approach designed to enhance the achievement of biodiversity conservation State-wide through mechanisms covering promotion, encouragement, assistance, negotiation and completely revised penalty and defence provisions.

Regional nature conservation plans provide guidance towards the operational implementation of nature conservation strategies. Parks and Wildlife has an ongoing process which seeks to review and update these plans to reflect emerging priorities and respond to changes in impacts and threatening processes.

Milestone

4. Introducing into the Western Australian Parliament within six months of the signing of this Agreement amendments to the *Conservation and Land Management Act 1984* to remove the Executive Director of CALM as a member of the Lands and Forest Commission and the National Parks and Nature Conservation Authority.

This milestone was achieved in Period 1, Period 2 and Period 3.

This amendment was included in the *Conservation and Land Management Act 1999*, and took effect in November 2000, as reported in the combined first and second five-year progress report.

¹²² Mining and Management Programme Liaison Group (2015). dsd.wa.gov.au/alcoa-s-bauxite-mine-rehabilitation-program

¹²³ Department of Parks and Wildlife (2015b).

Milestone

5. Updating processes, including those related to EP Act and the CALM Act, to allow a more efficient process for the consideration of social, economic and environmental implications in the development, approval and on-going audit of compliance with Forest Management Plans. The review process will be undertaken prior to the publication of the next draft Forest Management Plan.

This ongoing milestone was achieved in Period 2 and Period 3.

The preparation of the FMP 2014–2023 involved extensive community and stakeholder engagement. During the release of the Draft FMP 2014–2023 for public comment in accordance with the CALM Act and the EPA, targeted stakeholder workshops and information sessions supported by a suite of fact sheets and other background information (also published on the Parks and Wildlife website) were conducted across metropolitan and regional areas. Significant engagement with Noongar people was also carried out recognising the CALM Act amendments which acknowledges Aboriginal connection to lands, and enables Aboriginal people to become more involved in managing land and use these areas for customary activities

In March 2012, the Conservation Commission prepared the *Forest Management Plan 2004–2013 End-of-term audit of performance report*. This report included an assessment of performance measured against a range of KPI targets, and included a response to target shortfall where required. The EPA's advice and recommendations to the WA Environment Minister on the mid-term (August 2010)¹²⁴ and end-of-term (June 2012)¹²⁵ audits helped guide and inform the development of the FMP 2014–2023. An updated process for development, approval and audit of performance has been carried through into the FMP 2014–2023.

Milestone

6. Where previous ministerial conditions have been imposed under the EP Act, these conditions and references applying to any previous Forest Management Plan will be revoked and replaced by conditions consistent with the terms of each new Forest Management Plan.

This ongoing milestone was achieved in Period 1, Period 2 and Period 3.

The ministerial conditions imposed under the EP Act on the *Forest Management Plan 1994–2003* (FMP 1994–2003) were revoked and replaced in the FMP 2004–2013. Any requirements of the ministerial conditions imposed under the FMP 1994–2003 with ongoing relevance to forest management were addressed in the FMP 2004–2013 (Statement 000641, 4 December 2003).

The ministerial conditions imposed under the EP Act on the FMP 2004–2013 were revoked and replaced in the FMP 2014–2023 (Statement No: 952, 21 November 2013, FMP 2014–2023 pages 205 to 208). The requirements of the ministerial conditions imposed on the FMP 2004–2013 with ongoing relevance to forest management are addressed in the FMP 2014–2023.

Milestone

7. Updating appropriate policy documents related to Mining of forested areas in the South-West Forest Region so that they reflect a commitment to the principles of ecologically sustainable forest management.

This ongoing milestone was achieved in part in Period 1, Period 2 and Period 3.

WA has in place a legislative framework through SAA, the Mining Act and the EP Act, which provides for approval outcomes that achieve environmentally sustainable development.

¹²⁴ Environmental Protection Authority (2010).

¹²⁵ Environmental Protection Authority (2012).

The FMP 2014–2023 provides policy direction accompanied by management actions and seeks to reduce the permanent loss of forested areas due to development, replace forested areas lost to development and promote co-location of infrastructure.

Section 24 of the Mining Act requires the concurrence of the WA Environment Minister to undertake mining operations on areas classified as State forest. Parks and Wildlife advises the Minister responsible for the CALM Act to assist in consideration of concurrence to mining in State forest and this advice is provided pursuant to the strategic objective to manage natural resources and promote sustainable practices.

Further information on the advice provided by Parks and Wildlife on mining proposals with the potential to impact department-managed land is reported in clauses 73 and 85. Milestone 2 of this appendix also provides an overview of work which contributes to the sustainable management of forest area subject to mining operations.

Since 2004, clearing of native vegetation for mining or exploration requires a clearing permit issued under the EP Act, except where exemptions were granted in accordance with the legislation. Schedule 5 of the EP Act, *Principles for clearing native vegetation*, provides the framework to apply the native vegetation clearing regulations and advice to external agencies and proponents.

Milestone

8. Reviewing the present strategies and operations to ensure they include formal requirements for conservation or re-establishment of forest values, including productive capacity, on former Mining sites, consistent with principles of ecologically sustainable forest management.

This milestone was achieved in part in Period 2 and Period 3.

The FMP 2014–2023 provides policy direction accompanied by management actions and seeks to reduce the permanent loss of forested areas as a result of development, replace forested areas lost to development and promote co-location of infrastructure.

The Conservation and Parks Commission provides guidance through its *Position Statement No. 3, Mining in lands vested in the Conservation Commission of Western Australia*¹²⁶, which recommends impact, avoidance, mitigation, offsetting or land exchange to achieve this milestone.

DMP prepares and publishes a range of the environment guidelines and information sheets for proponents and the community¹²⁷. The *Guideline for Mining Proposals*¹²⁸ guides proponents when preparing mining proposals for submission. A key aim of the guideline is to encourage proponents to give consideration to sustainable and responsible development in an environmental risk management framework¹²⁹. While outside the Period 3 timeframe, an updated guideline was published in 2016.

In June 2012, DMP started the Reforming Environmental Regulation (RER) program and a Ministerial Advisory Panel submitted 14 recommendations to streamline and modernise environmental regulation for the mining industry¹³⁰. Through 2013, the legislative amendments to give effect to the panel's recommendations were progressed.

¹²⁶ Conservation Commission of Western Australia (2015).

¹²⁷ Department of Mines and Petroleum (2016). dmp.wa.gov.au/Environment/Publications-and-Guidance-6017.aspx

¹²⁸ Department of Mines and Petroleum (2006).

¹²⁹ Department of Mines and Petroleum (n.d.). dmp.wa.gov.au/Minerals/Mining-proposals-5993.aspx

¹³⁰ Government of Western Australia Ministerial Advisory Panel (2012). dmp.wa.gov.au/Environment/Reforming-Environmental-4910.aspx

The Mining Rehabilitation Fund is a new pooled fund contributed to by WA mining operators. The *Mining Rehabilitation Fund Act 2012* provides the framework for the fund. This model was developed in consultation with industry, government, and conservation and community stakeholders. The interest generated on the fund is used to rehabilitate legacy sites, delivering better environmental and community safety outcomes at these sites.

DMP has an ISO9001 certified quality management system and an environmental regulatory strategy aimed to ensure resource industry activities are designed, operated, closed, decommissioned and rehabilitated in an ecologically sustainable manner, consistent with agreed environmental outcomes and end land uses without unacceptable liability to the State¹³¹.

The responses to Milestone 2, *Developing and publishing policy related to productive capacity of former mine sites*, and Milestone 7, *Updating appropriate policy document*, of WA RFA Attachment 5 are also relevant to the response to this milestone.

Milestone

9. At the next review of the CALM fire process for setting priorities for the use of prescribed fire, reviewing and if necessary changing the weighting given to different values based on the principles of ESFM and current knowledge of the response and resilience to fire of ecosystems in the South-West Forest Region.

This milestone was achieved in Period 2 and Period 3.

During Period 3, the processes for the use of prescribed fire underwent major evolution through revisions to the wildfire threat analysis process and the development of regional fire management plans and associated guidance documents that incorporate management for biodiversity and the suite of forest values including ongoing adaptive management under a drying climate. Updates were made to key supporting documents including regional fire management plans, preparedness response plans, management guidelines and standard operating procedures.

Milestone

10. Reviewing the Code of Practice for Timber Harvesting in Western Australia (April 1997) and the Manual of Timber Harvesting in Western Australia (January 1996) with a view to making them easier for field operators and field staff to understand.

This milestone was achieved in Period 1, Period 2 and Period 3

The FPC is committed to continual improvement, and has developed or is developing individual procedures for management activities with the aim of clearly outlining processes for staff and contractors. For example, the *Code of Practice for Timber Plantation in Western Australia*, updated in 2014, is reflected in specific management activity procedures where relevant.

11. Releasing, where appropriate, draft policy statements for public comment prior to finalisation.

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

During Period 3, Parks and Wildlife published its public participation and stakeholder engagement policy (March 2011) which outlines a range of strategies for public engagement including informing, consulting, involving, collaborating and empowering¹³².

¹³¹ Department of Mines and Petroleum (n.d.). dmp.wa.gov.au/Environment/Environmental-regulation-8311.aspx

¹³² Department of Environment and Conservation (2011). dpaw.wa.gov.au/images/documents/about/policy/Public_Participation_and_Stakeholder_Engagement.pdf

Examples of draft policy or related documents released for public comment or made available to the community during Period 3 include:

2009

- *Forest Management Plan 2004–2013 mid-term audit of performance report* (triggered subsequent verification of regeneration outcomes in the eastern jarrah forest following public comment period)
- *Soil and Water Conservation Guideline*
- *Environmental Protection (South West Agricultural Zone Wetlands) Policy*.

2010

- *Guidelines for Protection of the Values of Informal Reserves and Fauna Habitat Zones*
- *Guidelines for the Selection of Fauna Habitat Zones*.

2011

- *National Framework for the Management and Monitoring of Australia's Native Vegetation*
- Proposed amendment to the FMP 2004–2013, to increase the level of access to karri other bole volume
- Leeuwin-Naturaliste, Yanchep, Neerabup and Perup draft management plans.

2012

- Environmental scoping document for FMP 2014–2023
- *Forest Management Plan 2004–2013 end of term audit of performance report*
- *Draft management plan for the Tuart Forest National Park*
- *Draft Forest Management Plan 2014–2023*.

2013

- Draft silviculture guideline, *Silvicultural Treatment of Native Forest to Enhance Streamflow and Groundwater Reserves in the Wungong Catchment (Treatment Area 4)*, developed jointly by Parks and Wildlife and the Water Corporation.
- Report and recommendations of the Environmental Protection Authority Report *Conservation Commission of Western Australia Proposed Forest Management Plan 2014–2023*, Bulletin 1483, July 2013.

2014

- *WA State Mountain Bike Strategy*.

Significant effort was made to ensure that the community had the opportunity to be informed and to comment on the Draft FMP 2014–2023. In parallel to the release of the draft plan, public information sessions were held in Perth, Bunbury and Manjimup to engage the public and encourage comment on the plan. Information sessions were also held with key stakeholders, including Aboriginal, industry and conservation groups, and local government. More than 5000 submissions were received and incorporated in the analysis of public comment. In addition, significant targeted consultation occurred to ensure that Aboriginal groups were involved in the development of policy regarding customary practice and joint management.

In meeting FSC Controlled Wood certification and protection of High Conservation Values, the FPC consults widely on karri management and timber harvesting of karri forest.

Milestone

12. Developing a system of pre-logging fauna assessment (i) to predict fauna occurrence in each forest block, and (ii) document the known habitat requirements of threatened and sensitive fauna to be implemented by the commencement of the next Forest Management Plan.

This milestone was achieved in Period 2 and Period 3.

The Fauna Distribution Information System (FDIS) was developed to assist fauna management in forest areas subject to timber harvesting. FDIS was designed to predict the likely occurrence of vertebrate fauna species in

a given area of forest. An updated version of the system has been operational since August 2009, after a review by independent experts.

FDIS informs Parks and Wildlife's planning and execution for timber harvesting to determine the measures needed to protect fauna or habitat. The application supporting FDIS is maintained, periodically reviewed and updated to ensure currency with wildlife listing processes, nomenclature and findings from research.

Reference material supporting the system was updated in 2013 and a procedure on managing and updating the database and running reports was developed. Although outside the Period 3 timeframe, from June 2016 the FDIS technical advisory group is working towards incorporating new advice and findings from recovery teams, drafting a procedure for interpreting and implementing FDIS reports into operational activities and investigating options to make the system more widely available across Parks and Wildlife's forest regions.

Milestone

13. Establishing a joint CALM and Western Australian Museum committee to jointly assess priorities for collection of fauna data and to maintain a consolidated database.

This ongoing milestone was achieved in part in Period 1 and Period 2. This ongoing commitment was achieved during Period 3.

The joint committee was not formed. However, the intent of the milestone is achieved through ongoing liaison between Parks and Wildlife and the WA Museum regarding data sharing and the assessment of priorities. Data sharing is achieved through Parks and Wildlife's Fauna Survey database¹³³ and the consolidated data portal NatureMap¹³⁴ which produces maps, lists and reports on WA's flora and fauna diversity. During Period 3, this application was continually reviewed and an update was released in 2012 (V1.5).

Milestone

14. Developing a formal process to appraise and consider data requirements to support assessment of risks to biodiversity in accordance with agreed funding arrangements.

This ongoing milestone was achieved in part in Period 1, Period 2 and Period 3.

Parks and Wildlife continues to implement the *Strategic Plan for Biodiversity Conservation Research 2008-2017* maintaining key flora and fauna datasets¹³⁵. Regional nature conservation service plans direct biodiversity priorities and allocation of resources at the regional level. Corporate science policies provide a formal framework to support the ongoing data acquisition and analysis to assess risks to biodiversity. These are described further in **Appendix 12** (Recommendation 10, Independent Review of the Combined First and Second Five-Year (2009 to 2014) Progress Report of the WA RFA).

The planning checklist for disturbance activities form administered by Parks and Wildlife and supported by FDIS (see Milestone 12 of this appendix) provides a framework for assessing and managing timber harvesting or other disturbance activities.

Parks and Wildlife advised the Environment Protection Authority and Department of Environment Regulation on risks to biodiversity as part of environmental impact assessment and approvals and land planning processes. The EPA has developed a range of Environmental Assessment Guidelines (EAGs) – formerly

¹³³ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities

¹³⁴ Department of Parks and Wildlife (n.d.). naturemap.dpaw.wa.gov.au/

¹³⁵ Department of Environment and Conservation (2007). dpaw.wa.gov.au/images/documents/about/science/pubs/reports/plan-strategic-science.pdf

Guidance Statements – used to advise proponents and the public on the procedures and minimum environmental requirements expected to be met during the environmental impact assessment process¹³⁶.

During Period 3, recovery and interim recovery plans for protected flora and fauna species and for TECs continued to be developed and implemented. These plans identify a suite of recovery criteria and actions.

The assessment of risks to biodiversity was integrated into the development and implementation of the *FORESTCHECK* (Robinson and Tunsell 2010) program which continued through Period 3¹³⁷.

Milestone

15. Assess cultural heritage resources through appropriate and cost effective surveys and develop databases and integrate the conservation of cultural heritage values into the forest management and planning process through training and more explicit processes and guidelines in accordance with agreed funding arrangements.

This ongoing milestone was achieved in Period 2 and Period 3.

The identification and protection of cultural heritage is considered through the planning checklist for disturbance activities and associated processes within the FMS (see **Appendix 10**). A suite of registers across government are maintained to support these processes. With regard to Aboriginal heritage and culture, sources include Parks and Wildlife corporate databases, the heritage register maintained by the Department of Aboriginal Affairs in line with the relevant legislation¹³⁸, liaison with SWALSC and local knowledge held by custodians. Heritage places and sites other than Aboriginal are identified from Parks and Wildlife's RATIS cultural heritage database as well as the National Heritage List, Register of the National Estate (all levels), the WA's State Heritage Register¹³⁹ and local government municipal inventory registers.

Further information relating to the identification and protection of Aboriginal culture and heritage values is provided in response to Milestone 2 of this appendix and **Appendix 6**.

The Parties note that the Forest Management Systems could be further improved by the following actions, but that implementation is subject to the availability of adequate financial resources and to the State's other legislative and policy commitments. The actions would be to:

16. In addition to current (about two yearly) internal reviews, implementing periodic (about five yearly) external review of the Code of Practice for Timber Harvesting in Western Australia.

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

In 2011–12, CSIRO undertook a scientific assessment of WA's code of practice for timber plantations, in relation to the protection of environmental and heritage values, against the requirements of the national plantation principles. For the purpose of the Export Control (Unprocessed Wood) Regulations 1986, code of practice in relation to a State means the practices adopted in a State for the establishment, management and harvesting of all plantations in that State, whether or not those practices are contained in a single document. The code was approved by the Parliamentary Secretary for Agriculture, Fisheries and Forestry on 2 May 2013.

¹³⁶ Environmental Protection Authority (2016).

epa.wa.gov.au/Policies_guidelines/EAGs/Pages/default.aspx?cat=Environmental%20Assessment%20Guidelines&url=Policies_guidelines/EAGs

¹³⁷ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research/landscape-conservation-research/183-forestcheck

¹³⁸ Department of Aboriginal Affairs (n.d.). www.daa.wa.gov.au/heritage/

¹³⁹ Heritage Council State Heritage Office (2016). heritage.wa.gov.au/state-heritage-register

The *Code of Practice for Timber Plantation in Western Australia* (Plantation code) was reviewed and revised during 2013–14 and recently published as the second edition of the Plantation code in 2014¹⁴⁰.

For native timber harvesting, Section 57 of the FP Act, together with the FMP 2014–2023 set out requirements for an agreed (between Parks and Wildlife and FPC) set of guidance documents for planning and implementing field activities. These are maintained and updated in accordance with the Working Arrangements document established under an MoU between these two agencies.

17. Implementing processes for the formal involvement of CALM Regional and District staff in setting priorities for research and development, and in planning the implementation of research results in forest management.

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Parks and Wildlife’s forest management research priorities and knowledge gaps are considered by an across-division science liaison group. Parks and Wildlife’s Science Division also liaises with the three forest regions (Swan, South West and Warren) to determine research priorities.

During Period 3, determining research priorities and implementing results and findings continued to be guided by science project plans, supported by a revised suite of science policy documents (see **Appendix 7** and Recommendation 10, Independent Review of the Combined First and Second Five-Year (2009 to 2014) Progress Report of the WA RFA). In addition, Parks and Wildlife science program leaders are involved in planning or actively apply research findings into operational practice. Examples of particular note include updated practices for the management of prescribed fire and bushfires, continual improvement in the *Western Shield* program and updates to silvicultural guidelines to support the FMP 2014–2023.

18. Defining water quality more explicitly in the relevant Codes of Practice at the next review of these documents.

This commitment was achieved in Period 2 and Period 3.

As reported in the combined first and second five-yearly review report, *the Soil and Water Conservation Guideline* was developed and released for public comment in March 2008 and approved by the WA Environment Minister in December 2009¹⁴¹.

The guideline outlines physical and chemical aspects of water quality and a series of guiding principles for protection and management of these values. Key subsidiary documents to the *Soil and Water Conservation Guideline* were either updated or developed during Period 3. These documents prescribe operational practices for the management and protection of water values. The *Manual of Procedures for the Management of Soils Associated With Timber Harvesting in Native Forests* (FEM Manual No. 1) was revised in 2009, 2010 and 2015 to support continual improvement in practices for the management of soil and water values during timber harvesting activities. The manual describes risks to water quality including erosion, deposition and turbid runoff. Allowable limits and management actions are prescribed together with monitoring and surveillance for the management of risks.

In 2009, the *Manual for the Management of Surface Water* (FEM Manual No. 3) was developed together with a field guide and spreadsheet tool to guide the planning, installation and management of structures for the management of surface water including aspects of road design, culverts, drains and spreaders. To facilitate implementation of the new manual, a series of training courses was developed to Certificate II (machine

¹⁴⁰ Forest Industries Federation (WA) Inc. (2014). fpc.wa.gov.au/forest-management/policy-and-practice

¹⁴¹ Department of Parks and Wildlife (2014c). dpaw.wa.gov.au/management/forests/about-our-forests/177-soil-and-water.

operators) and Certificate III (field officer) level and conducted for FPC and departmental staff in the Swan, South West and Warren regions.

19. Reviewing skill requirements, staff training, and the contracting of external services to facilitate timely access to the range of skills needed to implement ESFM.

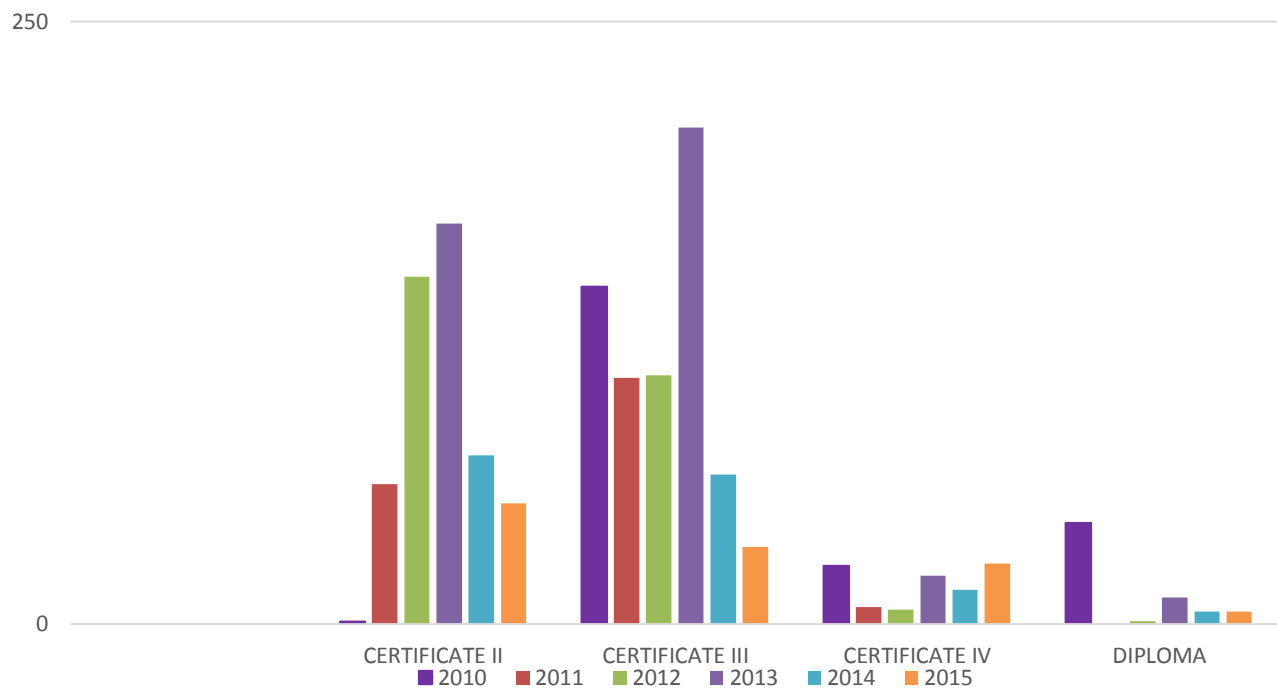
This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

Skills development is addressed in a range of corporate and industry documents. The FMP 2014–2023 contains management activities which commit to activities around training and skills development including specific actions on the management of fire (21.6), disease (32.7) and spills (44). In addition, management activity 119 outlines a goal for common training and accreditation programs, where appropriate, to develop the competency of staff and contractors involved in regulation, planning, supervision and implementation of disturbance operations. In 2015, Parks and Wildlife and FPC initiated a committee to pursue this goal through formal working arrangements.

Parks and Wildlife offer internal and external training programs in operational, corporate and health and safety fields and staff are offered opportunities to pursue undergraduate and postgraduate studies. There is a range of programs targeted at graduate recruits, Aboriginal trainees, operational, administrative and specialist personnel that offer specific learning opportunities.

The industry saw enrolments in the Forest Growing and Management Training Package as a base for increasing operational knowledge and skills (**Figure 1**). Across the certificates and diploma offered, enrolments remained above 100 for each year. Examples of FPC’s training initiatives include targeted training for recruits in its operational division and a skills recognition program for existing staff to obtain recognised qualifications.

Figure 1: Forest Growing and Management Package enrolments, 2010 to 2015



Western Australia statistics compiled from National Centre for Vocational Education Research data

20. Investigate a cross-agency cultural and natural heritage research program.

A report on progress with the implementation of the Regional Forest Agreement for the South-West Forest Region of Western Australia: 2009 to 2014 (Period 3)

This ongoing commitment was achieved during Period 1, Period 2 and Period 3.

Parks and Wildlife continues to progress its social research program which encompasses cultural and natural heritage. Parks and Wildlife has worked collaboratively with Curtin, Edith Cowan, Murdoch and Notre Dame universities and The University of Western Australia to carry out further research in these areas. This work included the following:

- In 2009, PhD project with Edith Cowan University looking at better understanding the motivations for a geotourism experience¹⁴²
- In 2011, an Honours project with Curtin University investigating the impacts of recreational camping and attitudes towards conservation using Lane Poole Reserve, south of Dwellingup, as a case study
- In 2012, an Honours project with Murdoch University which explores the relationships between people and the natural environment as part of the camping experience in Western Australian national parks¹⁴³.

The South West Aboriginal Land and Sea Council and the departments of Parks and Wildlife, Aboriginal Affairs, Lands and other government agencies are working together to implement the South West Native Title (SWNT) Settlement. The settlement provides for a range of outcomes which will increase Noongar involvement in the management of country, increase the identification and protection of cultural heritage values, and support social and economic development outcomes. As part of the settlement, Parks and Wildlife will establish 'Co-operative Management' and 'Joint Management' bodies that will include Noongar representatives and provide advice on cultural heritage programs. A Noongar Land Fund will also be established which will provide funding for relevant cultural heritage research including a dedicated stream directed towards a priority program for the identification and protection of highly significant or 'at risk' heritage sites across the south-west, some of which potentially fall within the conservation estate.

21. Implementing a regional-level forest health surveillance system (including private forests) to provide early warning of potential pest disease and weed problems, develop an associated action plan, and undertake risk analyses for likely incursions or outbreaks.

This ongoing commitment was achieved in part in Period 1, Period 2 and Period 3.

The surveillance and mapping of *Phytophthora* dieback in jarrah forests is one of the longest running forest health programs undertaken by Parks and Wildlife. During Period 3, broad scale and detailed occurrence mapping continued and work was carried out in collaboration with South Coast NRM through Project Dieback¹⁴⁴ which has undertaken a strategic analysis and review of priority areas for investment in dieback surveillance, control and monitoring. During Period 3, Parks and Wildlife updated dieback hygiene management planning processes to include the recognition and management of weeds.

To support Policy Statement No 14 Weed Management, approved in 2014, a prioritisation process identifying and rating weed species based on potential impacts and invasiveness was conducted. A combination of opportunistic and strategic surveillance occurs within south-west forests for weed species. Key outcomes are to reduce the impacts of existing weed populations on high value biodiversity assets while preventing new incursions and eradicating, if possible, new infestations.

Two research groups – the Tuart Response Group and the Wandoo Working Group – were established to

¹⁴² Curtin Universtiy (2009): ro.ecu.edu.au/theses/438/

¹⁴³ Murdoch University (2102): researchrepository.murdoch.edu.au/13130/

¹⁴⁴ Project Dieback (2014). dieback.net.au/

monitor and research the cause of tuart (*Eucalyptus gomphocephala*) and wandoo decline¹⁴⁵. The Tuart Response Group was integrated into the Centre of Excellence for Climate Change, Woodlands and Forest Health (CoE). Parks and Wildlife was an industry partner of this CoE and collaborated on relevant research projects.

In addition to the preparation of a State biosecurity strategy mentioned in Clause 62, a contingency plan for myrtle rust (*Puccinia psidii* s.l.) is in preparation. The plan will provide background information on the disease biology and available control measures to assist with preparedness for any incursion into WA by myrtle rust. While outside the reporting period, Parks and Wildlife developed a myrtle rust incursion preparedness and response plan in 2015, supported by myrtle rust sampling and hygiene procedures.

A key component of *Western Shield*, Parks and Wildlife's lead animal conservation program, is the monitoring of a comprehensive suite of fauna grids for the presence of protected fauna. During Period 3, the monitoring capacity of *Western Shield* was enhanced when remote infrared cameras were deployed in remote areas to improve knowledge on both prey and predator populations. In addition to the grids, intensive trapping and fauna surveys are conducted to support ongoing scientific research on trends in predation and impacts on protected fauna species.

22. Completing and using soil and landform assessment methods, and developing guidelines for using this information in planning in the southern forests.

This ongoing commitment was achieved in Period 2 and Period 3.

During Period 3, Parks and Wildlife and the FPC continued to use soil-landform mapping to manage disturbance activities carried out on forest areas, particularly in relation to risk management. Soil landform maps are used in harvest planning and the management of erosion and soil compaction risks through a two-stage approvals process.

Guidance was provided in the *Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests*¹⁴⁶ to reduce the extent and severity of soil disturbance associated with harvesting timber in native forests and included a tighter definition regarding severity of damage, the introduction of rutting, erosion, deposition and landing management limits, the introduction of a precautionary planning approach and a more determined effort to halt operations prior to exceeding allowable limits.

During Period 3, this manual was updated twice and training sessions were conducted between Parks and Wildlife and the FPC to introduce the new requirements. In 2009, refinements to monitoring and reporting were introduced together with a process to verify differences observed between mapped soil types and those occurring in the field. Specific advice for Parks and Wildlife officers was added regarding definition of outcomes well below or significantly above allowable limits. In 2010, the manual was revised to consolidate operational requirements from a review of Appendix 6 (Protection of soil in native forest harvesting) of the FMP 2004–2013 and new content was added relating to completion and publication of the *Soil and Water Conservation Guideline*.

23. Collating and maintaining a database on forest soils (including soil nutrients) and carbon, using data from researchers within and outside CALM.

This ongoing commitment was not achieved in Period 1 or Period 2. This ongoing commitment was achieved in part in Period 3.

¹⁴⁵ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/forests/about-our-forests

¹⁴⁶ Department of Parks and Wildlife (2014c). dpaw.wa.gov.au/management/forests/about-our-forests/177-soil-and-water

Parks and Wildlife uses soil-landform mapping to inform forest management, particularly in relation to risk management processes. Soil landform maps continued to be used to inform harvest planning and the management of erosion and soil compaction risks through a two-stage approvals process. While there is no formal process in place to update soil data, field assessment continues to inform continual improvement in the understanding of soil disturbance and timber harvesting.

As described in Milestone 2 above, during Period 3 Parks and Wildlife worked to estimate the above and below-ground carbon stocks in live standing trees within the major forest types within the south-west forests on the lands vested in the Conservation Commission for the first time. Part of the work involved a major review of soil carbon data availability.

24. Developing mechanisms in consultation with harvesting operators for fostering research and development in harvesting techniques and promoting the transfer of new technology.

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

In 2009, the FPC undertook a five-year review of contractor performance on fulfilling log supply contracts as part of the mid-term audit of performance for the FMP 2004–2013 review.

The forest industry, including harvesting operators, has been involved with the Australian Forest Operations Research Alliance (AFORA)¹⁴⁷ at the University of the Sunshine Coast. This group was formerly part of the Cooperative Research Centre (CRC) for Forestry group and provides research and technical assistance to the forest industry. AFORA publications are available to all industry members and most information is published in the public domain.

The then CRC for Forestry and more recently AFORA have developed and provided new industry tools such as:

- FastTRUCK – an optimised forest transport planning tool¹⁴⁸
- Australian Logging Productivity and Cost Assessment Tool (ALPACA)¹⁴⁹ – a model to predict productivity and cost based on production studies of felling, yarding, chipping and loading.

25. Furthering the development of CALM's social and economic research program.

This ongoing commitment was achieved during Period 1, Period 2 and Period 3.

The Parks and Wildlife Social Research Unit¹⁵⁰ has a coordinated and comprehensive approach to social research in relation to Parks and Wildlife-managed land and waters. The unit worked collaboratively with other divisions of Parks and Wildlife, government agencies and major tertiary institutions. Parks and Wildlife was a partner of the Sustainable Tourism Cooperative Research Centre (STCRC)¹⁵¹.

Research was conducted into the socio-economic situation and likely changes in the forest industry in WA.¹⁵² This research investigated how changes in the forest industry, such as technological advancements and access

¹⁴⁷ University of the Sunshine Coast (2016). usc.edu.au/connect/research-and-innovation/research-partnerships/australian-forest-operations-research-alliance-afora

¹⁴⁸ Acuna, M. Ghaffariyan, M. (2011). www.cirrelt.ca/cofe2011/proceedings/27-mauricio%20acuna%20paper%20cofe%202011.pdf

¹⁴⁹ University of the Sunshine Coast (2016). usc.edu.au/connect/research-and-innovation/research-partnerships/australian-forest-operations-research-alliance-afora

¹⁵⁰ Department of Parks and Wildlife (2013f) parks.dpaw.wa.gov.au/for-business/social-research

¹⁵¹ Sustainable tourism online (2010). sustainabletourisonline.com/ N.B the STCRC ceased operating in June 2010.

¹⁵² Schirmer, J. (2008). crcforestry.com.au/research/downloads/TR189-final-reportforJacki.pdf

changes to native forests, affected regions in regard to population and employment. In particular, the research considered the socio-economic effects of the shift to a more plantation-based industry, especially in changes associated with the growth of eucalypt hardwood plantations. The conclusion of the investigation indicated that the changes varied in magnitude and outcome under different circumstances, and thus the importance of the research was in working towards maximising the positive outcomes associated with shifts to the forest industry through developing strategies that could assist people to adapt to the changes associated with plantation expansion.

Appendix 4 | Protection and management of forests on private land

Attachment 6 of the WA RFA described the FMS for private forests in WA at the time of the agreement in 1999. Changes to legislation since the WA RFA was signed resulted in adjustments to management processes as discussed below.

Forest Management System for private forests in Western Australia

The Parties note that the existing management system in Western Australia contributes to the protection of CAR and environmental values and encourages private forestry on private land through five (5) instruments and mechanisms.

1. Clearing of native vegetation on private land

Clearing of native vegetation on private land is regulated under two Western Australian Acts, *the Country Areas Water Supply Act 1947* and the *Soil and Land Conservation Act 1945*. Provisions of the *Environmental Protection Act 1986* and *Wildlife Conservation Act 1950* also apply.

For the purposes of the *Soil and Land Conservation Act 1945* ^(WA) a Notice of Intent is assessed by Agriculture WA, and under mechanisms established in the *Memorandum of Understanding between the Commissioner for Soil and Land Conservation, Environmental Protection Authority, Department of Environmental Protection, Agriculture Western Australia, Department of Conservation and Land Management, Water and Rivers Commission, for the protection of remnant vegetation on private land in the agricultural region of Western Australia*, is referred, as appropriate, to:

- the Department of Conservation and Land Management (CALM) to assess the impact of the proposed disturbance on Declared Rare Flora and Declared Rare Fauna under the *Wildlife Conservation Act 1950* (WA) and to provide advice on general nature conservation issues such as the opportunity to maintain corridors of remnant vegetation and buffers around conservation reserves;
- the Department of Environmental Protection to advise on the impact of the proposal on the environment;
- the Water and Rivers Commission where a separate License to Clear is required in catchments contained in Schedule 2 of the *Country Areas Water Supply Act 1947* ^(WA); and
- the Environmental Protection Authority, if their assessment is required.

This ongoing commitment was achieved during Period 1, Period 2 and Period 3.

Managing the clearing of native vegetation on private land continued to be regulated under the EP Act. Provisions of the WC Act also apply. For the purposes of the *Country Areas Water Supply Act 1947* (CAWS Act), clearing native vegetation on private land is controlled on catchments contained in Schedule 2 of the CAWS Act, which is administered by the Department of Water.

The EP Act prohibits clearing native vegetation unless a clearing permit is granted by the Department of Environment Regulation (DER) or clearing is for an exempt purpose as defined in the EP Act and the associated Environmental Protection (Clearing of Native Vegetation) Regulations 2004. Clearing permits are assessed in accordance with the principles of Schedule 5 of the EP Act, planning instruments and other relevant matters. DER continues to prepare quarterly performance reports on the native vegetation clearing program¹⁵³.

¹⁵³ Department of Environment and Conservation (2013). der.wa.gov.au/images/documents/pre1july2013/Quarterly_Performance_Reports/q3-2012-13-native-vegetation-conservation_final.pdf

Vegetation conservation notices may be given under Section 70 of the EP Act if, on reasonable grounds, it is suspected that unlawful clearing is likely to take place, is taking place or has taken place on any land. The notice can specify measures to repair or mitigate the environmental harm caused by the clearing.

From 2008 to 2009, a regulatory review of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 was carried out. It included an expert review submitted to the WA Environment Minister (2008) and stakeholder advisory group report (2009). In 2013, the State Government announced legislative changes to the regulations to streamline the approvals process and improve regulatory effectiveness¹⁵⁴.

Under Part 3 of the EPBC Act, actions which have a significant impact on matters of national environmental significance are offences unless the Australian Environment Minister has given prior approval under Part 9 of the Act. However, Section 38 of the EPBC Act stated that Part 3 did not apply to forestry operations undertaken in accordance with an RFA. This section effectively provides an exemption from the assessment and approval requirements which apply to other activities.

2. Timber Harvesting on Private Land

(a) Native Forests

In catchments contained in Schedule 2 of the *Country Areas Water Supply Act 1947* (WA), the Water and Rivers Commission, require the preparation of a Forest Management Plan applying to timber harvesting operations in these areas.

Provisions of the *Wildlife Conservation Act 1950* (WA) apply to timber harvesting operations on private lands.

(b) Plantations

Clearing of native vegetation for plantation establishment is regulated through the Memorandum of Understanding.

An association of private forest growers (Australian Forest Growers) encourages private forest growers to apply the Code of Practice for Timber Plantations on private lands.

These ongoing commitments were achieved in Period 1, Period 2 and Period 3.

(a) Native forests

Managing a forest for sustainable wood production is subject to the same legislation as clearing and requires a clearing permit under the EP Act. In addition, there is a requirement for a Commercial Producers Licence issued by Parks and Wildlife under the WC Act where products are sold from native forests. In catchments contained in Schedule 2 of the CAWS Act, a licence is required to harvest native forest. In circumstances where a clearing permit has been approved under the EP Act, this requirement is waived.

(b) Plantations

Clearing native vegetation for the purpose of a plantation requires a clearing permit in accordance with the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

The WA RFA acknowledged FIFWA and the Australian Forest Growers¹⁵⁵ role to encourage forest growers to apply the *Code of Practice for Timber Plantation in Western Australia* on private lands. This code of practice was updated in 2006 and 2014.

¹⁵⁴ Government of Western Australia (2103). mediastatements.wa.gov.au/Pages/Barnett/2013/12/Land-clearing-changes-to-reduce-red-tape.aspx

¹⁵⁵ Australian Forest Growers (n.d.). afg.asn.au/

3. *Remnant Vegetation Protection Scheme*

This scheme protects CAR values; including flora, fauna, wetlands and soils; through assistance for fencing of remnant vegetation on private land. Landholders enter into a contract deed with the Commissioner of Soil and Land Conservation to set aside the land for the protection and management of the remnant native vegetation for a minimum period of thirty years. A memorial is placed on the land title to advise future owners that they must preserve the area of fenced vegetation.

These ongoing commitments were achieved in Period 1, Period 2 and Period 3.

The Remnant Vegetation Protection Scheme no longer operates, but covenants can still be placed over land under the *Soil and Land Conservation Act 1945* (WA) or through the conservation covenant programs operated by Parks and Wildlife and the National Trust of Australia (WA)¹⁵⁶. Conservation covenants assist in protecting high quality native vegetation, usually in perpetuity. Through the covenants, covenanters receive a set of guidelines for the management of the protected bushland, and can apply for financial assistance to undertake initial management actions to implement the guidelines.

To 31 December 2014, there were 138 properties with conservation covenants in Parks and Wildlife's Swan, South West and Warren administrative regions covering 3864ha.

The FPC and Parks and Wildlife continue to support and encourage private forestry initiatives through participation in workshops and field days, and providing information and practical, on-ground assistance to farmers on integrated farm planning, species selection, plantation establishment and silviculture.

4. *Farm Forestry Advisory Service*

The Department of Conservation and Land Management (CALM) and Agriculture WA jointly operate a Farm Forestry Advisory Service which provides information on the management and restoration, growth and yield, commercial, and environmental aspects of native forests and plantations on private property. The contribution of the Department of Conservation and Land Management in this area is in accordance with strategies contained in the Forest Management Plan 1994-2003.

During Period 3, Parks and Wildlife continued work in collaboration with the Future Farm Industries Cooperative Research Centre¹⁵⁷. During 2014–15, the centre completed its work, resulting in new planning and decision tools as part of the Natural Diversity Recovery Catchment Program¹⁵⁸.

Salinity management¹⁵⁹ initiatives by Parks and Wildlife also investigated and developed industries that provided integrate environmental and economic benefits from revegetation operations. The woody crop program focused on cultivating oil mallees¹⁶⁰.

¹⁵⁶ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/off-reserve-conservation/nature-conservation-covenant-program

¹⁵⁷ Future Farm Industries CRC (2011) www.futurefarmonline.com.au/

¹⁵⁸ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/wetlands/264-natural-diversity-recovery-catchment-program

¹⁵⁹ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/salinity

¹⁶⁰ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/salinity/233-mallee-industry-research-and-development-program

5. *Land for Wildlife Scheme*

Through this scheme, the Department of Conservation and Land Management (CALM) encourages landholders to make a personal commitment to provide habitat for wildlife on their property. On-site advice that is provided includes: integrating wildlife habitat with other land uses; management of remnant vegetation and fauna; and the ecological role and requirements of native flora and fauna.

This ongoing commitment was achieved in Period 1, Period 2 and Period 3.

The *Land for Wildlife* program continued to operate through Period 3¹⁶¹. The program facilitates management that enhances the natural values of bushland located outside WA's conservation estate and reserves system. This scheme, along with a range of other off-conservation reserve initiatives, encourages landholders to make personal commitments to provide habitat for wildlife on their properties. Advice provided to landholders includes:

- integrating wildlife habitat with other land uses
- how to include wildlife aspects into revegetation schemes and landcare
- managing remnant vegetation and fauna
- the ecological role and requirements of native flora and fauna.

Land for Wildlife does not alter the legal status of the property.

To 31 December 2014, there were 1156 properties within Parks and Wildlife's Swan, South West and Warren administrative regions covering 27,081ha registered as *Land for Wildlife* sites providing managed habitat for wildlife.

Strategy for Improving Ecologically Sustainable Forest Management on Private Land

Western Australia will seek to ensure that ecologically sustainable forest management of native vegetation on private land is managed through:

- encouraging industry to implement the Codes of Practice on a voluntary basis on Private Land
- continuing to improve the efficiency and effectiveness of instruments and mechanisms for promoting ecologically sustainable forest management of remnant native vegetation on private land;
- publishing a brochure or information sheet for landowners that briefly describe the Forest Management System for private land. This document will encompass both native forests and plantations and the points of contact for the various mechanisms and instruments.

These commitments were achieved in Period 1, Period 2 and Period 3.

The various versions of the *Code of Practice for Timber Plantations in Western Australia* were based on the national principles in *Forest Practices Related to Wood Production in Plantations: National Principles*¹⁶². The current version of the code was adopted in 2006. The code provided a guide for developing plantation management plans that formed the basis of plantation management activities. The code applied to both public and private plantation growers on all land tenures.

The Natural Heritage Trust, the then Department of Conservation and Land Management (CALM), the FPC and the then Department of Environment commissioned the publication of a booklet on *Managing private native forests and woodlands in the south-west of Western Australia: combining wood production and*

¹⁶¹ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/off-reserve-conservation/land-for-wildlife

¹⁶² Ministerial Council on Forestry, Fisheries and Aquaculture (1996). <http://www.agriculture.gov.au/forestry/australias-forests/plantation-farm-forestry/principles>

conservation¹⁶³ to assist private forest growers to understand how management operations relating to wood production could be undertaken in a way that protected nature conservation. The booklet aimed to address management issues involved in managing private native forests and assisted landowners to develop management plans for their native forest.

Principles for the Protection of CAR Values on Private Land

The strategy to protect CAR values in the CAR Reserve System on Private Land will be implemented in accordance with the following principles:

- Participation by private landowners will be voluntary.
- The CAR values will, wherever possible, be secured in perpetuity.
- Implementation of the program will be the responsibility of the State.
- Valuations of land offered for inclusion in the CAR Reserve System will be conducted by the State Valuer Generals Office.
- Private landowners will be afforded the opportunity of playing an active role in the formulation of management plans.

The key objective of the strategy is to seek to increase the level of protection for forest ecosystems where achievement of the JANIS targets is not possible on Public Land. These ecosystems are:

- Bullich and Yate;
- Darling Scarp;
- Jarrah Rates Tingle;
- Jarrah Red Tingle;
- Karri Rates Tingle.

In addition, the strategy seeks to increase the protection of other CAR values on private land.

The elements of the strategy are:

- Areas with CAR values identified on Private Land may be included in the CAR Reserve System and their protection can be secured through a variety of approaches, including Agreements to Reserve with the Commissioner for Soil and Land Conservation, management agreements with Government agencies, voluntary covenants and voluntary sale. Where land is offered for inclusion, assistance with covenants and management issues will be provided by the State through the appropriate scheme.
- Where landowners offer land for contribution to the CAR reserve system, assessment under this strategy will include the contribution that land may make to meeting JANIS targets for forest ecosystems which cannot be met on Public Land.
- The Parties will consider any request for funding to purchase land or develop management plans for land that has been identified as worthy of inclusion in the CAR reserve system and for which the landowners agreement has been obtained.

These commitments were achieved in Period 1, Period 2 and Period 3.

Parks and Wildlife continues to deliver on this measure through a range of programs to protect biodiversity and landscape values off-conservation reserves, although these were not specifically focused on the three forest regions within the WA RFA region. The extent of private land registered under programs such as *Land for Wildlife* and the *Nature Conservation Covenant Program* is reported in Parks and Wildlife's annual report and/or yearbook. Other supported programs with the aim of protecting conservation values off reserves include roadside conservation¹⁶⁴ and urban nature¹⁶⁵.

¹⁶³ Bradshaw, J. (2005).

¹⁶⁴ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/off-reserve-conservation/roadside-conservation

¹⁶⁵ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/management/off-reserve-conservation/urban-nature

Parks and Wildlife also provides feedback on the management and conservation of flora values outside the reserve system through advice on land use planning, advice to proponents and decision-making authorities and the EPA on development proposals affecting biodiversity assets, and to DER on clearing permits applied for under the EP Act.

Appendix 5 | Threatened flora and fauna

Attachment 8 of the WA RFA provided the 1999 status of threatened flora and fauna on WA's public lands. The following tables provides information on the status of species that are specially protected, rare or otherwise in need of special protection under the *Wildlife Conservation Act 1950* with recovery plans or actions, as at 2014.

The status of threatened species listings are reviewed annually and the WA Environment Minister considers recommendations on threatened categories¹⁶⁶.

A: Threatened fauna

When the WA RFA was signed in 1999, 12 threatened fauna species that occurred (or which had occurred) within the WA RFA region were declared as specially protected fauna under the WC Act, or listed in the Schedules to the then *Endangered Species Protection Act 1992* (ESP Act).

In 2009, for the combined first and second five-yearly review, 26 threatened fauna taxa declared as protected fauna under the WC Act or listed in the Schedules to the EPBC Act had (or were believed to have had) populations within the WA RFA region. This included five species that were thought to be extinct.

By 2014, 27 threatened fauna taxa declared as protected fauna under the WC Act or listed in the Schedules to the EPBC Act had (or were believed to have had) populations within the WA RFA region.

In 2014, national recovery plans were in place for 14 specially protected species¹⁶⁷ and a further seven species had WA recovery plans or interim recovery plans.

Since the 1999 to 2009 reporting period, a State recovery plan was put in place for the western ringtail possum (*Pseudocheirus occidentalis*) in February 2014 (see Clause 59).

Table 16: Summary of recovery plan status for threatened fauna as at 2014

| Taxon | Common name | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 C'wlth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans under EPBC Act – with note on WA recovery plan status) |
|--|------------------|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|--|
| Taxa with recovery plan published and being implemented | | | | | | | | |
| <i>Atrichornis clamosus</i> | Noisy scrub-bird | Endangered | Endangered | Endangered | | Vulnerable | Vulnerable | National recovery plan in preparation |
| <i>Bettongia penicillata ogilbyi</i> | Woylie | | Endangered | Critically endangered | | Endangered | Endangered | WA recovery plan in place |

¹⁶⁶ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities

¹⁶⁷ Department of the Environment and Energy (n.d.). environment.gov.au/biodiversity/threatened/recovery-list-scientific.html

| Taxon | Common name | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 C'wlth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans under EPBC Act – with note on WA recovery plan status) |
|--------------------------------------|--|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|--|
| <i>Cacatua pastinator pastinator</i> | Muir's corella | | Endangered | Other specially protected | | Vulnerable | Vulnerable | WA recovery plan in place |
| <i>Calyptorhynchus banksii naso</i> | Forest red-tailed black cockatoo | | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | WA recovery plan in place |
| <i>Calyptorhynchus baudinii</i> | Baudin's cockatoo or forest black cockatoo | Vulnerable | Endangered | Endangered | | Vulnerable | Vulnerable | WA recovery plan in place |
| <i>Calyptorhynchus latirostris</i> | Carnaby's black cockatoo | Vulnerable | Endangered | Endangered | | Endangered | Endangered | WA recovery plan in place |
| <i>Dasyurus geoffroii</i> | Chuditch | Vulnerable | Vulnerable | Vulnerable | Endangered | Vulnerable | Vulnerable | WA recovery plan in place |
| <i>Engaewa pseudoreducta</i> | Margaret River burrowing crayfish | | Critically endangered | Critically endangered | | Critically endangered | Critically endangered | WA recovery plan in place National recovery plan not required Conservation advice approved 14/04/2009 |
| <i>Engaewa reducta</i> | Dunsborough burrowing crayfish | | Endangered | Endangered | | Critically endangered | Critically endangered | WA recovery plan in place National recovery plan not required Conservation advice approved 14/04/2009 |
| <i>Engaewa walpolea</i> | Walpole burrowing crayfish | | Vulnerable | Vulnerable | | | Endangered | WA recovery Plan in place National recovery plan not required Conservation advice approved 14/04/2009 |
| <i>Galaxias truttaceus hesperius</i> | Western trout minnow | | Endangered | Endangered | | Critically endangered | Critically endangered | WA recovery plan in place National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Geocrinia alba</i> | White-bellied frog | Endangered | Critically endangered | Critically endangered | Endangered | Endangered | Endangered | WA recovery plan in place National recovery plan in preparation |

| Taxon | Common name | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 C'wlth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans under EPBC Act – with note on WA recovery plan status) |
|---|-------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|--|
| <i>Geocrinia vitellina</i> | Orange-bellied frog | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | WA recovery plan in place National recovery plan in preparation |
| <i>Pezoporus wallicus flaviventris</i> | Western ground parrot | Critically endangered | Critically endangered | Critically endangered | | Endangered | Critically endangered | WA recovery plan in place National recovery plan in preparation |
| <i>Potorous gilbertii</i> | Gilbert's potoroo | Critically endangered | Critically endangered | Critically endangered | | Critically endangered | Critically endangered | WA recovery plan in place |
| <i>Pseudemydura umbrina</i> | Western swamp tortoise | Critically endangered | Critically endangered | Critically endangered | | Critically endangered | Critically endangered | WA recovery plan in place |
| <i>Pseudocheirus occidentalis</i> | Western ringtail possum | Vulnerable | Vulnerable | Endangered | Vulnerable | Vulnerable | Vulnerable | WA recovery plan in place National recovery plan in preparation |
| <i>Psophodes nigrogularis nigrogularis</i> | Western whipbird | Endangered | Endangered | Endangered | | Endangered | Endangered | WA recovery plan in place. National recovery plan in preparation |
| <i>Setonix brachyurus</i> | Quokka | Vulnerable | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | WA recovery plan in place |
| <i>Spicospina flammocaerulea</i> | Sunset frog | Vulnerable | Vulnerable | Vulnerable | | Endangered | Endangered | WA recovery plan in place. National recovery plan not required Conservation advice approved 29/04/2014 |
| Recovery plan being prepared, recovery action being identified | | | | | | | | |
| <i>Botaurus poeciloptilus</i> | Australasian bittern | Vulnerable | Vulnerable | Endangered | | | Endangered | National recovery plan being prepared Conservation advice approved 01/02/2011 |
| <i>Myrmecobius fasciatus</i> | Numbat | Vulnerable | Vulnerable | Endangered | Endangered | Vulnerable | Vulnerable | National recovery plan being prepared Conservation advice approved 11/04/2014 |

| Taxon | Common name | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 C'wlth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans under EPBC Act – with note on WA recovery plan status) |
|---|----------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|--|
| No recovery plan in place or in preparation | | | | | | | | |
| <i>Phascogale calura</i> | Red-tailed phascogale | Endangered | Endangered | Endangered | Endangered | Endangered | Endangered | A recovery plan is required Conservation advice approved 17/12/2013 |
| <i>Phascogale tapoatafa</i> subsp (WAM M434) | Brushtail phascogale | | Vulnerable | Vulnerable | | | Not listed | |
| Taxa with distribution principally outside the WA RFA, research program undertaken | | | | | | | | |
| <i>Leipoa ocellata</i> | Malleefowl | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | WA recovery plan in place |
| <i>Petrogale lateralis lateralis</i> (and four other rock wallaby taxa) | Black-flanked rock-wallaby | Vulnerable | Vulnerable | Vulnerable | Endangered | Endangered | Vulnerable | WA recovery plan in place |
| Taxa requiring no further action | | | | | | | | |
| <i>Rallus pectoralis clelandi</i> | Lewin's water rail | Presumed extinct | Presumed extinct | Presumed extinct | Presumed extinct | Extinct | Presumed extinct | |

Note:

Commonwealth Endangered category also includes species listed by WA and the IUCN as Critically Endangered.

B: Threatened flora

When the WA RFA was signed in 1999, 57 threatened flora species which occurred (or which had occurred) within the WA RFA region were declared as specially protected flora under the WC Act, or listed in the Schedules to the then ESP Act.

In 2009, for the combined first and second five-yearly review, 87 threatened flora species declared rare under the WC Act or listed in the Schedule to the EPBC Act had (or were believed to have had) populations within the WA RFA region.

By 2014, 91 threatened flora species declared rare under the WC Act or listed in the Schedule to the EPBC Act had (or were believed to have had) populations within the WA RFA region.

In addition to the specific species recovery planning for threatened flora, there are regional wildlife management programs (flora) covering Parks and Wildlife's Swan, South West and Warren regions¹⁶⁸. Recovery plans were prepared for species listed as critically endangered. Recovery plans were also prepared for species listed as endangered or vulnerable where resources are available and requirements for managing the species justified preparing such a plan. The regional wildlife management programs (flora) provided a brief description of the appearance, distribution, habitat and conservation status of flora species, subspecies or variety which were declared as rare or listed as priority flora. These plans include recommendations for research and management actions to assist towards the continued survival of the species identified.

Table 17: Summary of recovery plan status for threatened flora as at 2014

| Taxon | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 Commonwealth Endangered Species Protection Act status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans) under EPBC Act – with note on WA recovery plan status) |
|--|---------------------------------------|---------------------------------------|---------------------------------------|--|--|--|---|
| Taxa with recovery plan published and being implemented | | | | | | | |
| <i>Andersonia annelsii</i> | | Critically endangered | Critically endangered | | | Not listed | WA recovery plan in place 2012 |
| <i>Banksia</i> (previously <i>Dryandra</i>) <i>nivea</i> subsp. <i>uliginosa</i> | Endangered | Endangered | Endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2010 |
| <i>Banksia</i> (previously <i>Dryandra</i>) <i>squarrosa</i> subsp. <i>argillacea</i> | | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | WA recovery plan in place 2005 |
| <i>Boronia exilis</i> | Critically endangered | Endangered | Endangered | | Endangered | Endangered | WA recovery plan in place 2001 |
| <i>Brachyscias verecundus</i> | | Critically endangered | Critically endangered | | Critically endangered | Critically endangered | WA recovery plan in place National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Caladenia bryceana</i> subsp. <i>bryceana</i> | Endangered | Endangered | Endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2009 |
| <i>Caladenia busselliana</i> | Critically endangered | Critically endangered | Critically endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2008 |

¹⁶⁸ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants?view=categories&id=108

| Taxon | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 Commonwealth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans) under EPBC Act – with note on WA recovery plan status) |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|---|
| <i>Caladenia huegelii</i> | Endangered | Critically endangered | Critically endangered | Vulnerable | Endangered | Endangered | WA recovery plan in place 2009 |
| <i>Caladenia lodgeana</i> | | Critically Endangered | Critically endangered | | | Critically endangered | WA recovery plan in place 2014 National recovery plan not required Conservation advice approved 30/01/2013 |
| <i>Caladenia procera</i> | | Critically endangered | Critically endangered | | | | WA recovery plan in place 2012 |
| <i>Caladenia viridescens</i> | Critically endangered | Critically endangered | Critically endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2008 |
| <i>Caladenia winfieldii</i> | Critically endangered | Endangered | Endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2009 |
| <i>Commerconia erythrogyna</i> (previously <i>Rulingia</i> sp. Trigwell Bridge) | Critically endangered | Critically endangered | Critically endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2004 |
| <i>Conospermum undulatum</i> | Vulnerable | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | WA recovery plan in place 2009 |
| <i>Conostylis misera</i> | Endangered | Vulnerable | Vulnerable | | Endangered | Endangered | WA recovery plan in place 2008 |
| <i>Cryptandra congesta</i> | Not listed | Vulnerable | Vulnerable | | | | WA recovery plan in place |
| <i>Darwinia apiculata</i> * | Endangered | Endangered | Endangered | Vulnerable | Endangered | Endangered | WA recovery plan in place 2010 |
| <i>Darwinia ferricola</i> * | Endangered | Endangered | Endangered | Vulnerable | Endangered | Endangered | WA recovery plan in place 2008 |
| <i>Drakaea elastica</i> | Endangered | Critically endangered | Critically endangered | Vulnerable | Endangered | Endangered | WA recovery plan in place 2010 |
| <i>Drakaea confluens</i> | Critically endangered | Critically Endangered | Critically endangered | Vulnerable | Endangered | Endangered | WA recovery plan in place 2001 Updated State plan 2010 |
| <i>Grevillea acropogon</i> | | Critically endangered | Critically endangered | | | Not listed | WA recovery plan in place 2012 |
| <i>Grevillea althoferorum</i> (subsp. <i>althoferorum</i>) | | Critically endangered | Critically endangered | | Endangered | Endangered | WA recovery plan in place 2004 |
| <i>Grevillea brachystylis</i> subsp. <i>grandis</i> | | | Critically endangered | | | Critically endangered | WA recovery plan in place 2013 |
| <i>Grevillea fuscolutea</i> | | Vulnerable | Vulnerable | | | Not listed | WA recovery plan in place 2010 |
| <i>Grevillea rara</i> | | Endangered | Endangered | | | Endangered | WA recovery plan in place 2010 |
| <i>Lambertia orbifolia</i> subsp. <i>orbifolia</i> ms | Endangered | Critically endangered | Critically endangered | Vulnerable | Endangered | Endangered | WA recovery plan in place 2004 |
| <i>Lambertia orbifolia</i> subsp. Scott River plains | Endangered | Endangered | Endangered | | Endangered | Endangered | WA recovery plan in place 2004 |
| <i>Lasiopetalum pterocarpum</i> | | Critically endangered | Critically Endangered | | Endangered | Endangered | WA recovery plan in place 2004 |
| <i>Rhacocarpus rehmannianus</i> var. <i>webbianus</i> | | Critically endangered | Critically endangered | | Not listed | Not listed | WA recovery plan in place 2012 |

| Taxon | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 Commonwealth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans) under EPBC Act – with note on WA recovery plan status) |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|---|
| <i>Sphenotoma drummondii</i> | Critically endangered | Endangered | Endangered | Endangered | Endangered | Endangered | WA recovery plan in place National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Styidium semaphorum</i> | | Critically endangered | Critically endangered | | | | WA recovery plan in place 2011 |
| <i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696) | Critically endangered | Critically endangered | Critically endangered | | | Critically endangered | WA recovery plan in place National recover plan not required Conservation advice approved 10/10/2009 |
| <i>Thelymitra dedmaniarum</i> | Endangered | Critically Endangered | Critically Endangered | Endangered | Endangered | Endangered | WA recovery plan in place 2001 Updated State plan 2013 |
| <i>Trithuria occidentalis</i> (previously <i>Hydatella dioica</i>) | | Vulnerable | Critically endangered | | Endangered | Endangered | WA recovery plan in place 2012 National recover plan not required Conservation advice approved 16/02/2008 |
| <i>Verticordia apecta</i> | | Critically Endangered | Critically endangered | | | Critically endangered | WA recovery plan in place 2012 National recover plan not required Conservation advice received 13/07/2010 |
| <i>Verticordia fimbriolepis</i> subsp. <i>fimbriolepis</i> | Critically endangered | Vulnerable | Vulnerable | Endangered | Endangered | Endangered | WA recovery plan in place 2011 |
| <i>Verticordia plumosa</i> var. <i>ananeotes</i> | | Critically endangered | Critically endangered | | Endangered | Endangered | WA recovery plan in place 2008 |
| Taxa with recovery plan being developed | | | | | | | |
| <i>Laxmannia grandiflora</i> subsp. <i>brendae</i> | | Vulnerable | Vulnerable | | | | State recovery plan being prepared |
| Taxa with regional flora management program published or in preparation | | | | | | | |
| <i>Acacia anomala</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Acacia aphylla</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Acacia brachypoda</i> | Endangered | Vulnerable | Vulnerable | | Endangered | Endangered | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Acacia chapmanii</i> subsp. <i>australis</i> | Not listed | Endangered | Endangered | | Endangered | Endangered | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Anthocercis gracilis</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Asterolasia nivea</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 16/12/2008 |

| Taxon | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 Commonwealth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans) under EPBC Act – with note on WA recovery plan status) |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|---|
| <i>Banksia goodii</i> | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Banksia verticillata</i> * | Vulnerable | Vulnerable | Critically endangered | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Caladenia christineae</i> * | Vulnerable | Endangered | Endangered | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Caladenia dorrienii</i> * | Endangered | Endangered | Endangered | Endangered | Endangered | Endangered | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Caladenia excelsa</i> * | Endangered | Endangered | Endangered | Vulnerable | Endangered | Endangered | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Caladenia harringtoniae</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Chamelaucium roycei</i> ms * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 29/04/2014 |
| <i>Darwinia acerosa</i> * | Endangered | Endangered | Endangered | Endangered | Endangered | Endangered | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Daviesia elongata</i> subsp. <i>elongata</i> | | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Diplolaena andrewsii</i> | | Vulnerable | Vulnerable | | | Not listed | National recovery plan not required |
| <i>Diuris drummondii</i> | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Diuris micrantha</i> | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Diuris purdiei</i> | | Endangered | Endangered | Not listed | Endangered | Endangered | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Drakaea micrantha</i> | Vulnerable | Endangered | Endangered | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Banksia</i> (previously <i>Dryandra</i>) <i>aurantia</i> | Not listed | Vulnerable | Vulnerable | | Endangered | Critically endangered | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Banksia</i> (previously <i>Dryandra</i>) <i>mimica</i> * | Endangered | Vulnerable | Vulnerable | Endangered | Endangered | Endangered | National recovery plan not required Conservation advice approved 26/03/2008 |
| <i>Eleocharis keigheryi</i> | | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | National recovery plan not required. Conservation advice approved 16/12/2008 |

| Taxon | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 Commonwealth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans) under EPBC Act – with note on WA recovery plan status) |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|---|
| <i>Eremophila glabra</i> subsp. <i>chlorella</i> | | Critically Endangered | Critically Endangered | | | Not listed | National recovery plan not required |
| <i>Gastrolobium modestum</i> | Vulnerable | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 29/04/2014 |
| <i>Goodenia arthrotricha</i> | | Endangered | Endangered | | | Not listed | National recovery plan not required |
| <i>Grevillea brachystylis</i> subsp. <i>australis</i> | | Endangered | Endangered | | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Grevillea bracteosa</i> | | Endangered | Endangered | | | Not listed | National recovery plan not required |
| <i>Grevillea christineae</i> | Endangered | Endangered | Endangered | | Endangered | Endangered | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Grevillea flexuosa</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Jacksonia velveta</i> ms | | Endangered | Endangered | | Endangered | Endangered | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Kennedia glabrata</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Kennedia lateritia</i> (previously <i>macrophylla</i>) * | Endangered | Endangered | Endangered | Vulnerable | Endangered | Endangered | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Lechenaultia loricata</i> * | Endangered | Vulnerable | Vulnerable | Vulnerable | Endangered | Endangered | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Myriophyllum trifidum</i> (previously <i>Meziella trifida</i>) * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Deleted 6/03/2013 | |
| <i>Microtis globula</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Pultenaea pauciflora</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Reedia spathacea</i> | Endangered | Endangered | Endangered | | | Critically endangered | National recovery plan not required Conservation advice approved 19/12/2008 |
| <i>Spirogardnera rubescens</i> * | Endangered | Endangered | Vulnerable | Endangered | Endangered | Endangered | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Tetralia australiensis</i> * | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 26/03/2008 |

| Taxon | 1998 Western Australian threat status | 2009 Western Australian threat status | 2014 Western Australian threat status | 1998 Commonwealth <i>Endangered Species Protection Act</i> status # | 2009 listing of species under EPBC Act | 2014 listing of species under EPBC Act | Status of recovery plan (including interim recovery plans) under EPBC Act – with note on WA recovery plan status) |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---|--|--|---|
| <i>Thelymitra stellata</i> * | Endangered | Endangered | Endangered | Vulnerable | Endangered | Endangered | National recovery plan not required Conservation advice approved 01/10/2008 |
| <i>Tribonanthes purpurea</i> | | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Verticordia carinata</i> | | Vulnerable | Vulnerable | | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 16/12/2008 |
| <i>Verticordia densiflora</i> var. <i>pedunculata</i> | | Endangered | Endangered | | Endangered | Endangered | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Verticordia fimbriilepis</i> subsp. <i>australis</i> * | Endangered | Endangered | Endangered | Vulnerable | Vulnerable | Vulnerable | National recovery plan not required Conservation advice approved 03/07/2008 |
| <i>Verticordia plumosa</i> var. <i>vassensis</i> | | Endangered | Endangered | | Endangered | Endangered | National recovery plan not required Conservation advice approved 01/10/2008 |
| Taxa removed from the Western Australian list, and recommended for removal from the Schedules to the <i>Endangered Species Protection Act</i> ** | | | | | | | |
| <i>Aponogeton hexatepalus</i> | | Priority 4 | Priority 4 | Vulnerable | Not listed | Not listed | |
| <i>Asterolasia grandiflora</i> * | | Priority 4 | Priority 4 | Vulnerable | Not listed | Not listed | |
| <i>Centrolepis caespitosa</i> | Endangered | Priority 4 | Priority 4 | Vulnerable | Endangered | Endangered | |
| <i>Hydrocotyle lemnoides</i> | | Priority 4 | Priority 4 | Vulnerable | | Not listed | |
| <i>Laxmannia jamesii</i> * | Vulnerable | Priority 4 | Priority 4 | Vulnerable | Vulnerable | Vulnerable | |
| <i>Schoenus natans</i> | | Priority 4 | Priority 4 | Vulnerable | | | |
| <i>Trithuria australis</i> (previously <i>Hydatella leptogyne</i>) | | Critically endangered | Priority 4 | | Critically endangered | Delisted 6/3/2013 | |
| Taxa removed from the Western Australian list and the Schedules to the <i>Endangered Species Protection Act</i> ** | | | | | | | |
| <i>Eucalyptus goniantha</i> subsp. <i>goniantha</i> | | Priority 4 | Not listed | Vulnerable | | Not listed | |
| <i>Verticordia plumosa</i> var. <i>pleiobotrya</i> | | Vulnerable | Not listed | | Endangered | Endangered^ | Recovery plan adopted |

Notes:

- # The Commonwealth 'Endangered' category also includes species listed by WA and the IUCN as Critically Endangered.
- * Species marked with an asterisk have a specific Conservation Statement prepared for them. Conservation statements were prepared as part of the comprehensive regional assessment phase of the WA RFA for species (within the WA RFA region) listed as endangered or vulnerable and for which recovery plans or interim recovery plans have not or are not being prepared.
- ** This Act ceased on 16 July 2000 as it was repealed by the *Environment Reform (Consequential Provisions) Act 1999*. It was replaced by the EPBC Act 1999.
- ^ Delisted 16 September 2015, outside Period 3 reporting.

Appendix 6 | Aboriginal heritage and consultation

Attachment 10 of the WA RFA contained the following milestones and commitments in relation to Aboriginal heritage and consultation:

Within the South-West Forest Region:

Milestone

1. Western Australia will develop formal consultation process with Aboriginal people about policy and procedures for the protection of Aboriginal heritage values on CALM-managed lands.

Milestone

2. Western Australia will consult with Aboriginal people on the establishment of mechanisms to enable more effective involvement of Aboriginal people in the protection of significant sites, and the provision of training and employment opportunities.

Milestone

3. Western Australia will protect identified Aboriginal sites in accordance with the requirements of the *Aboriginal Heritage Act 1972* (WA) and develop protocols for, and linking, the CALM geographic information system with information held by Aboriginal Affairs Department.

Milestone

4. Western Australia will, in consultation with Aboriginal people, establish procedures and protocols, and include relevant expertise in Aboriginal heritage in CALM, to enable the early identification of Aboriginal sites as defined in the *Aboriginal Heritage Act 1972* (WA) and afford them protection.

Milestone

5. Western Australia will introduce into Parliament, amendments to the *Wildlife Conservation Act 1950* (WA) and the CALM Act to permit Aboriginal people to undertake traditional and cultural activities on State Forest and other public land.

Milestones 1 to 4 were achieved in Period 1, Period 2 and Period 3.

Milestone 5 was achieved in part in Period 1, Period 2 and Period 3.

WA has made significant strides in engaging Aboriginal people in the management of conservation lands and the acknowledgement of connection to country. An overview of what has occurred during Period 3 is provided in response to Clause 47, **Appendix 3** and the following clause of this appendix.

Attachment 10 also contains the following commitments in relation to Aboriginal heritage and consultation:

6. The State, in consultation with Aboriginal people, will ensure Aboriginal heritage values, especially those associated with protected old-growth forests, are recognised and managed in culturally appropriate ways.

7. CALM will facilitate the access to and use of CALM-managed forests by Noongars for culturally important activities.

8. CALM will facilitate cross cultural awareness and interpretive activities to inform and educate the wider community about Noongar values and links to the South-West Forest Region.

9. The State recognises that the *Commonwealth Native Title Act 1993* protects native title rights and interests and will comply with the provisions of the Act.

10. CALM field activities will be monitored in relation to protection of Aboriginal sites.

These ongoing commitments were achieved in Period 1, Period 2 and Period 3.

WA places a high priority on liaising, consulting and working with traditional owners, elders and other interested stakeholders to enhance the management of public lands and waters in the WA RFA region, including timber industry outcomes for Aboriginal people.

The FPC initiated the preparation of a *Statement of Commitment* in collaboration with the South-West Aboriginal Land and Sea Council (SWALSC)¹⁶⁹, Noongar Native Title Working Parties and Parks and Wildlife. It will outline FPC's commitment to engage with Noongar peoples and protect Aboriginal heritage and cultural values. The statement was completed and published in 2015, *Engagement with Noongar Peoples in the South West of Western Australia*¹⁷⁰. This overarching policy commitment is given effect through policy, procedures and work instructions. Adherence to these is audited as required for obligations under the FMP 2014–2023 and quality certification.

Parks and Wildlife's Aboriginal Heritage Unit liaises and works with:

- elders in local Aboriginal communities, regarding traditional land use and protocols
- RAW 100 (an Aboriginal youth group), where a relationship has been established that could potentially lead to a training and mentoring partnership
- the Kojonup Aboriginal Corporation and elders at Koja Place, Kojonup to establish community programs
- women from Dumbartung Aboriginal Corporation to help develop cultural programs for customary activities on country
- elders from the metropolitan area on Swan River Iconic Trails at the Canning Eco Centre
- Swan Catchment Council regarding sites that have been disturbed in Walyunga National Park
- Bassendean Cultural Committee regarding heritage, site and community consultation.

A high priority is given to building external and internal relationships with Aboriginal and non-Aboriginal groups, individuals and organisations, including:

- developing a corporate policy and supporting guidance documents for the acknowledgment of Aboriginal traditional custodians, and providing training to Parks and Wildlife staff
- hosting a Parks and Wildlife Aboriginal staff conference every two years and initiating the inaugural Eugene Winmar Award for Excellence
- providing ongoing cultural advice and assistance to staff regarding Aboriginal consultation and involvement on Parks and Wildlife-managed lands and waters
- providing ongoing links between regional and district staff and Aboriginal communities
- maintaining ongoing relationships with other State and local government agencies such as the Department of Agriculture and Food Western Australia (DAFWA), the cities of South Perth and Canning, as well as other organisations such as National Green Jobs Corps, South Metropolitan Youth Link, Community Services, Peedac (an organisation that trains and provides employment opportunities for Aboriginal people) and Clontarf Aboriginal College regarding potential training and employment partnerships for Aboriginal people
- continuing to build on a positive working relationship with the SWALSC through its memorandum of understanding with Parks and Wildlife

¹⁶⁹ South West Aboriginal Land and Sea Council (n.d.). noongar.org.au/

¹⁷⁰ Forest Products Commission (2015a). fpc.wa.gov.au/about-us/publications/information-sheets

- working with Marr Mooditj (Aboriginal Health Training College) on women's issues to assist them with cultural training
- developing partnerships with Community Arts Network on the Gnarojin Creek Revitalisation Project with the aim of providing training and employment for local Noongar people
- maintaining representation on the Parks and Wildlife Aboriginal Employee Reference Group
- carrying out ongoing work with the Department of Corrective Services to deliver Aboriginal programs at Acacia, Bunbury and Albany prisons
- continuing to liaise with the Gnulla Maaman Moort Boodjah men's group to progress joint land management initiatives with Parks and Wildlife.

In September 2011, the WA Parliament passed the *Conservation Legislation Amendment Act 2011*, which will provide for joint management of lands and waters between Parks and Wildlife and other parties, including traditional owners. Other sections of the Act, which came into effect in 2012–13, enable Aboriginal people to fulfil longstanding aspirations to undertake customary activities such as food gathering, traditional medicine, artistic, ceremonial and other cultural activities on Parks and Wildlife-managed lands and waters. The amendments have come about as a result of Parks and Wildlife's experience of working with Aboriginal people over many years, the growing understanding of the intrinsic connection between Aboriginal people and country, and recognition of the need to protect and conserve the value of the land to the culture and heritage of Aboriginal people.

Since December 2009, when the State Government signed a Heads of Agreement with SWALSC to start negotiations to resolve Native Title claims in the south-west of the State, Parks and Wildlife has had ongoing involvement in the South West Native Title negotiations in a number of key areas including joint management of conservation estate, access to state lands for customary purposes, use of natural resources for customary purposes, establishment of a land base and creation of a revised heritage scheme. The successful conclusion of negotiations will provide opportunities for Noongar participation in managing conservation estate. Although outside Period 3, the South-West Native Title Settlement was agreed to by Noongar people and SWALSC in March 2015¹⁷¹.

¹⁷¹ Land, Approvals and Native Title Unit (2016). dpc.wa.gov.au/lantu/south-west-native-title-settlement/Pages/default.aspx

Appendix 7 | Priority areas of research

Attachment 11 of the WA RFA referred to the following commitments in relation to areas of research on a State-wide basis:

The following priority areas of research were developed on a State-wide basis. Some of these priorities may not apply to the South-West Forest Region during the life of this Agreement.

1. Description and documentation of biological diversity:
 - Establish a resource centre for taxonomic, conservation and economic information on flora and, in collaboration with other institutes, fauna.
 - Develop and co-ordinate the inventory of systematic, geographic and habitat data concerning biota and ecosystems.
2. Protection and conservation of biodiversity:
 - Continue to identify species and communities with high conservation significance.
 - Understand the processes determining the structure and stability of terrestrial and aquatic biological communities and their resilience to change.
 - Determine the impact of threatening processes on the structure and function of communities and devise management practices to ameliorate these processes.
 - Develop the scientific basis for the conservation and rehabilitation of integrated landscape systems.
 - Develop the protocols required for the conservation of threatened and other priority conservation taxa.
3. Sustainable utilisation of natural resources:
 - Provide the scientific basis for the ecologically sustainable utilisation of native forest and other natural resources.
 - Develop appropriate forest fire regimes to protect life and property and to maintain biodiversity.
 - Develop appropriate insect and disease management systems for forests.
4. Development of tree crops as integral, multiple purpose components of sustainable land management systems:
 - Develop systems that optimise the productivity and survival of tree crops.

These commitments were achieved in Period 1, Period 2 and Period 3.

A significant number of research projects relevant to the impact of disturbance activities such as fire and timber harvesting on forest dwelling species had been and were being undertaken by Parks and Wildlife either through the department's in-house applied research capability or in collaboration with universities, cooperative research centres, CSIRO and other research institutions. For example, Parks and Wildlife was an industry partner with the Centre of Excellence for Climate Change, Woodland and Forest Health.

A research activity report outlining the research activities and progress made on these activities is published annually. These research activity reports and a comprehensive list of research papers are published on the Parks and Wildlife website¹⁷².

Other research programs administered by Parks and Wildlife examining the sustainable use of natural resources and include:

- *FORESTCHECK* monitoring program
- *Western Shield* program

¹⁷² Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research

- *Kingston Project*
- *Woylie Conservation Research Project*
- *Possum Ecology Study*
- *Long-term Perup Monitoring Study*.

Following is a summary of key actions that continued during Period 3:

1. The WA Herbarium¹⁷³ provides a resource centre for flora information. The FloraBase¹⁷⁴ program is made available as a web-based resource and provides taxonomic and conservation information on WA flora
2. *FORESTCHECK*¹⁷⁵ started in 2002. This integrated site-based monitoring program monitors the response of forest-dwelling species to timber harvesting. *FORESTCHECK* results are reported annually and published on the Parks and Wildlife website
3. Research into silvicultural treatment of dieback-affected forest
4. Research into amelioration of soil disturbance during timber harvesting
5. Ecological responses to past fire regimes were studied using fire history records as part of a project conducted in association with the Bushfire Cooperative Research Centre¹⁷⁶. Fire regimes in semi-arid woodlands were described and related to changes in vegetation structure. Ongoing research improved knowledge of forest fire behaviour under summer conditions, and the relationship between fire behaviour and the time since the last fire (Project Vesta¹⁷⁷)
6. The optimisation of productivity and survival of tree crops was largely undertaken by FPC in collaboration with industry and research partners
7. Increased utilisation of lower grade timber resource.

The genetics program undertaken by the FPC, in collaboration with the Southern Tree Breeding Association, is the major breeding program for radiata pine (*Pinus radiata*). The FPC's commercial nursery at Manjimup comprises 226ha and is capable of producing approximately 45 million seedlings and cuttings each year. The nursery manages the:

- genetic improvement program for radiata pine
- deployment of improved genetics for the FPC's plantations program
- commercial production and sale of tree seedlings for native and plantation forests
- sale and deployment of native and genetically improved seed (dieback resistant, salt tolerant, low rainfall dependency).

During Period 3, the areas of priority research relevant to forest management continued to be guided by service priorities which are determined on an annual basis. Some priority research areas for Period 3 were:

- climate change vulnerability
- woylie conservation
- the management of invertebrate pests in the south west forests
- aspects of dieback behaviour to inform modifications to silvicultural guidelines
- long-term stand dynamics of regrowth karri forest in relation to site productivity and climate

¹⁷³ Department of Parks and Wildlife (2013g). dpaw.wa.gov.au/plants-and-animals/wa-herbarium

¹⁷⁴ Department of Parks and Wildlife (n.d.). florabase.dpaw.wa.gov.au/

¹⁷⁵ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research/landscape-conservation-research/183-forestcheck

¹⁷⁶ Bushfire CRC (2014). bushfirecrc.com/

¹⁷⁷ Gould et al. (2007). <http://www.publish.csiro.au/pid/5993.htm> and <http://www.proceedings.com.au/tassiefire/> (See Thursday 20 September, 1330 concurrent sessions, CRC stream)

- coarse woody debris – habitat, carbon store dynamics
- hydrological response to harvesting in the intermediate rainfall zone of the northern jarrah forest
- forest stream biodiversity monitoring
- changing fire environment of the south-west
- long term response of jarrah forest understorey and tree health to fire regimes
- response of terrestrial vertebrates to timber harvesting in the jarrah forest (*Kingston Project*).

Appendix 8 | External reviews undertaken during Period 3 including for the preparation of the *Forest Management Plan 2014–2023*

- Burrows, N. Dell, B. Neyland, M. Ruprecht, J. (2011). *Review of silviculture in forests of south-west Western Australia*. Department of Environment and Conservation, Western Australia.
- Conservation Commission of Western Australia (2013). *Draft Forest Management Plan 2014-2023, analysis of public submissions on the draft management plan*. April 2013.
- Conservation Commission of Western Australia (2013). *Proposed Forest Management Plan 2014-2023*. Conservation Commission of Western Australia, April 2013.
- Conservation Commission of Western Australia (2012). *Draft Forest Management Plan 2014-2023*, Conservation Commission of Western Australia, Perth.
- Conservation Commission of Western Australia (2012). *End-of-term audit of performance of the Forest Management Plan 2004-2013*, Conservation Commission of Western Australia, March 2012.
- Conservation Commission of Western Australia (2012). *Forest Management Plan 2014-2023, environmental scoping document*. June 2012.
- Croton, JT. Dalton, GT. Green, KA. Mauger, GW. Dalton, JA. (2014). *Northern Jarrah Forest Water-Balance Study to Inform the Review of Silviculture Guidelines*. Department of Parks and Wildlife. March 2014
- Curtin University (2011). *Report of an independent assessor on the recommendations of the Panel of Experts to recognize the Whicher Scarp as a Forest Ecosystem*. December 2011.
- Department of Environment and Conservation and Conservation Commission of Western Australia. (2014). *Response to the Report 'Calculating the sustained yield for the south-west native forests of Western Australia'*. Government of Western Australia, Perth.
- Department of Parks and Wildlife (2013). *Decision regulatory impact statement on the Forest Management Plan 2014-2023*. October 2013. Perth.
- Department of Parks and Wildlife (2012). *Fire Management Planning, supplementary reading for the Forest Management Plan 2014-2023*, Fire Management Services Branch, February 2012.
- Environmental Protection Authority (2013). *Proposed Forest Management Plan 2014-2023, report and recommendations of the Environmental Protection Authority*. Report 1483, July 2013.
- Environmental Protection Authority (2012). *Forest Management Plan 2004-2013, end-of-term audit of performance report, Report and recommendations of the Environmental Protection Authority*. Report 1443, June 2012.
- Environmental Protection Authority (2010). *Forest Management Plan 2004-2013, mid-term audit of performance report, report and recommendations of the Environmental Protection Authority*. Report 1362, August 2010.
- Ferguson, I. Dell, B. Vanclay, J. (2013). *Calculating the Sustained Yield for the South-West Native Forests of Western Australia*. Conservation Commission and Department of Environment and Conservation of Western Australia, Perth.
- Hagan. Dunne, B. Keighery, G. Keighery, L. Steere. Strelein. Webb. Whisson (2012). *Conservation Significance and Management Options for the Vegetation, Floristic and other Conservation Values of the Whicher Scarp: Report of the Expert Panel*. Department of Parks and Wildlife, Perth.
- Maher, D. McCaw, L. Yates, C. (2010). *Vulnerability of Forests in South-West Western Australia to Timber Harvesting Under the Influence of Climate Change*. SFM Technical Report No. 5. Department of Environment and Conservation, Perth.
- Office of the Appeals Convenor (2013). *Report to the Minister for the Environment, appeals in objection to the report and the recommendations of the Environmental Protection Authority, Proposed Forest Management Plan 2014-2023*. EPA report 1483, appeal number 065 to 119 of 2013, September 2013

URS Australia (2012). *Social and Economic Impact Assessment of Implementation of the Draft Forest Management Plan 2014-2023*. Conservation Commission of Western Australia and Department of Environment and Conservation. Crawley, Western Australia.

Appendix 9 | Forest employment and industries development strategy

Attachment 14 of the WA RFA referred to the following commitments in relation to actions to facilitate employment and industry development:

Both parties agree to a framework of government actions under the Agreement to facilitate enhanced employment and industry development, based on secure access to forests.

As part of a general Employment and Industries Development strategy, the parties agree to support a range of specific and generic employment and industry development proposals for the following forest-based industry sectors:

- **wood and wood products industry;**
- **tourism and regional development;**
- **minerals industry;**
- **other industries that depend on access to forests.**

Implementation

The Parties agree to contribute in appropriate ways to the implementation of the actions within this Strategy.

The Parties agree to support the Strategy by providing funding as set out in Clause 98 of the Agreement.

The Parties agree that any additional contributions will be obtained through existing industry development and other relevant programs. Encouragement will be provided for Western Australian applications for assistance under these programs, directed to actions included in this Strategy.

These commitments were achieved in Period 1, Period 2 and Period 3

A number of industry investment and structural packages were offered by the Australian and State governments in the first two RFA reporting periods, as detailed in the combined first and second five-yearly review report. Funding was committed to:

- implementing the *Protecting our old growth forest* policy
- Western Australia Forest Industry Structural Adjustment Program (WA FISAP), with work carried out on:
 - Timber Industry Road Evaluation Study
 - Forest Assistance Package for Western Australia
 - Grants for Forest Communities.

Wood and wood products industry

The Parties acknowledge that there may be some sub-regions within the RFA area which may require special assistance measures to ensure that development opportunities are fully achieved. Accordingly, the Parties agree to jointly consider, on a case by case basis, the provision of assistance for sawmilling and related value adding and manufacturing redevelopments to address specific sub-regional impacts and opportunities which may arise as a result of the RFA.

In addition, the Parties will jointly facilitate measures to ensure the maintenance and enhancement of employment opportunities. These measures will also contribute to the viability of forest-dependent communities.

The Parties agree to develop a Memorandum of Understanding for a joint Commonwealth - Western Australian Forest Industry Structural Adjustment Program (WA FISAP) which will establish the respective roles and responsibilities of the two governments in administering and implementing the general and specific undertakings of the Program.

The Parties agree that the following measures should be given priority in implementing the WA FISAP:

- provision of grants and low-interest loans to assist the wood and wood products industry retool, redevelop and to install new processing and manufacturing systems to achieve best practice and international competitiveness;
- provision of business exit assistance;
- provision of labour adjustment (training and relocation) assistance;
- production of a strategic plan for the further development of the timber industry;
- promotion of the sustainability of Western Australian wood products in domestic and international markets;
- development of an internationally recognised certification program for Western Australia's forest products industries to assist in achieving best practice and highest value added market value;
- investigation of alternative uses for lower grade and residue jarrah, including activated carbon;
- support for the establishment of marketing, processing, design and other related manufacturing networks between existing and emerging forest industry participants;
- consideration of special support measures for small industry operators to more effectively process, market and export timber products. This could include an assessment of the commercial feasibility for the provision of a community infrastructure for small sawmillers;
- research and development into techniques and technology to increase value adding for karri and marri timbers, including kiln drying, gluing and finishing;
- assistance to modify sawing technology and skills to enhance recovery rates and utilisation for whole bole logging;
- support for pre-feasibility and feasibility studies for forest based industry projects which have strategic significance and economic potential for the state and the nation;
- the continued implementation of silvicultural programs and reforestation works to provide employment opportunities and improve the productive capacity of State forests; and
- improve access to on-site skills training and assessment.

The Parties also agree to the following additional research, development and marketing activities aimed at increasing value adding and the international competitiveness of the Western Australian wood and wood products industry. Parties agree to consult each other in the development of future research projects that may affect the Agreement and to make publicly available, wherever possible, relevant research reports. Activities could include:

- promotion of the Wood and Paper Industry Strategy and other programs, to facilitate skills development in enterprises and workplaces, including the furniture and wood craft sectors.
- support for wider dissemination of up to date information on sustainability and issues dealing with forest management practices;
- support for an industry wide collection centre for information on research, development and processing techniques for Western Australian forest products;
- support for CALM Timber Technology (CTT) as a provider of Best Practice Research and Development, demonstration, technology transfers, industry training and information dissemination;
- additional support for continued implementation of Plantations for Australia: The 2020 Vision in the Western Australian context; and encouragement of the development of value added processing opportunities including high grade veneer, plywood, LVL, overlay, multiple layered flooring, particleboard, MDF, furniture, solid flooring, glulam, panelling, docking and mouldings;
- assistance for the development of an Australian/International marketing data base for native hardwood, regrowth hardwood, plantation hardwoods and plantation softwood, markets, products and processes; and
- research into the development of new suitable and sustainable markets for regrowth native hardwoods and hardwood plantation timbers.

These ongoing commitments were achieved in part in Period 1, Period 2 and Period 3.

Under Clause 98 of the WA RFA, a commitment of \$59 million was initially made by the Parties to industry assistance. The Commonwealth provided up to \$20 million for the Western Australia Forest Industry Structural Adjustment Program (WAFISAP) with \$5 million allocated to the then Australian Government Department of Transport and Regional Services for the Timber Industry Road Evaluation Study (TIRES) and \$15 million allocated to the Department of Agriculture, Fisheries and Forestry (DAFF). Between 2004 and 2006, the DAFF component of WAFISAP was administered through allocations of \$12.5 million for the Forestry Assistance Program for Western Australia (FAPWA) and \$2.5 million for the Grants for Forest Communities (GFC).

A State Government package worth \$161 million was allocated to a number of government agencies to implement the then Labor Government's Protecting our old-growth forest policy, which included a number of industry assistance programs.

Since these commitments were made, the forest industry, the market and the framework for industry development in Australia has changed. The underlying principles however remain and the FPC, as an organisation, achieved EMS certification for its native forest operations under ISO 14001 in 2001 and for the whole agency in 2007–2008. FPC achieved forest management certification under *The Australian Forestry Standard AS4708-2007* for all forest operations in 2009. In 2014, FPC achieved Forest Stewardship Council (FSC) Controlled Wood certification covering its karri forest harvesting and regeneration operations.

Australia's State of the Forests Report provided the Australian public with forest sustainability reporting every five years to show how they might be changing, indicate positive and negative trends, report the state of Australia's forests to the world and meet international reporting requirements under the Montreal Process. This report was produced in 2003, 2008 and 2013¹⁷⁸.

The Forests Australia website¹⁷⁹ contains the most up-to-date information available on Australia's forests – from links to forest management organisations and institutions to the latest forest-related publications, maps and tools.

¹⁷⁸ Montreal Process Implementation Working Group (2013). agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2013

¹⁷⁹ Department of Agriculture and Water Resources (2016). agriculture.gov.au/abares/forestsaustralia

Tourism and Regional Development

The Parties are committed to supporting regional, including nature-based, tourism development and will do so through a range of initiatives including:

- development of tourism infrastructure to provide enhanced recreation, tourism and regional employment opportunities;
- identification and development of sites in forests which may have potential for commercial investment in providing facilities and services for visitors including campsites in areas such as the lower Warren valley, lower Blackwood valley, the Donnelly Valley, Mt Frankland and Big Brook Dam;
- establishment of potential tourist drives, in the Nannup and Pemberton areas, and support for the development and promotion of forest related self drive tourist routes;
- purchase of private land at Wellington Dam and the provision of infrastructure around the dam, to increase opportunities for enhanced recreation and tourism activity in the Collie region;
- implementation of the State Nature Based Tourism Strategy in which the South-West is identified as a “zone of opportunity”;
- protection of the tourism related values of forests;
- support for infrastructure required for visitor access and appreciation of forests including visitor information and interpretation facilities;
- encourage eligible organisations in Western Australia to apply for Government assistance under Commonwealth and State tourism development programs;
- the production of quality promotional materials which highlight the region’s features and their natural and cultural value;
- support for a cooperative approach to developing and marketing tourism products;
- encouraging the involvement of Aboriginal people in forest related tourism ventures particularly where these are opportunities for showcasing indigenous culture and history
- adoption of advanced information technologies for educational and promotional purposes;
- support for mechanisms which communicate, facilitate and coordinate tourism enterprises that explain and enhance sustainable benefits to local communities; and
- consultation with the tourism industry consistent with the Memorandum of Understanding between the Department of Conservation and Land Management and the Western Australian Tourism Commission.

These commitments were achieved in part in Period 1, Period 2 and Period 3.

During Period 3, leases, licences, and permits for commercial tourism and permits to enable organised non-commercial recreation and educational groups to undertake appropriate activities continued to be issued and managed for lands managed by Parks and Wildlife.

In 2009, WA responded to the 49 recommendation of the 2006 Review of Nature Based Tourism¹⁸⁰ including lengthening commercial operations licences from 10 years to up to 15 years, and requiring all licence holders to achieve recognised tourism accreditation. The Naturebank program (a partnership between Tourism WA and Parks and Wildlife) identifies and prepare sites for sustainable tourism accommodation development¹⁸¹. The program is designed to boost the nature-based tourism industry, employment and other business opportunities in regional WA. Wharnccliffe Mill in Bramley National Park (opened in 2014) and Lane Poole Reserve near Dwellingup are examples of the Naturebank program.

¹⁸⁰ Tourism Western Australia (2011) [parks.dpaw.wa.gov.au/sites/default/files/downloads/know/nature_base_tourism_brochure_2011_\(2\).pdf](http://parks.dpaw.wa.gov.au/sites/default/files/downloads/know/nature_base_tourism_brochure_2011_(2).pdf)

¹⁸¹ Tourism Western Australia and Department of Environment and Conservation (2011). parks.dpaw.wa.gov.au/for-business/naturebank

Forest drives throughout the south-west continued to be developed, maintained and promoted including the Great Forest Trees Drive, Scotsdale Tourist Drive, Karri Forest Explorer Drive and the Mount Shadforth Scenic Drive¹⁸².

WA continued to undertake research in relation to the knowledge, attitudes, skills and activities of visitors to national parks and other reserve areas. Parks and Wildlife's visitor survey program collects information on visitor satisfaction, use and activities, characteristics and demographics of visitors, visitor needs and levels and patterns of use. The survey program measures the overall level of visitor satisfaction to recreation areas and provides a benchmark Visitor Satisfaction Index. The data collected is also used to direct planning and management of these areas.

During Period 3, Parks and Wildlife continued to be involved in tourism industry activities by providing information and services, including:

- production and distribution of the bi-monthly Touring Western Australia e-newsletter to more than 5000 stakeholders in the tourism and travel industry, other government agencies and local government authorities
- quarterly meetings of the Tourism Industry Reference Group to assist with communication between Parks and Wildlife and the nature-based tourism industry
- the redesign and upgrade of static display resources for use at promotional and educational events
- provision of editorial assistance to Tourism WA as well as various independent organisations in the park-related content of their publications to ensure accuracy and provision of a wider range of information
- advice and assistance to Tourism WA with a major promotional campaign and Tourism Development Priority documents
- participation in planning for the addition of the Great South West Edge¹⁸³ to Tourism Australia and Parks Australia's National Landscapes program. National Landscapes is a partnership initiative between tourism and conservation bodies to promote Australia's world class, high quality visitor experiences and protect natural and cultural assets.

Parks and Wildlife played an active role as a member of the Sustainable Tourism Cooperative Research Centre and was involved in a number of projects including:

- a framework to guide the sustainability of wildlife tourism operations
- systematic and strategic collection and use of visitor information in protected area management
- Australian tourism in a water-constrained economy
- starting in 2010, under the *Rediscover Parks* initiative, significant work started on developing a new parks-focused website and community engagement through the use of social media and upgraded e-commerce capability including:
 - EveryTrail electronic park guides to utilise smart phone applications
 - a campgrounds website providing details for more than 110 camp sites around the State
 - an online booking system for popular sites including Lane Poole Reserve, Dwellingup.

During Period 3, the following also occurred:

- The responsible use of public lands by four-wheel drivers and other visitors in, or on, motorised vehicles was promoted by working with the WA Four-wheel Drive Association, Track Care WA, the Recreational Trailbike Riders' Association of WA and Motorcycling Western Australia. Parks and

¹⁸² Tourism Western Australia (n.d.).
www.westernaustralia.com/en/Things_to_See_and_Do/Forest_and_Flowers/Pages/Scenic_Drives.aspx

¹⁸³ Tourism Australia (2011).
www.tourism.australia.com/documents/corporate/Great_SouthWest_EdgeANLPositioningGuidebook.pdf and EC3 Global (2013).

Wildlife worked with the Motorised Recreation Working Group to develop a track classification system for four-wheel drive and trail-bike tracks as part of the motorised recreation management guidelines

- The partnership between Parks and Wildlife and the Munda Biddi Trail Foundation continued and in April 2013, after more than a decade of development, the trail was opened, becoming the State's premier long distance off-road cycle touring trail
- Tourism-related forest values continued to be protected during timber harvesting operations using the planning checklist for disturbance activities. The checklist ensures additional management activities are prescribed as required to protect public safety, amenity and enjoyment including operations adjacent to or within visual proximity of major public highways or roads, Level 1 travel routes, recreation sites, trails or tracks, lookouts, town sites or settlements
- The Australian and WA Governments formally agreed to undertake a comprehensive strategic assessment of the Perth and Peel Regions of WA in accordance with section 146 of the EPBC Act. The strategic assessment considers environment and heritage protection determining areas to be protected from development and areas where sustainable development can occur, the type of development allowed and the conditions under which it can proceed. From August to October 2011, public comment was invited on the draft terms of reference (ToR), and these were finalised in May 2012. The final ToR took account of public comment by expanding the boundary of the assessment to include the whole of the Gnangara, Pinjar and Yanchep pine plantations and adjacent conservation land. While outside the reporting timeframe, the draft *Perth and Peel Green Growth Plan for 3.5 million* was release for public comment from December 2015 to May 2016¹⁸⁴
- The *Parks for People* initiative was announced, focusing on parks in the State's south-west and midwest expanding the number of low-cost camping and caravanning facilities and promoting the parks system¹⁸⁵.

Minerals industry

The Parties will jointly facilitate minerals industry development and related employment by:

- advocating and supporting the Agreement as providing secure access for mineral and petroleum exploration and production in relevant areas covered by the Agreement, subject to compliance with the approval processes which apply to the land tenure status of those areas; and
- through data acquisition and research, support the development of an improved geoscientific knowledge base at regional and continental scale to promote investment in mineral and petroleum exploration.

The State will provide and maintain relevant mineral industry related databases and search and retrieval systems for clients.

These commitments were achieved in Period 1, Period 2 and Period 3.

Work done for the WA RFA showed that the south-west contained the potential for 13 metaliferous, five industrial and three energy source deposits, many of which are on State forests. WA continues to facilitate access by industry to minerals through SAAs. Mineral and petroleum resources are accessed through approvals processes under the *Mining Act 1978* and *Petroleum Act 1967*.

The Department of Mines and Petroleum website continues to offer a range of free online systems for proponents and the community¹⁸⁶. These systems provide a variety of access, including:

- submitting and tracking mineral, petroleum and dangerous goods applications
- submitting reports

¹⁸⁴ Department of the Premier and Cabinet (2015). <https://www.dpc.wa.gov.au/Consultation/StrategicAssessment/Pages/Default.aspx>

¹⁸⁵ Department of Parks and Wildlife (n.d.). <https://www.dpaw.wa.gov.au/parks/parks-for-people>

¹⁸⁶ Department of Mines and Petroleum (n.d.). dmp.wa.gov.au/Online-Systems-1527.aspx

- downloading data, maps and publicly available information
- a large range of free and available to purchase publications.

Access to the online systems is free, although some systems require the user to register for an account before logging on.

Other Forest Based Industries

The Parties agree to provide advice and assistance to other industries that depend on access to forests through existing industry programs in the areas of research and development, commercialisation, business and strategic planning (including quality management and benchmarking), business networks, business licensing and innovation.

This ongoing commitment was achieved in part in Period 1, Period 2 and Period 3.

The forest on public land managed as State forest and timber reserves provides for a range of uses, contributing to the economy of many south-west communities through recreation and tourism, wildflower picking, water production and beekeeping. Parks and Wildlife manages these activities primarily through licensing under the WC and CALM Acts.

On a State-wide basis, wildlife-based commercial activities and people carrying out fauna surveys were required to be licensed in accordance with the WC Act. Through its Wildlife Licensing Section, Parks and Wildlife provides a one-stop licensing centre for all requirements related to commercial wildlife activities.

Managing the trade in wildflowers and other flora products was also controlled by Parks and Wildlife in accordance with a management program approved by the Australian Government Environment Minister.

The export of native flora from Australia is regulated by the EPBC Act, which details the requirements to manage native flora harvested from natural stands. Dealers, wholesalers, florists and others who trade in protected flora are not required to hold a licence unless they are also involved in taking flora for sale. As it is an offence to sell native flora that has not been legally taken, it is essential that traders ensure their stock is obtained from licensed sources. Individuals picking wildflowers from Parks and Wildlife-managed land are required to hold a licence issued under the WC Act. People who wish to take native flora for scientific study, education, hobby, propagation or other non-commercial purposes need to hold a Scientific or Other Prescribed Purposes Licence. Special restrictions apply to taking native flora from nature reserves, national parks or conservation parks, and these reserves are excluded to commercial pickers.

Access to forest areas for beekeeping is managed by Parks and Wildlife in accordance with the CALM Act¹⁸⁷. Access is provided for the field placement of hives and managed to reduce the likelihood of unintended impacts from spread of dieback, weeds or damage to approved sites. Access to apiary sites is managed across a range of tenures within public forests using a permit system. Changes in access may occur through prescribed removals from new or revised area management plans. Changes in numbers of registered sites or movement of sites may also occur due to seasonal conditions or trends in the honey production industry. In October 2011, there were 1136 registered apiary sites on land vested within Parks and Wildlife's three forest regions (Swan, South West and Warren). Around 75 per cent of the honey resource in WA is located on Parks and Wildlife-managed lands State-wide.

Apiary site permits are granted subject to consultation with the Conservation Commission and the approval of the WA Environment Minister. Permits are issued for a term of one, three, five or seven years depending on

¹⁸⁷ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/licences-and-permits

the land tenure. Permit conditions will reflect Parks and Wildlife's management requirements, water catchment guidelines, dieback control, fire prevention and native vegetation clearing.

Parks and Wildlife is the largest provider of nature-based opportunities in WA and manages more than 25 million hectares of diverse and varied lands and waters. An increased number of visitors to WA experienced the natural environment using the services of commercial tourism and recreation operators. More detail of the delivery of recreation and tourism benefits is provided in response to Clause 73 and under the **Tourism and Regional Development** section.

Legislation governing the management of this land requires commercial businesses to gain the consent of the land manager for access and use, to abide by specified conditions, and to pay fees and charges towards maintaining licensing systems and management. Parks and Wildlife gives this formal approval by issuing Commercial Operations Licences under the CALM Regulations. Any photographer taking images or footage for commercial purposes on Parks and Wildlife-managed lands must also obtain a lawful authority in accordance with CALM Regulations.

Appendix 10 | Forest management in Western Australia

Introduction

Forest management in WA is implemented using a comprehensive system comprising an overarching legislative and policy framework, associated planning and operational systems and complemented by a continual improvement process involving research, stakeholder engagement, approval, monitoring, reporting and review mechanisms. The WA RFA defines ‘Forest Management Systems’ as the State’s suite of legislation, policies, codes of practice, plans and management processes for forest management as amended periodically by WA. Through the signing of the WA RFA in 1999, the Commonwealth of Australia accredited the existing WA FMS (including improvements) as providing for Ecologically Sustainable Forest Management (ESFM).

The objective of forest management in WA is ESFM, consistent with the CALM Act and the criteria developed under the Montréal Process. The basis of the approach is that the economic and social values derived from the use of the natural forested areas should be provided through a management system that is based on consideration of its impacts on biodiversity and is precautionary in nature. The FMP adopts the Montréal Process Criteria as described under Clause 33 (Section 5) as the framework within which to set goals and proposed operations (management activities) in line with ESFM principles.

Section 19(2) of the CALM Act describes the five principles of ESFM as that:

- a) the decision-making process should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations
- b) if there are threats of serious or irreversible environmental damage, the lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- c) the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making
- e) improved valuation, pricing and incentive mechanisms should be promoted.

International and national policy setting

The United Nations Food and Agriculture Organization has defined sustainable forest management as:

The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.

Australia’s *National Forest Policy Statement (1992)* (NFPS) sets out a nationally shared vision for the delivery of sustainable forest management. Three of the key objectives articulated in the NFPS are to:

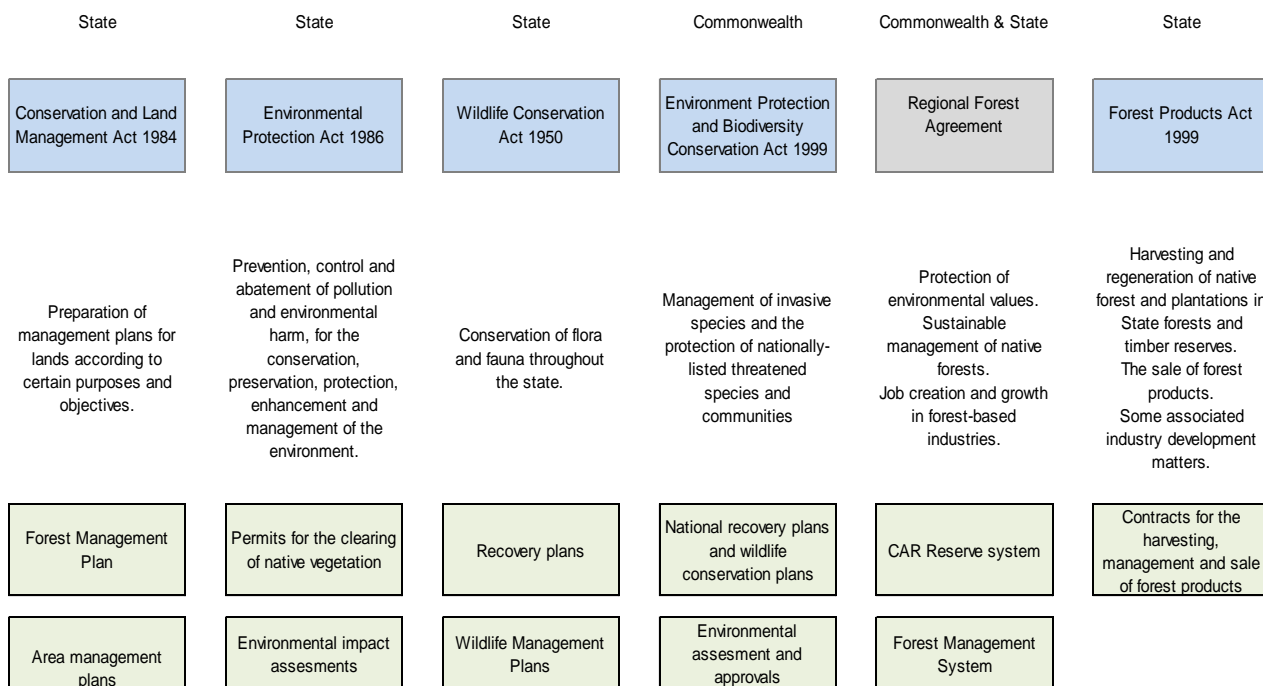
- maintain a permanent forest estate to retain the full suite of forest values over time
- set aside parts of the forest estate in formal reserves to safeguard special environmental and social values according to the principles of comprehensiveness, adequacy and representativeness
- manage forests outside reserves in a manner that contributes to sustainable environmental, social and economic outcomes.

Regulatory framework

The FMS in WA encompasses Commonwealth and State legislation (**Attachment 1**), administered by a number of government departments, agencies and authorities, applied to public and private land tenure. The primary legislative framework and some of the key outputs arising from the legislation including plans, assessments and approvals is summarised in **Figure 2**.

Implementation of forest management is guided by a hierarchy of controlling documents that cascade from legislation, through policy statements and manuals to operational prescriptions. This hierarchy is set out in **Attachment 2** with key documents listed in **Attachment 3**.

Figure 2: Overview of primary legislative framework for forest management in WA



The EPBC Act is the Australian Government’s central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places which are referred to as matters of National Environmental Significance (NES). The legislation encapsulates the principles of ecologically sustainable development which are actively promoted under the legislation’s objectives. The EPBC Act contains provisions relating to the protection and management of nationally-listed threatened species and ecological communities.

In the WA RFA region, the Commonwealth and State governments have agreed that the CAR reserve system and WA’s FMS meet the requirements of the EPBC Act for the protection of threatened flora and fauna and ecological communities (RFA Clause 56). Therefore, the provisions of the EPBC Act (Part 3) for environmental assessment and approval of actions that will, or are likely to have significant impact on matters of NES are not triggered for forestry operations (such as timber harvesting and prescribed burning) within the WA RFA region.

Within the WA RFA region, matters of national environmental significance include Ramsar Wetlands and nationally threatened species and ecological communities. The wetlands are protected by tenure. Threatened species and ecological communities are protected by a suite of planning and operational controls within WA’s FMS that operate across a range of scales. The framework to guide planning and decision-making reflect both the scale and direct effects of operations locally, and as a component of an integrated management system linked into broader scales of strategic planning over longer timeframes. **Figure 3** below outlines examples of these mechanisms and processes at the three scales of management recognised by the FMP 2004–2013 and FMP 2014–2023.

Figure 3: Examples of mechanisms with the WA FMS for the protection of nationally threatened species and ecological communities

| Whole of forest | Landscape | Local |
|--|---|---|
| CAR reserve system | Flora and fauna databases and distribution models | Flora and fauna surveys and field inspections |
| Fauna habitat zones | Strategic planning initiatives such as the <i>Perth and Peel Green Growth Plan</i> (2016) | Licensing and permit systems |
| Three-year and annual timber harvest plans Silviculture guidelines Soil and water conservation guidelines | Coupe level harvest planning Silviculture prescriptions and standards Phased harvesting requirements for the management of salinity | Operational approvals and procedures specifying tactics and strategies for the protection of: <ul style="list-style-type: none"> • threatened or rare fauna • key habitat for listed threatened or specially protected species • fauna recovery translocation areas, release areas • areas with approved fauna management plans |
| Recovery plans, interim recovery plans and conservation advice | Regional nature conservation plans | Site specific recovery programs |
| Disease risk areas and identified protectable areas for <i>Phytophthora</i> disease risk management | Hygiene mapping, monitoring and risk assessment processes | Hygiene management plans |
| Invasive species management programs, threat abatement plans and risk assessments <i>Western Shield</i> fauna recovery plan | Regional and district pest and weed management strategies | District standard operating procedures and operational plans for shooting, trapping, baiting and weed management |
| Habitat and species specific fire management guidelines | Regional fire management plans | Conditional burning areas including no planned burn, temporary fire exclusion (habitat) or specified management regime |
| Habitat and species specific fire management guidelines | Regional fire management plans | Conditional burning areas including no planned burn, temporary fire exclusion (habitat) or specified management regime |
| Three-year and annual prescribed burn program | Seasonal regional and district burn programs | Individual burn prescriptions |

Governance framework and forest management agencies

WA's national parks, conservation parks, nature reserves, State forests and timber reserves are vested in the Conservation Commission. The Conservation Commission is an independent authority that oversees the administration of these lands by Parks and Wildlife and is the proponent for the purposes of assessment of a FMP which is prepared through the agency of Parks and Wildlife. **Figure 4** shows the governance framework for preparation and implementation of a FMP.

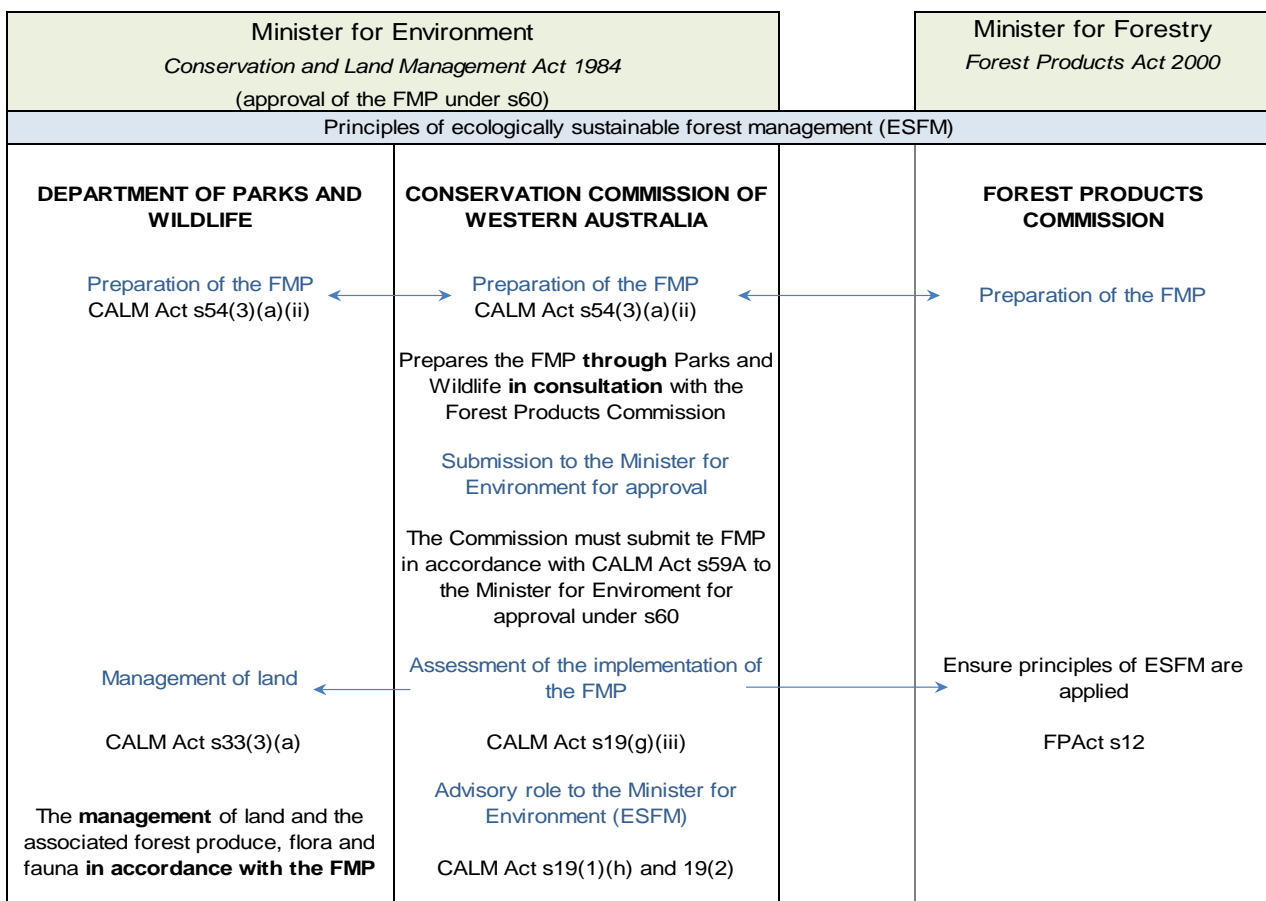
A draft FMP is prepared and released for public comment under both the CALM Act and EP Act. Following the public review process, a proposed FMP is prepared and forwarded by the Conservation Commission to the EPA for assessment. Following EPA assessment and the completion of an appeals process, a revised proposed FMP is finalised and submitted to the Environment Minister for approval. Parks and Wildlife has the lead responsibility for preparing and implementing the FMP including assessing, approving and monitoring key

activities which may disturb the environment, including timber harvesting which is guided by the framework set in the FMP.

The FPC is responsible for harvesting and regenerating native forest and plantations in State forests and timber reserves, and for the sale of wood and forest products and some associated industry matters. Other departments with administrative responsibilities include the Department of Water responsible for the administration of the Priority Areas and Protection Zones, Water Allocation Plans and Source Protection Plans, the Department of State Development overseeing major mining projects on State forests, the Department of Fire and Emergency Services coordinating emergency services for a range of natural disasters including bushfires and emergency incidents threatening life and property and the Department of Mines and Petroleum involved in the exploration for and exploitation of petroleum and other mineral resources. These departments are consulted and assist in the preparation of the FMP prior to its release for public comment under the public review process.

Figure 4: Governance framework for the forest management plan

Governance framework for the Forest Management Plan



Planning framework for timber harvesting

Forest and wood products are harvested from public native forests and plantations by the FPC under tactical planning and approval processes established by Parks and Wildlife and operational planning by the FPC. For native forests, this begins with Parks and Wildlife preparing rolling, three-year indicative harvest plans providing a forward schedule of coupes proposed for harvesting in consultation with FPC and making these

publicly available¹⁸⁸. FPC prepares annual indicative harvest plans which provide for a listing of harvest areas within various forest types (supply zones) to deliver contracted volume commitments. Annual harvest plans are released for public comment¹⁸⁹. Subsequently, for each harvest area, detailed plans are prepared by FPC and submitted to Parks and Wildlife for assessment (**Table 9**). Harvesting is conducted in accordance with approved harvest plans that include any specific coupe level approval conditions imposed by Parks and Wildlife.

Table 9: Planning and approvals process for native forest timber harvesting

| Planning document | Duration | Purpose and consultation |
|--|--|--|
| Forest management plan | Ten years | Prepared in accordance with the CALM Act 1984. Provides the framework for a range of activities, including timber harvesting in an ecologically sustainable manner. Proposes additions to the formal conservation reserve system and establishes informal reserves in State forest. Involves comprehensive public consultation. |
| Three-year (indicative) timber harvest plans | Rolling plan every one to two years | Provides a forward schedule of coupes for harvesting to supply sawlog and other products. Developed through planning processes that account for other activities within State forest and timber reserves including <ul style="list-style-type: none"> • mining • recreation • prescribed burn program • infrastructure works. Made publicly available. |
| One-year (indicative) annual harvest plan | Annually | A refinement of the three-year harvest plan that accounts for other activities and provides a forward schedule of coupes that are made available to the FPC for harvesting to supply sawlog and other products to their customers. Made publicly available. |
| Coupe plan | As required, prior to start of harvest | Planning and approval for timber harvesting specifying conditions that need to be met prior to beginning harvest operations including: <ul style="list-style-type: none"> • dieback survey and developing a hygiene management plan • flora survey • fauna identification • plan for access under moist soil conditions • identify registered Aboriginal sites. The FPC consults with the local community prior to harvesting, including neighbours or groups with an interest in the area. |

Strategic planning and sustained yield

The sustained yield of a forest is the level of commercial wood (or wood product mix) that can be maintained under a given management regime, without reducing the long-term productive capacity of the forests as they progressively adapt to changing climate conditions. For the purpose of the FMP 2014–2023, sustained yield is

¹⁸⁸ Department of Parks and Wildlife (2014d). dpaw.wa.gov.au/management/forests/forest-produce/175-planning-for-timber-harvesting

¹⁸⁹ Forest Products Commission Western Australia (n.d.). fpc.wa.gov.au/content_migration/native_forests/harvest_plans/Default.aspx

defined as “the first and second grade sawlog yield that the forest can produce for an extended period (to at least the year 2070) at a given intensity of management”.

Section 55 (1a) of the CALM Act explicitly requires that timber production from State forests and timber reserves be managed on a sustained yield basis. The sustained yield of jarrah and karri sawlogs calculated for the FMP 2014–2023 informs the setting of an ‘annual allowable cut’ for those products, which in turn provides an upper limit to the quantity that the FPC can contract to supply for the period of each FMP. These upper limits are also set for the lower grade logs, or ‘other bole volume’, that are made available as a consequence of the harvesting of sawlogs and the silvicultural treatment of stands to promote growth, ecosystem health and/or achieve other aims of management.

There is a hierarchical relationship between the sustained yields, the annual allowable cut, and the likely level of wood available for contracts to be issued under the FMP 2014–2023:

- the sustained yield figures are derived from strategic-level woodflows scheduled in the Woodstock™ model¹⁹⁰ to the year 2070, and reflect the nett area settings, silviculture and utilisation assumptions adopted for the FMP 2014–2023
- the annual allowable cut for the 10 years of a FMP is typically equivalent to the sustained yield, but can be a lesser figure which is reduced to provide for any factors not directly provided for in the sustained yield calculation, such as any safety margins for future losses arising from catastrophic bushfires, drought, pest and disease events
- the FPC may make available through contracts a lesser volume than the allowable cut.

While volumes of wood harvested annually are set by average annual sustainable yield calculations, the area cutover to achieve these volumes may vary due to harvesting of lower yielding forest types or the type of silvicultural treatment used to harvest the forest to ensure effective regeneration.

Any proposal to increase annual yields above those stipulated in the FMP 2014–2023 must be approved by the Environment Minister, in consultation with Parks and Wildlife and the Conservation Commission. Removal of log products compared to the allowable cut set in the FMP 2014–2023 is continuously monitored. Cumulative removal of jarrah and karri first and second grade sawlogs by approved harvesting operations compared to limits in the FMP 2014–2023 are reported in the Parks and Wildlife annual report. Removal of log products compared to the allowable cut is also a KPI of the FMP 2014–2023, and reported in the mid-term and end-of-term performance reviews undertaken by the Conservation Commission. The performance review includes analysing results, identifying underlying causes and developing recommendations to improve performance.

State forests and timber reserves also provide other wood and non-wood products such as firewood, burls, craftwood, wildflowers, seeds and honey (Clause 84, Section 5). These products are regulated and managed through commercial licencing arrangements.

Operational planning

The FPC prepares development strategies for the wood processing industry to align future industry opportunities with the location and log quality mix made available under FMP 2014–2023, and the mix likely to be made available under future FMPs based on woodflow modelling.

Parks and Wildlife prepares and approves rolling three-year indicative harvesting plans which are:

- developed in consultation with FPC
- consistent with the average annual allowable cut set by the FMP 2014–2023 and consequently, the volumes contracted by FPC to wood processing industries
- made publicly available.

¹⁹⁰ Woodstock™ is proprietary forest management software used to predict forest growth and yield in the native jarrah and karri forests of Western Australia.

The FPC prepares annual indicative timber harvesting plans that are:

- developed in consultation with, to the requirements of, and approved by Parks and Wildlife
- consistent with the allowable cut set in FMP 2014–2023 and the volumes contracted by FPC to wood processing industries
- made publicly available
- able to be varied at a coupe location or boundary level with the prior approval of Parks and Wildlife.

Approvals process

The FPC prepares coupe level harvesting plans using Parks and Wildlife’s planning checklist for disturbance activities. These plans must:

- be consistent with annual indicative timber harvesting plans
- provide sufficient information to enable Parks and Wildlife to evaluate the proposed operations
- be approved by Parks and Wildlife prior to disturbance operations starting.

Key components of the planning checklist for disturbance activities include:

- tenure and other management issues including land classification, tenure or proposed tenure, potential joint vesting with other organisations or individuals, excisions, lease or land exchange, exploration or tenements for mining operations, conservation covenants, proposed access or haul routes in relation to area management plans or other agreements in place for the land
- biological diversity, including elements relating to old-growth forest, informal reserves, threatened flora and fauna, threatened ecological communities, priority flora, endemic and disjunct flora, taxa that are rare or priority, endemic or disjunct, areas of high floristic diversity, conservation category, RAMSAR or wetlands of national significance, key habitat for listed threatened or specially protected species, fauna recovery translocation areas, release areas or areas with approved fauna management plans
- productive capacity, including silvicultural treatments, use of basic raw materials, roading, use of prescribed fire and rehabilitation
- health and vitality including *Phytophthora* dieback disease mapping and the development of hygiene management plans to prevent spread of the disease, insect or other pathogen infestations, priority pest species or priority diseases, environmental weeds and feral animals
- soil, including the off-road use of heavy vehicles, control of erosion, spills, treatment of fragile or steep areas and the management of acid sulphate risk
- water, including areas covered by the CAWS Act or *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, the taking of water, pesticide use and the management of salt-risk
- socio-economic including stakeholder consultation, authorised use by Aboriginal people for customary activities or joint management arrangements, management of potential conflict between operational vehicles, machinery and other road users, public utilities, noise or air quality impacts, visual amenity, impact on other operations, recreational activities and events, wildflower picking or apiary sites, native title or registered aboriginal sites, places listed on the National Heritage List, Register of the National Estate (all levels), WA Register of Heritage places or local shire Municipal Inventory Register, inventory, research plots and scientific or soil reference areas.

Planning framework for prescribed burning

The application of prescribed fire on Parks and Wildlife-managed lands is undertaken for the purposes of:

- bushfire risk management
- biodiversity management
- vegetation management
- water catchment management
- silviculture
- research
- community interest.

While bushfire risk management is an outcome in all cases (since fuel is reduced), there is no set hierarchy of importance among these burn purposes and a particular prescribed burn may contribute to outcomes for a number of purposes. However, burning for bushfire risk management and biodiversity management feature prominently in Parks and Wildlife’s program of prescribed burning.

Achieving biodiversity conservation outcomes through fire management requires the ongoing application of planned fire with carefully considered temporal and spatial dimensions. This is addressed through the development of a prescribed burning program and plans for individual prescribed burns. Both the overall burn program and burn-specific plans integrate the various land and risk management objectives of the department, consistent with the international standard for risk management, ISO 31000. This includes ensuring that the planning, approval and monitoring of each prescribed burn is undertaken by appropriately experienced and authorised personnel.

Parks and Wildlife’s prescribed burning program aims to manage biodiversity at a range of spatial scales and considers landscape, regional and local requirements. Burn program development facilitates this by applying a step-by-step process to prepare an indicative three-year burn program and an annual burn program that reflect the objectives and priorities set out in Regional Fire Management Plans (RFMPs). This process is undertaken annually to ensure an indicative three-year plan is always available to enable long-term planning and the scheduling of preparatory work. The annual burn program enables detailed planning and burn implementation work to be undertaken (**Figure 5**). Knowledge and experience acquired through the process contributes to adaptive management and continuous improvement. **Table 19** outlines the broad steps involved in prescribed burn program planning.

RFMPs are a key guidance document for planning the application of prescribed fire. RFMPs seek to integrate land use, nature conservation, strategic fire protection and community engagement considerations within a departmental region to establish landscape-scale objectives, strategies and success criteria. The RFMPs provide important input to burn program planning, which develops a continuous program of planned burning to achieve these regional objectives. RFMPs have a five-year planning horizon and are constantly reviewed through adaptive management.

Figure 5: Broad outline of the prescribed burning program planning approach

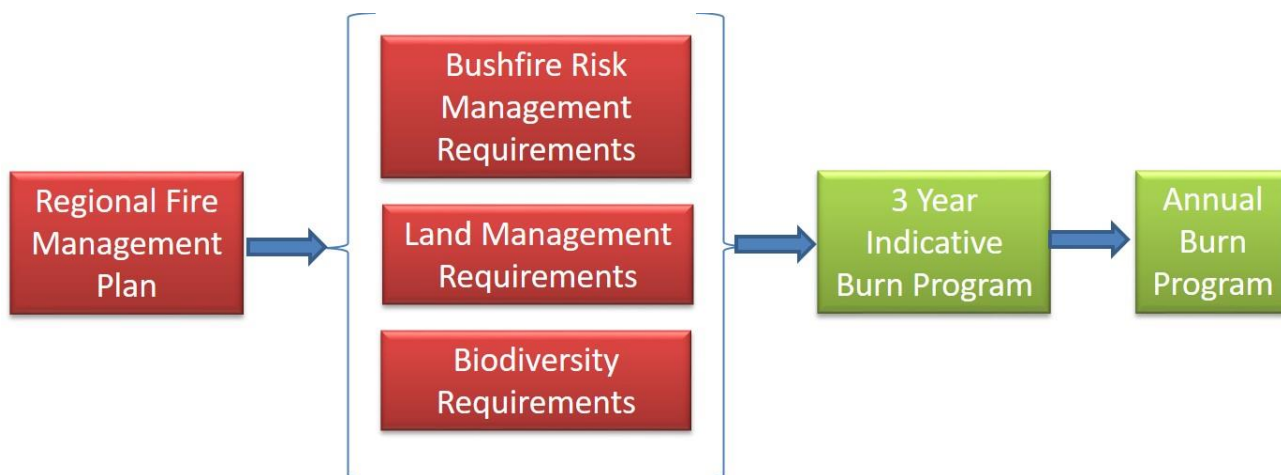


Table 19: Key steps involved in prescribed burn program planning

| Planning step |
|--|
| Identify fire management areas in the RFMP based on biogeography, land use and other considerations and establish objectives, strategies and success criteria for each. |
| Review the effectiveness of the previous season's burning program. |
| Compare the criteria set in the RFMP to the current status of the landscape and identify areas where issues need to be addressed. This includes addressing bushfire risk and biodiversity management requirements for the region and for each fire management area within it. |
| Work collaboratively with stakeholders to identify any requirements for prescribed burning to address industry, research or community concerns. |
| For each Landscape Management Unit (LMU) in forest regions: <ul style="list-style-type: none"> • consider the existing spatial and temporal arrangement of fire history • compare this to the desired situation to achieve biodiversity outcomes for the LMU • target areas in each LMU for burning to achieve the desired situation. |
| Identify the 'conditional burning areas' in the region which, for various reasons, will have fire excluded from them during the planning period. |
| Determine whether prescribed burns that were planned for, but not completed, last season, will be carried forward and, if so, to what season. |
| Based on the steps above, draft an indicative program of prescribed burning that addresses the requirements for bushfire risk management, biodiversity management, managing vegetation and habitats, managing water catchments, silviculture, research and community interest outcomes. |
| Undertake stakeholder consultation (local government, Department of Fire and Emergency Services, local community, industry etc); consider feedback received and amend the draft program if required. |
| Combine the draft district programs to formulate a draft regional program. |
| Develop burn purpose statements for each prescribed burn |
| Develop a preliminary risk context statement for each prescribed burn |
| Determine a priority for each prescribed burn |
| Assign each prescribed burn to a funding area |
| Confirm a three-year indicative prescribed burn program and annual prescribed burn program. |
| Approval by the Regional Manager |
| Collate the proposed regional programs to formulate a State program. |
| State program tabled at meeting of Parks and Wildlife Executive by the Director Regional and Fire Management for approval. |
| The three-year indicative prescribed burn program and annual prescribed burn program is published on the Parks and Wildlife public website and communicated/provided to key stakeholders. |

Certification

During Period 3, the FPC maintained the certified status of its defined forest area under the Australian Forestry Standard AS 4708:2013. In 2014, the FPC attained Forest Stewardship Council® (FSC®) Controlled Wood Standard (FSC-STD-30-010) certification for a defined area of the karri forest.

The FPC is certified to ISO 14001:2015 (previously ISO 14001:2007), the international standard for environmental management systems (EMS). The EMS certification enables FPC to demonstrate its commitment to the environment. The standard provides guidance on how to manage the environmental aspects of FPC's business activities more effectively, while taking into consideration environmental protection, pollution prevention and socio-economic needs. The standard also assists FPC to:

- minimise how FPC operations negatively affect the environment
- comply with applicable laws, regulations, and other environmentally oriented requirements
- implement continual improvement.

EMS certification is applicable to FPC's entire business. This encompasses all operations, including management of wild and plantation sandalwood, softwood and hardwood plantations, the nursery and seed centre in Manjimup and south-west native forests.

Monitoring, reporting, review and continual improvement

Parks and Wildlife and the Conservation Commission evaluate the results from research, monitoring, audits and adaptive management projects to assess performance of the WA FMS and whether plans, policies, guidelines, operating procedures and subsidiary documents should be amended. Actions specified in a FMP require the Conservation Commission and Parks and Wildlife to take action that is reasonable and practicable to address problems identified in the FMS. Where performance targets have not been achieved, the relevant agency is required to investigate the cause and report, through the mid-term and end-of-term performance reviews, to the Conservation Commission, which will submit the reports to the Environment Minister. The Conservation Commission evaluates the need for revision of management practices in the context of its assessment and auditing function, in consultation with Parks and Wildlife and where relevant the FPC, and provides its advice through the reports on the mid-term and end-of-term performance reviews to the Environment Minister.

WA has committed to increasing knowledge and undertaking adaptive management to address identified gaps or potential future gaps in the FMS, thus providing evidence of a commitment to continuous improvement.

Key aspects of the WA monitoring and review program include:

- delivery of management activities in line with a 10-year FMP
- mid-term and end-of-term performance reviews including KPI reporting that tracks the implementation of a FMP
- five-yearly reviews of progress with implementation of the WA RFA
- operational (regional and district level) monitoring of disturbance activities (including timber harvesting) against requirements and approval conditions
- Works Improvement Notices to document non-conformances identified by operational monitoring and to communicate remedial actions
- annual FMP compliance report published on the FPC website
- audits of FPC and Parks and Wildlife FMS and operations conducted by Parks and Wildlife's Management Audit Branch
- internal and independent external audits to maintain FPC's certification to the AFS, FSC Controlled Wood and ISO 14001 standards
- research informing adaptive management
- stakeholder engagement.

Work Improvement Notices are part of the monitoring and conformance system used for Parks and Wildlife-managed lands to alert external agencies operating on the land that they have failed to meet an environmental standard, management requirement, condition of approval, or where there is an unsatisfactory environmental outcome. When this occurs, it is referred to as non-conformance. The issuing of a works improvement notice provides Parks and Wildlife with a:

- process to alert Parks and Wildlife staff and external agencies to non-conformance of a management activity or other requirement(s)
- trigger to rectify non-conformance or poor outcomes
- means to document non-conformance
- means to monitor the frequency with which non-conformance occurs
- means to monitor the conditions of approval or guidelines for which non-conformance is most often observed.

Attachment 1: State legislation relevant to the conduct of forest practices in WA

| Legislation | Agency | Purpose | Tenure |
|--|---|---|---------------|
| <i>Aboriginal Heritage Act 1972</i> | Department of Parks and Wildlife | to make provision for the preservation on behalf of the community of places and objects customarily used by or traditional to the original inhabitants of Australia or their descendants, or associated therewith | All tenures |
| <i>Agriculture and Related Resources Protection Act 1976</i> | Department of Agriculture and Food | to provide for the management, control and prevention of certain plants and animals, for the prohibition and regulation of the introduction and spread of certain plants and of the introduction, spread and keeping of certain animals, for the protection of agriculture and related resources generally, and for incidental and other purposes | All tenures |
| <i>Agricultural and Veterinary Chemicals (Western Australia) Act 1995</i> | Department of Agriculture and Food | to apply certain laws of the Commonwealth relating to agricultural and veterinary chemical products as laws of Western Australia and for related purposes | All tenures |
| <i>Biosecurity and Agriculture Management Act 2007</i> | Department of Agriculture and Food | the control of certain organisms, the use of agricultural and veterinary chemicals, the identification and attainment of standards of quality and safety for agricultural products, animal feeds, fertilisers and other substances and things, the establishment of a Declared Pest Account, a Modified Penalties Revenue Account and accounts for industry funding schemes | All tenures |
| <i>Bush Fires Act 1954</i> | Department of Fire and Emergency Services | to make better provision for diminishing the dangers resulting from bush fires, for the prevention, control and extinguishment of bush fires | All tenures |
| <i>Conservation and Land Management Act 1984</i> | Department of Parks and Wildlife | to make better provision for the use, protection and management of certain public lands and waters and the flora and fauna thereof, to establish authorities to be responsible therefor | Crown land |
| <i>Contaminated Sites Act 2003</i> | Department of Environment Regulation | the identification, recording, management and remediation of contaminated sites, to consequentially amend certain other Acts and for related purposes | All tenures |
| <i>Country Areas Water Supply Act 1947</i> | Department of Water | to safeguard water supplies | All tenures |
| <i>Emergency Management Act 2005</i> | Department of Fire and Emergency Services | to provide for prompt and coordinated organisation of emergency management in the State | All tenures |

| Legislation | Agency | Purpose | Tenure |
|--|---|---|---|
| <i>Environmental Protection Act 1986</i> | Environmental Protection Authority | to provide for an Environmental Protection Authority, for: <ul style="list-style-type: none"> • the prevention, control and abatement of pollution and environmental harm • the conservation, preservation, protection, enhancement and management of the environment • for matters incidental to or connected with the foregoing. | All tenures |
| <i>Fire and Emergency Services Act 1998</i> | Department of Fire and Emergency Services | to provide for functions relating to the provision and management of emergency services, and for related purposes | All tenures |
| <i>Forest Products Act 2000</i> | Forest Products Commission | to establish the Forest Products Commission and for related matters | All tenures |
| <i>Health Act 1911</i> | Health Department of Western Australia | to consolidate and amend the law relating to public health | All tenures |
| <i>Heritage of Western Australia Act 1990</i> | Heritage Council of Western Australia | to provide for, and to encourage, the conservation of places which have significance to the cultural heritage in the State, to establish the Heritage Council of Western Australia | All tenures |
| <i>Land Administration Act 1997</i> | Department of Lands | to consolidate and reform law about Crown land and the compulsory acquisition of land | Crown land |
| <i>Metropolitan Water Supply, Sewerage, and Drainage Act 1909</i> | Department of Water | to constitute the Metropolitan Water, Sewerage, and Drainage Area | Metropolitan Water, Sewerage, and Drainage Area |
| <i>Mining Act 1978</i> | Department of Mines and Petroleum | to consolidate and amend the law relating to mining and for incidental and other purposes | All tenures |
| <i>Petroleum and Geothermal Energy Resources Act 1967</i> | Department of Mines and Petroleum | the exploration for, and the exploitation of, petroleum resources, geothermal energy resources, and certain other resources | Crown land |
| <i>Petroleum Pipelines Act 1969</i> | Department of Mines and Petroleum | construction, operation and maintenance of pipelines for the conveyance of petroleum and for purposes connected therewith | All tenures |
| <i>Rights in Water and Irrigation Act 1914</i> | Department of Water | makes provision for the regulation, management, use and protection of water resources, and for related purposes | All tenures |

| Legislation | Agency | Purpose | Tenure |
|--|------------------------------------|---|--------------------|
| <i>Soil and Land Conservation Act 1945</i> | Department of Agriculture and Food | land drainage, clearing, land degradation assessment, compliance, covenanting and Land Conservation District Committees | All tenures |
| <i>State Records Act 2000</i> | Department of Culture and the Arts | provides for keeping of State records | N/A ¹⁹¹ |
| <i>Water Agencies (Powers) Act 1984</i> | Department of Water | to give the Minister functions and powers, to make other provisions in respect of the Minister's functions, to establish the Water Resources Ministerial Body and the Water Resources Council | |
| <i>Waterways Conservation Act 1976</i> | Department of Water | to make provision for the conservation and management of certain waters and of the associated land and environment | |
| <i>Wildlife Conservation Act 1950</i> | Department of Parks and Wildlife | conservation and legal protection of flora and fauna | All tenures |

State Agreement Acts

A State Agreement Act (SAA) is a legal contract between the WA Government and a proponent of a major project within the boundaries of Western Australia. It is an indication of the State's support for and commitment to the major project. State Agreements detail the rights, obligations, terms and conditions for the development of the specific project and establish a framework for ongoing relations and cooperation between the state and the project proponents.

SAA's relating to the forest products industry and mining operations on public forest within the WA RFA region are:

Forest Products

- *Albany Hardwood Plantation Agreement Act 1993*
- *Bunbury Treefarm Project Agreement Act 1995*
- *Collie Hardwood Plantation Agreement Act 1995*
- *Dardanup Pine Log Sawmill Agreement Act 1992*
- *Paper Mill Agreement Act 1960*
- *Wood Processing (WESFI) Agreement Act 2000*
- *Wood Processing (Wesbeam) Agreement Act 2002*

Mining

- *Alumina Refinery Agreement Act 1961*
- *Alumina Refinery Agreements (Alcoa) Amendment Act 1967*
- *Alumina Refinery (Pinjarra) Agreement Act 1969*
- *Alumina Refinery (Wagerup) Agreement and Acts Amendment Act 1978*
- *Alumina Refinery (Worsley) Agreement Act 1973*
- *Collie Coal (Griffin) Agreement Act 1979*
- *Collie Coal (Western Collieries) Agreement Act 1979*
- *Mineral Sands (Beenup) Agreement Act 1995*
- *Wundowie Charcoal Iron Industry Sale Agreement Act 1974*

¹⁹¹ This Act does not have tenure, however the Western Australia state government administers the Act

Key Commonwealth legislation which is relevant to the WA RFA region is:

- *Australian Heritage Council Act 2003*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Export Control Act 1982*
- *Regional Forest Agreement Act 2002*

Attachment 2: Hierarchy of controlling documents

| Controlling Document | Content | Custodian |
|---|---|--|
| Acts of Parliament | Bill that has been enacted by Parliament and which contains a sequence of provisions containing statements and rules designed to give effect to a particular national or State responsibility | WA Parliament Australian Parliament |
| Government policy, strategy and agreement | Policy on specific issues relevant to forest management that has a statutory or whole-of-government backing. Developed to clarify uncertainty or fill gaps in legislation or to guide decisions where there are choices, especially in regard to contentious issues | WA Government, Australian Government |
| Management plan | Strategies for management utilising CALM Act requirements and relevant policies | Conservation Commission |
| Corporate policy | Corporate level statement of principles and rules to guide decisions and actions in the conduct of the department's business | Conservation Commission, Parks and Wildlife, Forest Products Commission and other relevant government agencies |
| Corporate guideline | Corporate level set of procedures that will guide and direct actions by departmental staff to achieve consistency and required standards. Guidelines contain sufficient detail to help ensure that processes are streamlined to a set routine | Parks and Wildlife, Forest Products Commission and other relevant government agencies |
| Code of Practice | Details of the principles about tasks that are required and how tasks are to be performed to meet management requirements | Parks and Wildlife, Forest Products Commission and other industry bodies depending on the activity |
| Operational policy | Divisional level statement of operations policy to guide decisions and actions by departmental staff | Parks and Wildlife Forests Product Commission |
| Divisional guidelines and procedures Alternative names: Standard operating procedures, protocols | Divisional, branch, section, unit or regional level set of guidelines to guide and direct actions by departmental staff | Parks and Wildlife/Forest Products Commission Director, Branch, Section, Unit or Regional Manager |
| Manual Alternative name: User guide | Branch, regional or functional level compendium of documents, mostly technical in nature, to assist people to locate and use a particular system or process | Parks and Wildlife/Forest Products Commission Director, Branch, Section, Unit or Regional Manager |
| Prescription Work Instructions | Branch, region or district level documents that direct people how to undertake a particular task | Parks and Wildlife/Forest Products Commission District/Region/Branch Manager |

Attachment 3: Key controlling documents for forest management agencies

Department of Parks and Wildlife policies¹⁹²

- *1 Department of Parks and Wildlife - Key Documents*
- *3 Management of Phytophthora Disease*
- *10 Legislative Authorisations - Appointment of Authorised Officers*
- *11 Regulation of the Forest Products Industry*
- *12 Management of Pest Animals*
- *14 Weeds Management*
- *15 Community Involvement*
- *17 Training*
- *18 Recreation, Tourism and Visitor Services*
- *19 Fire Management*
- *28 Science*
- *31 Terrestrial Conservation Reserve System*
- *34 Visual Resource Management of Lands and Waters Managed by CALM*
- *35 Conserving Threatened Species and Ecological Communities*
- *40 Road management (this policy is under review and some content is no longer current)*
- *41 Beekeeping on public land*
- *53 Visitor risk management in the Department of Environment and Conservation*
- *55 Commercial filming on CALM managed lands and waters*
- *56 Risk Management*
- *57 DEC Enforcement and prosecutions policy*
- *62 Identification and Management of Wilderness and Surrounding Areas*
- *63 Information Management Policy*
- *65 Good Neighbour policy*
- *68 Management of Organised Group Activities*
- *69 Acknowledgment of Aboriginal traditional Custodians*
- *76 Public Participation and Stakeholder Engagement*
- *80 Protection of Caves and Karst*
- *86 Aboriginal Customary Activities*
- *87 Aboriginal Joint Management*
- *88 Prescribed Burning*
- *91 Burial of Aboriginal People on CALM Act Land*

- *Science Policy Guideline No. 1 – Science plans*
- *Science Policy Guideline No. 2 – Implementing research results*
- *Science Policy Guideline No. 3 – Publications, reports and manuscripts*
- *Science Policy Guideline No. 4 – Databases and their management*
- *Science Policy Guideline No. 5 – Scientific ethics and etiquette*

Conservation Commission policies and position statements¹⁹³

- *Policy statement 3 (2008) – Basic raw materials government and local government access to conservation estate*
- *Policy statement 4 (2006) – Minor changes to Conservation Estate*

¹⁹² Any further information or requests should be directed to the Parks and Wildlife website - dpaw.wa.gov.au or by email to forest.info@dpaw.wa.gov.au

¹⁹³ All documents are available through the Document search web page - conservation.wa.gov.au/document-search.aspx

- *Audit Policy (2008) – for the performance assessment of conservation reserve and forest management plans and biodiversity management in Western Australia*
- *Position Statement 1 (2011) – Fire management*
- *Position Statement 2 (2011) – Implementation of conservation reserve proposals*
- *Position Statement 3 (2011) – Mining in terrestrial conservation reserves*
- *Position Statement 6 (2012) – Management plans for lands vested in the Conservation Commission under the Conservation and Land Management Act 1984*

Parks and Wildlife guidance documents

- *Biodiversity Conservation Appraisal System*
- *Code of Practice for Fire Management*
- *Code of Practice for Timber Harvesting in Western Australia*
- *Guidelines for conservation management plans relating to mineral exploration on lands managed by DEC*
- *Guidelines for the management and rehabilitation of basic raw material pits*
- *Management of commercial harvesting of protected flora in Western Australia 2008-2013*
- *Manual of management guidelines for timber harvesting in Western Australia*
- *Management guideline No. 1 – User guide for approvals matrix for operations on CALM Act Reserves*
- *Phytophthora cinnamomi and disease caused by it – Volume 1, Management Guideline*
- *Silviculture guideline no. 1 – Silvicultural practice in the jarrah forest*
- *Silviculture guideline no. 2 – Silvicultural practice in the wandoo forest and woodland*
- *SFM interim guideline no. 2 – Interim guideline for the first thinning of bauxite rehabilitation areas established before 1988 with exotic species in the Wungong catchment*
- *SFM guideline no. 2 – Guidelines for the protection of the values of informal reserves and fauna habitat zones*
- *SFM guideline no. 5 – Soil and water conservation*
- *SFM guideline no. 6 – Guidelines for the selection of fauna habitat zones*
- *FEM manual no. 1 – Manual of procedures for the management of soils associated with timber harvesting in native forests*

FPC policies and guidance documents¹⁹⁴

- *Code of Practice for Timber Plantations (2006)*
- *Code of Practice for Timber Harvesting in Western Australia*
- *Code of Practice for Fire Management*
- *Code of Practice for the use of Agricultural and Veterinary Chemicals in Western Australia*
- *Biosecurity Manual for the Plantation Timber Industry*
- *Policy 9 – Forest management*
- *Policy 30 – Utilisation of forest products from native forests*
- *Policy 37 – Seedling donations*
- *Policy 46 – Land purchase*

¹⁹⁴ Generally, Procedures, Contractor Procedures and Work Instructions are not publicly available as are internal working documents or are commercial in confidence. Further information can be found at fpc.wa.gov.au or dpaw.wa.gov.au

- *Procedure 8 – Risk assessment for land contamination*
- *Procedure 18 – Emergency response for a wildfire*
- *Procedure 22 – Emergency response for an incursion of an exotic pest*
- *Procedure 35 – Sandalwood plantation inventory plots*
- *Procedure 37 – Incident management*
- *Procedure 44 – Identifying and protecting native title rights as well as Noongar and non-Aboriginal heritage sites in the South West forest region*
- *Procedure 45 – Forest certification communication requirements and specifications for sales documentation*
- *Procedure 46 – Targeted fauna surveys within pure and mixed karri forest*
- *Procedure 47 – Identification assessment and demarcation of Type 2 old-growth karri forest*
- *Procedure 48 – Chain of responsibility compliance*
- *Procedure 55 – Defined forest area*
- *Procedure 60 – Log grading*
- *Procedure 61 – Log adjudication*
- *Procedure 62 – Auction process*
- *Procedure 63 – Native forest log specifications*
- *Procedure 69 – Piecework treemarking in the jarrah forest*
- *Procedure 70 – Identifying and marking hazards in native forest coupes*
- *Procedure 74 – Demarcating harvest exclusion areas in native forest coupes*
- *Procedure 77 – Tree felling and machine operation near power lines, pipelines or on roads*
- *Procedure 80 – Myrtle Rust incursion prevention*
- *Procedure 83 – Integrated Forest Management System and corporate governance framework*
- *Procedure 95 – Approval for disturbance activities*

- *Contractor procedure A1 – Glossary*
- *Contractor procedure C1 – Obligations*
- *Contractor procedure C2 – Timber workers registration*
- *Contractor procedure C4 – Delivery notes*
- *Contractor procedure E1 – Incident reporting*
- *Contractor procedure E2 – Management of the spread of weeds and diseases*
- *Contractor procedure E3 – Environmental compliance*
- *Contractor procedure E4 – Soil and water management*
- *Contractor procedure E5 – Integrated Forest Management System (IFMS) induction for Contractors*
- *Contractor procedure F1 – Fire requirements*
- *Contractor procedure H1 – Pre-operation harvesting briefing*
- *Contractor procedure H2 – Planning extraction tracks and log landings*
- *Contractor procedure H3 – Pre-harvesting scrub rolling*
- *Contractor procedure H4 – Felling*
- *Contractor procedure H5 – In-forest treatment – Log preparation*
- *Contractor procedure H6 – Log landing construction and management*
- *Contractor procedure H7 – Extraction*
- *Contractor procedure H8 – Log landing segregation, loading and stockpiling*
- *Contractor procedure H9 – Haulage*
- *Contractor procedure H10 – In-coupe rehabilitation*
- *Contractor procedure H11 – Certification*
- *Contractor procedure H12 – Operations on mine sites or private land*
- *Contractor procedure O1 – Safety requirements*
- *Contractor procedure O2 – Road works, earth works or reclamation accreditation*
- *Contractor procedure R1 – Pre-operation roading briefing*
- *Contractor procedure R2 – Clearing new road alignments*

- *Contractor procedure R3 – Clearing of existing alignments*
- *Contractor procedure R4 – Road construction and forming*
- *Contractor procedure R5 – Road surfacing*
- *Contractor procedure R6 – Road drainage*
- *Contractor procedure R7 – Road maintenance*
- *Contractor procedure R8 – Basic raw material*
- *Contractor procedure R9 – Roading completion and certification*
- *Contractor procedure S1 – Standard bush signs and markings*

- *Work instruction 23 – Taping in of road alignments in South West native forests*
- *Work instruction 25 – Protocol for thinning operation assessment (FPC470 form)*
- *Work instruction 29 – South West native forest harvesting forms*
- *Work instruction 30 – Environmental compliance monitoring in South West native forest harvesting operations*
- *Work instruction 31 – General vehicle loading*
- *Work instruction 32 – Harvey Mill – Vehicle loading*
- *Work instruction 34 – Log transport compliance checks*
- *Work instruction 35 – Preparing worksites for contractors*

Other relevant documents

- *Unsealed road manual – Guidelines to good practice (Australian Roads Research Board 2009)*
- *WA Environmental Offsets Policy (Government of Western Australia 2011)*

Appendix 11 | Reporting mechanisms for sustainability indicators

Clauses 51 and 52 of the WA RFA call for the establishment of an agreed set of sustainability indicators consistent with the Montréal Process Criteria (listed at Attachment 7, WA RFA), and that WA will monitor and collect results for these indicators. The Montréal Process Implementation Group for Australia has adapted the 54 international indicators to encompass Australia’s unique forests which allows reporting relevant to Australia. A set of 44 indicators was adopted to demonstrate sustainable forest management in Australia.

The independent review of the WA RFA first and second five-yearly progress report (December 2013) recommended (Recommendation 6) a review of the indicators used for ESFM to ensure they adequately address each of the seven Montréal Criteria. The Australian and WA Governments (Joint Australian and Western Australian government response, November 2014) agreed to consider the indicators used in the FMP 2014–2023, against the suite of criteria and indicators adopted by Australia under the Montréal Process (and committed to in the WA RFA) and outline the extent to which they correspond.

The FMP 2014–2023 is WA’s key policy framework for managing south-west forests covering the WA RFA region and includes 134 management activities¹⁹⁵ to provide for ESFM and 24 key performance indicators (KPIs¹⁹⁶) developed to measure the success of implementing the FMP. The FMP requires the preparation of two performance reports at the mid and end points of the FMP’s duration.

In addition to reporting under the FMP, Parks and Wildlife and the FPC report annually on a range of effectiveness or efficiency indicators as well as other financial or operational metrics that align with the national indicators.

In accordance with recommendation 6, **Table 20** outlines the national indicators under each criterion with corresponding WA indicators and other supporting documents or reporting processes.

Table 20: The national Montréal Process indicators with corresponding WA indicators and other supporting documents or reporting process

| National indicators | | WA indicators and/or reporting mechanisms |
|--|---|---|
| <i>Criterion 1 Conservation of biological diversity</i> | | |
| 1.1.a | <p>Area of forest by forest type and tenure</p> <p>This indicator uses the area for each forest type over time as a broad measure of the extent to which forest ecosystems and their diversity are being maintained. Reporting on forest tenure aids our understanding of how different land management regimes may impact on forest biodiversity.</p> | FMP KPI ¹⁹⁷ 15 – Area of native forest and plantations |

¹⁹⁵ Management activities are operations proposed to be undertaken in the FMP area that seek to achieve goals or desired outcomes of which some will protect identified values or address identified threats.

¹⁹⁶ KPIs are performance targets for key goals i.e. desired outcomes of the FMP.

¹⁹⁷ The KPIs for FMP 2004–2013 and FMP 2014–2023 are reported at the mid-term and end-of-term performance reports however, some of the metrics of the KPIs are reported annually in the Parks and Wildlife Annual Report or yearbook and FPC’s annual report.

| National indicators | | WA indicators and/or reporting mechanisms |
|---------------------|---|--|
| 1.1.b | <p>Area of forest by growth stage</p> <p>This indicator measures the change in area of forest by growth stage to reflect how ecological processes and species associated with those processes change as forests grow. The age and size of trees is important in maintaining forest biodiversity.</p> | <p>FMP Management activity 6.1 - Annual reporting on extent and status of old-growth forest.</p> <p>FMP KPI 17 – Silvicultural outcomes for the area of forest cutover</p> <p>Parks and Wildlife Yearbook¹⁹⁸ – Annual reporting on silvicultural objectives</p> <p>FPC key effectiveness indicator¹⁹⁹ 3 – Karri forest regeneration</p> <p>FPC key effectiveness indicator 6 – Achievement of thinning schedules in karri forest</p> |
| 1.1.c | <p>Area of forest in protected area categories</p> <p>This indicator uses the area and proportion of forest ecosystems reserved through formal and informal processes as a measure of the emphasis placed by society on the preservation of representative ecosystems as a strategy to conserve biodiversity.</p> | <p>FMP KPI 15 measure 2 - Area of forest by land category, including the net area available for wood production</p> <p>Parks and Wildlife Annual report²⁰⁰ – Summary of area managed for each region by tenure classification</p> |
| 1.1.d | <p>Fragmentation of forest cover</p> <p>This indicator describes the loss of forest cover and the spatial configuration of that loss.</p> <p>Fragmentation can impact on forest-dwelling species and gene pools through changes in the connectivity of populations and the loss of species genetic variability.</p> | <p>FMP KPI 1 – Whole of forest condition</p> <p>FMP KPI 15 – Area of native forests and plantations</p> |
| 1.2.a | <p>Forest dwelling species for which ecological information is available</p> <p>This indicator reports the level of information available to manage forest dwelling species and tracks changes in this knowledge over time. The amount of habitat, disturbance and life history information available to make management decisions indicates the capacity to assess risk to species and to implement conservation strategies.</p> | <p>FMP KPI 2 - Threatened Ecological Communities (TECs) and Priority Ecological Communities (PECs)</p> <p>FMP KPI 3 - Ramsar and nationally listed wetlands</p> <p>FMP KPI 4 - Threatened flora</p> <p>FMP KPI 5 - Threatened fauna</p> <p>FMP KPI 24 (Performance measure 2) - Scientific understanding of ecosystem characteristics and functions</p> <p><i>FORESTCHECK</i>²⁰¹ program reporting</p> |
| 1.2.b | <p>The status of forest dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment</p> <p>This indicator measures the conservation status of nationally listed threatened forest dwelling species. Documentation of this information over time allows analysis of changes to species' conservation status, indicating the extent to which forest species biodiversity is being maintained.</p> | <p>WA Threatened species lists²⁰² periodically updated and reported each year in Parks and Wildlife Annual Report KPIs 1 – 3</p> <p>National data (EPBC Act list of threatened species²⁰³) reported via State of the Forests Reporting supported by ABARES, NFI, EPBC and other national databases</p> |

¹⁹⁸ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/annual-report-and-yearbook

¹⁹⁹ Forest Products Commission Western Australia (2015). fpc.wa.gov.au/about-us/publications/annual-reports

²⁰⁰ Department of Parks and Wildlife (n.d.) dpaw.wa.gov.au/about-us/annual-report-and-yearbook

²⁰¹ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research/landscape-conservation-research/183-forestcheck

²⁰² Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities

²⁰³ environment.gov.au/biodiversity/threatened/species

| National indicators | | WA indicators and/or reporting mechanisms |
|--|--|---|
| 1.2.c | <p>Representative species from a range of habitats monitored at scales relevant to regional forest management</p> <p>This indicator provides broad habitat, population, and range information for representative forest dwelling flora and fauna. Evidence of changing ranges or densities of forest dwelling species can be used to guide forest management activities so that they are consistent with maintenance of forest biodiversity.</p> | <p>Naturemap²⁰⁴ and <i>FORESTCHECK</i> program reporting</p> <p>Case studies e.g. birdlife Australia annual great cocky count²⁰⁵ / recovery plan monitoring</p> |
| 1.3.a | <p>Forest associated species at risk from isolation and the loss of genetic variation, and conservation efforts for those species</p> <p>This indicator assesses the risks to loss of forest genetic variation and describes the formal measures designed to mitigate this risk. A loss of genetic diversity in species can result in a decreased ability to adapt to future environmental change, and thus a higher risk of extinction.</p> | <p>National data (State of the Forests Reporting²⁰⁶) National Forest Inventory and listing statements</p> |
| 1.3.b | <p>Native forest and plantations of indigenous timber species which have genetic resource conservation mechanisms in place</p> <p>This indicator uses the coverage and implementation of formal genetic resource conservation mechanisms as a measure of the degree to which timber species' genetic resources are managed and conserved.</p> | <p>National data (State of the Forests Reporting) – Tree improvement and breeding program statistics</p> |
| Criterion 2 Maintenance of productive capacity of forest ecosystems | | |
| 2.1.a | <p>Native forest available for wood production, area harvested, and growing stock of merchantable and non-merchantable tree species</p> <p>This indicator reports the capacity of forests to sustainably produce wood to meet society's needs into the future. The area of native forest available for wood production, the nature of the growing stock, and the area harvested over time provide means to demonstrate the sustainability of forest management.</p> | <p>FMP KPI 15 - Area of native forest and plantations</p> |
| 2.1.b | <p>Age class and growing stock of plantations</p> <p>This indicator uses the area, age class and growing stock of native and exotic species plantations to assess the volume of timber that Australia's plantation forests can supply now and into the future.</p> | <p>National plantation inventory²⁰⁷</p> |

²⁰⁴ Department of Parks and Wildlife (n.d.). naturemap.dpaw.wa.gov.au/

²⁰⁵ Birdlife Australia (n.d.). birdlife.org.au/projects/southwest-black-cockatoo-recovery/great-cocky-count-swbc

²⁰⁶ Montreal Process Implementation Working Group for Australia and National Forest Inventory Steering Committee (2013). agriculture.gov.au/abares/forestsaustralia/Pages/SOFR/default.aspx

²⁰⁷ Department of Agriculture and Water Resources (2016)

agriculture.gov.au/abares/publications/pubs?url=http://143.188.17.20/anrdl/DAFFService/pubs.php?seriesName=NatPlantInv%26sort=date%26sortOrder=desc%26showIndex=true%26outputType=list%26indexLetter=_

| National indicators | | WA indicators and/or reporting mechanisms |
|---|---|---|
| 2.1.c | <p>Annual removal of wood products compared to the volume determined to be sustainable for native forests, and future yields for plantations</p> <p>This indicator measures the harvest levels of wood products in relation to future yields. The capacity to implement strategies to deal with changing demand for forest products based on future yields from both native and plantation forests is an integral part of sustainable forest management.</p> | <p>FMP KPI 16 – Removal of log products compared to the allowable cut set in the FMP</p> <p>FMP KPI 19 – Plantations managed to meet State Agreements and contractual obligations</p> <p>Parks and Wildlife annual reporting of annual and cumulative sawlog removals</p> <p>FPC annual reporting of annual log product removals against allowable cut</p> |
| 2.1.d | <p>Annual removal of non-wood forest products compared to the level determined to be sustainable</p> <p>This indicator is used to assess the sustainability of the harvest of non-wood forest products. These products can represent a significant asset base supporting the livelihoods of remote communities.</p> | <p>Parks and Wildlife yearbook reports annually on apiary site permits, flora & fauna licences and permits</p> |
| 2.1.e | <p>The area of native forest harvested and the proportion of that effectively regenerated, and the area of plantation harvested and the proportion of that effectively re-established</p> <p>This indicator is used to assess the success of the re-establishment of forests after harvesting. Re-establishment is critical to the maintenance of the productive capacity of the forest.</p> | <p>FMP KPI 15 - Area of native forest and plantations</p> <p>FMP KPI 18 - Regeneration of harvested areas (native forest and plantation)</p> <p>FPC Key effectiveness indicator 3 - Extent of native karri forest regenerated relative to area harvested</p> <p>FPC Key effectiveness indicator 4 - Timeliness of karri forest regeneration</p> <p>FPC Key effectiveness indicator 5 - Effectiveness of regeneration of native karri forest</p> <p>FPC Key effectiveness indicator 6 - The achievement of thinning schedules in karri forest</p> <p>FPC Key effectiveness indicator 7 - Area of plantation established against target</p> |
| Criterion 3 Maintenance of ecosystem health and vitality | | |
| 3.1.a | <p>Scale and impact of agents and processes affecting forest health and vitality</p> <p>This indicator identifies the scale and impact on forest health of a variety of processes and agents, both natural and human-induced. Through the regular collection of this information, significant changes to the health and vitality of forest ecosystems can be monitored and measured.</p> | <p>FMP KPI 1 - Metrics for whole of forest condition comprising mosaic of healthy ecosystems</p> <p>FMP KPI 6 (Performance measure)- Area of forest by fuel age classification</p> <p>FMP KPI 8 – Forest ecosystem not being degraded by weeds, pests and diseases</p> <p>FMP KPI 10 - Stream condition & groundwater level within fully forested catchments</p> <p>FMP KPI 12 - Increased knowledge of trends in climate</p> <p>FMP KPI 13 - Adaptive response to changing climate</p> |
| 3.1.b | <p>Area of forest burnt by planned and unplanned fire</p> <p>This indicator is used to provide an understanding of the impact of fire on forests through the reporting of planned and unplanned fire. Fire is an important part of many forest ecosystems in Australia and may have either positive or negative impacts on forest health and vitality.</p> | <p>Parks and Wildlife annual reporting of burn statistics and metrics</p> |

| National indicators | | WA indicators and/or reporting mechanisms |
|---|--|---|
| Criterion 4 Conservation and maintenance of soil and water resources | | |
| 4.1.a | <p>Area of forest land managed primarily for protective functions</p> <p>The area of forest land where priority is given to protecting soil and hydrological functions provides an indication of the emphasis being placed by society on the conservation of these values. This indicator includes areas managed to protect soil and water by excluding incompatible activities.</p> | FMP KPI 15 (Performance measure 2) - Area of forest by land category |
| 4.1.b | <p>Management of the risk of soil erosion in forests</p> <p>This indicator assesses the extent to which the risk of soil erosion has been explicitly identified and addressed in forest management. The avoidance of soil erosion reflects the extent to which associated values, including soil fertility and water quality, are protected.</p> | Parks and Wildlife Yearbook reports annually on harvest planning and approval metrics |
| 4.1.c | <p>Management of the risks to soil physical properties in forests</p> <p>This indicator measures the extent to which the risk to soil physical properties in forests has been explicitly identified and addressed. The protection of soil physical properties, including minimising soil compaction and redistribution, affects soil integrity and, as a consequence, many associated values.</p> | FMP KPI 9 - Level of soil damage resulting from timber harvesting |
| 4.1.d | <p>Management of the risks to water quantity from forests</p> <p>This indicator measures the extent to which the risk to water quantity has been explicitly identified and addressed in forest management. Water quantity is important for ecosystem health and water supply for human use.</p> | FMP KPI 11 - Effectiveness of silviculture for water production |
| 4.1.e | <p>Management of the risks to water quality in forests</p> <p>This indicator measures the extent to which the risk to water quality has been explicitly identified and addressed in forest management. Water quality is important for forest ecosystem health and water supply for human use.</p> | FMP KPI 10 - Stream condition & groundwater level within fully forested catchments |
| Criterion 5 Maintenance of forest contribution to global carbon cycles | | |
| 5.1.a | <p>Contribution of forest ecosystems and forest industries to the global greenhouse gas balance</p> <p>This indicator assesses the contribution of Australian forests to the global carbon cycle. Forest management can have a significant positive or negative impact on the global carbon cycle.</p> | FMP KPI 14 - Carbon storage in forests on FMP area National data (State of the Forests reporting) ABARES and ABS |

| National indicators | | WA indicators and/or reporting mechanisms |
|---|--|---|
| Criterion 6 Maintenance and enhancement of long term multiple socio-economic benefits to meet the needs of societies | | |
| 6.1.a | <p>Value and volume of wood and wood products</p> <p>This indicator measures the size and economic contribution of the wood products sector to Australia's economy. Analysis of trends in the value and volume of wood and wood products enables socio-economic benefits derived from the forest industry to be assessed.</p> | <p>FPC Key effectiveness indicator 8 – Total payments to Government</p> <p>FPC Key effectiveness indicator 9 – Net profit before interest and tax</p> <p>FPC Key efficiency indicator 2 – Plantation log production consistent with demand from industry</p> <p>National data (State of the Forests reporting) ABARES and ABS</p> |
| 6.1.b | <p>Values, quantities and use of non-wood forest products</p> <p>This indicator measures the quantities, values and usage of non-wood products. It enables socio-economic benefits to be monitored by ascertaining trends in quantities, values and usage of non-wood products.</p> | <p>Partial state level reporting may be possible using licence / permit returns and industry statistics - wildflowers, seed, honey</p> <p>National data (State of the Forests reporting) ABARES and ABS</p> |
| 6.1.c | <p>Value of forest based services</p> <p>This indicator measures forest-based services such as ecosystem services, carbon credits, salinity mitigation and ecotourism. Forest-based services provide economic values and contribute to the sustainability of forests by providing significant social and environmental benefits.</p> | <p>FMP KPI 22 - Visitor numbers to FMP area and level of visitor satisfaction</p> <p>FMP KPI 10 & 11 - Stream flow and condition</p> <p>FMP KPI 14 - Carbon storage in forests on FMP area</p> |
| 6.1.d | <p>Production and consumption and import/export of wood, wood products and non-wood products</p> <p>This indicator measures the consumption of forest-based products in Australia. Consumption trends over time provide a measure of the ability of Australian forest and timber industries, through both domestic production and importation, to meet Australian society's demand for forest-based products and of the industries contribution to the economy.</p> | <p>National data ABARES and ABS (State of the Forests Reporting)</p> |
| 6.1.e | <p>Degree of recycling of forest products</p> <p>This indicator measures the extent to which recycling or reuse of forest products occurs. As global demand for forest products increase, there is a growing need to meet societal demands for recycling of forest products.</p> | <p>National data identifying WA statistics (State of the Forests Reporting) FAO, ABARES, ABS</p> |
| 6.2.a | <p>Investment and expenditure in forest management</p> <p>This indicator quantifies investment and expenditure in developing, maintaining, and obtaining goods and services from forests. It provides an indication of the long term and short term commitment to forest management, further processing and other forest uses.</p> | <p>Parks and Wildlife Annual reporting efficiency indicators include expenditure for Forest Services (4 and 5 - FMP) and conserving habitats service (Whole of State).</p> <p>FPC Annual report includes expenditure on forest management</p> <p>National industry data (State of the Forests Reporting) ABS</p> |

| National indicators | | WA indicators and/or reporting mechanisms |
|---------------------|--|---|
| 6.2.b | <p>Investment in research, development, extension and use of new and improved technologies</p> <p>This indicator monitors the investment in, and adoption of, new or improved technologies in forest management and in forest-based industries. It also quantifies the level of research and development. Significant investment in research, development and new technologies result in continual improvements to forest management practices.</p> | FMP KPI 21 (Performance measure 2) - Investment in new processing technologies |
| 6.3.a | <p>Area of forest available for public recreation/ tourism</p> <p>This indicator measures the area of forest available for use by the community for recreation and tourism purposes. This provides an indication of the emphasis placed by society on the management of forest for recreation and tourism.</p> | FMP KPI 22 supplemented by area statistics and tenure data Parks and Wildlife Annual report - recreation and tourism |
| 6.3.b | <p>Range and use of recreation/tourism activities available</p> <p>This indicator assesses the range and number of recreation and tourism facilities provided in forests, their level of use and their contribution to the broader tourism sector. Appropriate and well managed facilities help to optimise visitor satisfaction as well as minimising environmental impacts associated with recreation and tourism.</p> | FMP KPI 22 (Performance measure 2) - Type and number of recreation and tourism facilities available in FMP area |
| 6.4.a | <p>Area of forest to which Indigenous people have use and rights that protect their special values and are recognised through formal and informal management regimes</p> <p>This indicator monitors the degree to which land is placed under appropriate tenure classifications or management regimes to protect Indigenous people's values in forests. An acceptable level of accountability for the protection of Indigenous peoples' cultural, religious, social and spiritual needs and values is an essential part of forest management.</p> | FMP KPI 20 (Performance measures) – Joint management arrangements, local area arrangements and protocols for Aboriginal customary activities and consultation with appropriate and representative Noongar groups for management plans |
| 6.4.b | <p>Registered places of non-Indigenous cultural value in forests that are formally managed to protect those values</p> <p>This indicator measures and monitors management regimes for non-Indigenous cultural values, such as historical, research, education, aesthetic, and social heritage values. Maintaining these values is integral to the protection of non-Indigenous peoples values associated with forests.</p> | Reports available from State and National registers of non-indigenous values |
| 6.4.c | <p>The extent to which Indigenous values are protected, maintained and enhanced through Indigenous participation in forest management</p> <p>This indicator measures the extent to which Indigenous people participate in forest management. Active participation in forest management reflects the relationship between people and the land, and the integration of Indigenous peoples values with forest management practice, policy and decision making.</p> | FMP KPI 20 (Performance measures) – Joint management arrangements, local area arrangements and protocols for Aboriginal customary activities and consultation with appropriate and representative Noongar groups for management plans |

| National indicators | | WA indicators and/or reporting mechanisms |
|--|--|--|
| 6.4.d | <p>The importance of forests to people</p> <p>This indicator measures the range of attitudinal values that communities and individuals place on their forests. The importance of forests to society is exemplified through the value that people place on biodiversity, clean air and water, social equity or simply the knowledge that Australia's forests exist.</p> | <p>FMP KPI 22 (Performance measure 3) – Level of visitor satisfaction expressed with their experience</p> <p>Parks and Wildlife Annual Report - Key effectiveness indicator for Service 1, Community enjoyment of the State's national parks, marine parks, State forest and other reserves</p> |
| 6.5.a | <p>Direct and indirect employment in the forest sector</p> <p>This indicator measures the level of direct and indirect employment in the forest sector. Employment is an important measure of the contribution of forests to viable communities and the national economy.</p> | <p>National Statistics (State of the Forests Reporting) ABS</p> |
| 6.5.b | <p>Wage rates and injury rates within the forest sector</p> <p>This indicator measures the level of wage and injury rates in the forest sector. A sustainable industry will ensure high levels of workforce health with welfare and wage rates comparable with national averages for other occupations.</p> | <p>National Statistics (State of the Forests Reporting) ABS and Safe Work Australia²⁰⁸</p> |
| 6.5.c | <p>Resilience of forest dependent communities to changing social and economic conditions</p> <p>This indicator provides a measure of the extent to which forest dependent communities are able to successfully respond and adapt to change. Resilient forest dependent communities will adapt to changing social and economic conditions, ensuring they remain viable into the future.</p> | <p>National and State statistics (State of the Forests reporting) ABS</p> |
| 6.5.d | <p>Resilience of forest dependent Indigenous communities to changing social and economic conditions</p> <p>This indicator provides a measure of the extent to which forest dependent Indigenous communities are able to respond and adapt to change successfully. Resilient forest dependent Indigenous communities will adapt to changing social and economic conditions, ensuring they prosper into the future.</p> | <p>FMP KPI 20 (Performance measures) – Joint management arrangements, local area arrangements, protocols for Aboriginal customary activities & consultation with appropriate and representative Noongar groups for management plans.</p> <p>Parks and Wildlife annual reporting on Aboriginal Employment Strategy and Mentored Aboriginal Training and Employment Scheme (MATES)</p> |
| <p>Criterion 7 Legal, institutional and economic framework for forest conservation and sustainable management</p> | | |
| 7.1.a | <p>Extent to which the legal framework supports the conservation and sustainable management of forests</p> <p>This indicator outlines the support that the legal system gives to the sustainable management of forests. A legal system that ensures transparency and public participation in policy and decision-making processes supports the continuous improvements in sustainable forest management.</p> | <p>Amendments to legislation and/or work to support proposed amendments</p> <p>Case study - OAG report into the sale of forest products²⁰⁹</p> <p>Parks and Wildlife Annual reporting on compliance</p> <p>Conservation Commission FMP performance reports²¹⁰</p> |

²⁰⁸ Safe work Australia (n.d.). safeworkaustralia.gov.au/sites/swa/statistics/industry/agriculture-forestry-fishing/pages/agriculture-forestry-fishing

²⁰⁹ Auditor General Western Australia (2013). audit.wa.gov.au/wp-content/uploads/2013/06/report2013_10.pdf

²¹⁰ Conservation Commission of Western Australia (2004). conservation.wa.gov.au/management-planning/management-plans/forest-management-plan-2004-2013.aspx

| National indicators | | WA indicators and/or reporting mechanisms |
|---------------------|---|--|
| 7.1.b | <p>Extent to which the institutional framework supports the conservation and sustainable management of forests</p> <p>This indicator examines the institutional frameworks that support sustainable forest management. Institutional frameworks provide mechanisms for engagement of the wider community in the process of continuous improvement and sustainable forest management.</p> | FMP KPI 24 - Extent to which institutional framework supports conservation and sustainable management of forests |
| 7.1.c | <p>Extent to which the economic framework supports the conservation and sustainable management of forests</p> <p>This indicator examines the extent to which government policies support the conservation and sustainable management of forests. Government policies on investment, taxation and trade influence the level of investment in forest conservation, forest establishment and timber processing.</p> | <p>FPC Key effectiveness indicator 8 – Total payments to Government</p> <p>FPC Key effectiveness indicator 9 – Net profit before interest and tax</p> <p>FPC Key efficiency indicator 4 – Stumpage revenue</p> |
| 7.1.d | <p>Capacity to measure and monitor changes in the conservation and sustainable management of forests</p> <p>This indicator examines the capacity of forest owners and agencies to measure and monitor changes in the forest and the impact of forest activities. A comprehensive measurement and monitoring programme provides the basis for forest planning to support sustainable management.</p> | Synthesis of collective suite of FMP KPI reporting metrics |
| 7.1.e | <p>Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services</p> <p>This indicator reports on the scientific understanding of Australian forest ecosystem characteristics and functions needed to underpin sustainable forest management. Research, inventory and the development of assessment methodologies provide the basis for sustainable forest management.</p> | FMP KPI 24 (Performance measure 2) – Improved scientific understanding of ecosystem characteristics and functions |

Appendix 12 | Adoption of research into sustainable forest management practices

Parks and Wildlife adopts a scientific, evidence-based approach to sustainable forest management, and implements the FMPs within an adaptive management framework. A wide range of research projects are undertaken to refine knowledge and support the delivery of the Parks and Wildlife strategic plan, divisional strategic plans and a range of operational plans. Research findings are continually refined and tested as they are incorporated into operational plans and prescriptions as new knowledge becomes available.

The process to determine future research priorities and to ensure that research outputs are adopted into management practices is outlined in Parks and Wildlife's *Science Policy Guideline No. 1*²¹¹. This guideline prescribes a planning process which is undertaken prior to starting science projects to:

- ensure that any proposed project addresses a high priority for Parks and Wildlife operations
- ensure that projects address the study objectives and produce results that can be appropriately analysed
- establish accountability, with research conducted within a given timeframe and budget
- enable evaluation of the project design and effectiveness in addressing the aims
- ensure that Parks and Wildlife allocates financial and human resources on well-designed, priority projects.

The priorities for research and monitoring programs to inform forest and conservation outcomes are regularly reviewed and incorporate input from such independent external reviews as the silviculture guideline review, the independent panel on sustained yield and the EPA reports on the FMPs. Parks and Wildlife publishes annual Science Division research activity reports which include a summary of the management implications from each project²¹². Information sheets are also prepared on specific topics or emerging issues and a list of research publications is published annually²¹³.

Science Policy Guideline 1, detailing the principles of the planning process, is complemented by *Science Policy Guideline 2* which focuses on implementing research results. Some contemporary examples of the range of projects underway or concluded during Period 3 are provided below to outline how Parks and Wildlife has continued to integrate research outputs directly into forest management practices.

Biological survey examines the influence of timber harvesting on biodiversity and informs continual improvement in CAR reservation

FORESTCHECK is a long-term, landscape-scale monitoring project which began in 2001 to provide information for forest managers about changes and trends in biodiversity associated with timber harvesting and silvicultural treatments in jarrah forest (McCaw et al. 2011). The project was designed to support state, national and international reporting obligations to ensure that forests are managed in an ecologically sustainable manner.

The *FORESTCHECK* program samples a wide range of organisms at multiple sites across the jarrah forest and has highlighted the extraordinary biodiversity that exists in the jarrah forest ecosystems. It has also identified an abundance of relatively unknown species of invertebrates, fungi and lichens, many of which have been collected and recorded for the first time. In 2011, a special issue of the Australian Forestry journal²¹⁴ was devoted to the findings from *FORESTCHECK* monitoring from the first five years of data collection. A key

²¹¹ Department of Environment and Conservation (n.d.). dpaw.wa.gov.au/about-us/36-policies-and-legislation

²¹² Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research/publications-resources/105-plans-and-reports#ScienceRegions

²¹³ Department of Parks and Wildlife (n.d.). dpaw.wa.gov.au/about-us/science-and-research/publications-resources/111-science-division-information-sheets

²¹⁴ Australian Forestry volume 74, Issue 4. December 2011.

finding is that timber harvesting in the jarrah forest does not appear to have a major impact on the number of species present (Abbott and Williams 2011). While harvested forest areas can have a different composition of species to non-harvested forest for a period, the changes in species composition and abundance vary over time as a response to periodic disturbance. Natural disturbances such as storms, fire and drought also contribute to biological diversity at the local, regional and whole of forest scales.

In addition to informing forest managers on the effects of timber harvesting on biodiversity, *FORESTCHECK* has shown that the pattern of occurrence of a broad range of biodiversity is strongly related to the vegetation systems and forest ecosystems mapped for the WA RFA region. This important finding supports the use of these vegetation categories as the original basis in the WA RFA for the design of the CAR reserve system.

FORESTCHECK has also provided a framework for monitoring the effect on flora and fauna of such unplanned events as the high intensity bushfires (e.g. the Lower Hotham bushfire in 2015). The pre-fire datasets have provided a baseline against which the subsequent changes and recovery can be interpreted.

Additional biological surveys of the flora and vegetation complexes within the Whicher Scarp (near Busselton) identified the area as containing a diverse and rich flora including many rare species, endemic species, species at the end of their distribution range, restricted and rare wetland communities, and a diverse suite of woodland communities. The Whicher Scarp was subsequently defined as a separate forest ecosystem, and additional formal reserves were proposed in the FMP 2014–2023.

Synthesis of new concepts and knowledge 2002 to 2011 informs update to silvicultural guidelines

An independent expert review of silvicultural practices and their impacts on biodiversity was undertaken in 2010–11²¹⁵. This review was informed by a synthesis of the results from *FORESTCHECK*, other research monitoring, audits and adaptive management trials. The review informed management strategies to be adopted in the FMP 2014–2023 and the revision of supporting technical guidance documents such as silviculture, soil and water management procedures. The following points summarise key findings of the review:

- Knowledge and understanding of the effects of timber harvesting and silviculture on the biodiversity of WA's south-west forests has advanced considerably, supported by a significant output of scientific publications
- Integrated biodiversity monitoring using the *FORESTCHECK* protocol was implemented at 48 sites in the jarrah forest. Overall, few significant impacts were evident, and most species groups were resilient to the disturbances
- Retained legacy elements including habitat trees make an important contribution to conservation at the operational scale particularly for lichens, birds and arboreal mammals, including bats. Coarse woody debris is important as habitat for macrofungi, invertebrates, cryptogams and some epiphytic plants. Large logs in moderate to advanced stages of decay are likely to be particularly important and should be retained to the greatest extent possible during silvicultural operations
- Heterogeneity and connectivity provided by informal reserves, fauna habitat zones and temporary exclusion areas is important for conservation at the landscape scale, and assists in ameliorating the impact and persistence of disturbance effects arising from harvesting and silviculture. Fox control has a substantially greater influence on terrestrial vertebrate species abundance, and to some extent species richness, than does forest structure. This finding demonstrates that maintaining areas of mature forest in the landscape is, on its own, insufficient to ensure conservation of terrestrial vertebrates
- Tree decline syndromes and major outbreaks of insect pests that reduce forest canopy density at the landscape scale warrant consideration in planning for silvicultural operations because they may result in retained areas of mature forest being temporarily less suitable for habitat and foraging by some birds and animals

²¹⁵ Burrows et al. (2011).

- Current measures appear effective in protecting water quality and invertebrate biodiversity in forest streams
- Silvicultural practices are undertaken at the operational scale, but the effects on biodiversity are also influenced by a range of factors relevant at the whole of forest scale. Important issues that have emerged during the past decade include a drying climate, feral cats as predators, and widespread and unexplained decline of some mammals across a range of land tenures including conservation reserves and State forest.

Based on the review, the silviculture guidelines and procedures for jarrah, karri and wandoo forests were modified to enhance biodiversity and other outcomes. Refinements included:

- increased retention of mature marri trees in a selection of forest ecosystems
- refinement of the desirable characteristics of retained habitat trees and hollow logs to enhance nesting, roosting and foraging requirements for a range of species
- variations to standard treemarking requirements based on information generated at the coupe level from the Fauna Distribution Information System
- retention of habitat trees in groups, and including standing dead trees and mature secondary storey species
- additional habitat tree retention in karri forest areas harvested prior to the 1950s
- excluding from timber harvesting areas exhibiting symptoms of very high impact from *Phytophthora* dieback
- reductions in the allowable level of soil disturbance during harvesting operations to facilitate regeneration.

These refinements to silvicultural practices were incorporated into the sustained yield modelling undertaken for the FMP 2014–2023, which was reviewed by a panel of independent experts and incorporated future climate projections²¹⁶. These projections of climate change to 2070 were applied when modelling changes in forest productive capacity.

Long-term wetland monitoring informs conservation actions

Wetlands in the south-west are under increasing pressure from urban, agricultural and other land uses, exacerbated by trends of declining rainfall. Changes to hydrology and water quality can lead to changes in aquatic biodiversity. Data from the South West Wetlands Monitoring Program²¹⁷ has been used by managers in the broader south-west since 1977. Currently, 104 wetlands are monitored (150 have been monitored in total), with 55 monitored for 30 or more years. Almost all of these areas are in formal reserves, including most Ramsar sites. Within the WA RFA region, the program monitors the high value, fresh-brackish, near-coastal wetlands to quantify the effects of declining rainfall and increased development of water resources. Examples of adaptive management based on the monitoring program include:

- In Nature Reserve 12632 (near Harvey), summer exposure of the peat lake bed in recent years has led to terrestrial native vegetation becoming established on the previously ‘open water’ lake. Management actions seek to ensure the lake retains high conservation value as an ephemeral wetland for water birds
- In 2014, record-high salinities recorded at Lake Davies in the Leeuwin–Naturaliste National Park initiated investigations to determine the source of the salinity and assess potential remediation measures
- In the Muir-Byenup Ramsar wetlands (east of Manjimup), the Tordit-Gurrup Lagoon recently acidified following an intense period of drying. The multi-decadal (40 years) record of water quality enabled scientists to understand the likely cause of the acidification, and investigations of hydrogeochemistry of the peat wetlands has contributed to assessments of the risk of further

²¹⁶ CSIRO, Australian Bureau of Meteorology (2007).

²¹⁷ Department of Parks and Wildlife (2014f) dpaw.wa.gov.au/management/wetlands/mapping-and-monitoring/223-surveying-monitoring-wetlands?showall=&limitstart=

acidification events and remediation actions

- Information is also being used to assist with the recovery of threatened species. Breeding habitat requirements for the Australasian bittern (*Botaurus poiciloptilus*) are being determined from water depth and hydro-period data, enabling settings of hydrological targets to ensure breeding habitat is maintained at critical wetlands.

Fire research improves ecosystem health outcomes through continual improvement in prescribed fire and bushfire management practices

Parks and Wildlife has maintained a strong bushfire research capability over many decades, with the program having a strong emphasis on the operational implementation of findings.

In 2002, a book summarising the contemporary knowledge on fire history, the impacts of fire on ecosystems and the environment, and current approaches to managing fire in the south-west was published²¹⁸. The book reviewed the development of the scientific understanding of fire behaviour and use in the south-west²¹⁹, while more recent syntheses of the practical application of applied fire research for forest management are available²²⁰.

Parks and Wildlife collaborates with universities, the CSIRO and Bureau of Meteorology on studies relevant to the management of forest fire. These include:

- investigations of the relationship between the extent of prescribed fire and bushfire at the regional scale²²¹
- quantifying the relative contribution of smoke from prescribed burning and bushfires on air quality in rural areas²²²
- application of advanced atmospheric modelling approaches to better predict the behaviour of prescribed burns and bushfires²²³.

Project Vesta

This collaborative research project was undertaken over a number of years from 1997 and investigated the behaviour and spread of high intensity bushfires in dry eucalypt forests with different fuel ages and understorey vegetation structures. The project was designed to quantify age-related changes in fuel attributes and fire behaviour in dry eucalypt forests typical of southern Australia, and it addressed recognised limitations in previous fire behaviour prediction models.

The four main scientific aims of Project Vesta were to:

- quantify the changes in the behaviour of fire in dry eucalypt forest as fuel develops with age (i.e. time since fire)
- characterise wind speed profiles in forest with different over storey and understorey vegetation structure in relation to fire behaviour
- develop new algorithms describing the relationship between fire spread and wind speed, and fire spread and wind characteristics including load, structure and height
- develop a National Fire Behaviour Prediction System for dry eucalypt forest.

The results were used to develop new fire behaviour models that predict the rate of spread and difficulty of suppression according to wind speed, fuel moisture content and variables that reflect the abundance and condition of leaf litter, understorey fuels and bark. The improved understanding of relationships between fuel

²¹⁸ Abbott, I. Burrows, N. (2003).

²¹⁹ McCaw et al. (2003).

²²⁰ Burrows, N. (2008). McCaw, L. (2013) and Burrows, N. McCaw, L. (2013).

²²¹ Boer et al. (2009).

²²² Reisen et al. (2011).

²²³ Peace et al. (2012)

age and potential fire behaviour provided a better basis to assess the benefits of various fuel management alternatives that may be employed to reduce difficulty of fire suppression and protect assets from damage during high intensity bushfires. Operational use has shown these models improve predictions of fire behaviour compared to previous models based solely on the loading of fine surface fuels which tended to under-estimate potential fire behaviour in forests that have been unburnt for some time. The models have been comprehensively incorporated into a range of standard operating procedures for fire management in Parks and Wildlife and other agencies.

Fire behaviour prediction for coastal shrublands

The coastal shrubland ecosystems (a predominant vegetation type in coastal areas between Geraldton and Esperance) are a focus for current fire behaviour research. The lack of a suitable fire behaviour prediction guide has been recognised as a significant gap to effective decision-making on the use of prescribed fire in these ecosystems. Pilot studies have described fuel characteristics across a range of sites to improve fuel sampling techniques, while data from routine and experimental burns will be gathered to improve understanding of the conditions and shrubland types in which fire is likely to be sustained and spread.

Ecologically appropriate fire management

Developing fire regimes that maintain the diversity and ecological function of the south-west tall forest ecosystems requires knowledge of how fire impacts all the elements of the forest ecosystem. Conducting prescribed burning adaptive management trials²²⁴ and following the recovery of species following wildfire²²⁵ are two contrasting approaches that are being used to inform future fire management.

Salvage and rehabilitation of stands burnt by large bushfires

In March 2001, a high intensity bushfire in the Nuyts Wilderness (south of Pemberton) significantly simplified the forest structure and reduced habitat diversity. The intense fire also depleted soil seed banks, hindering forest recovery. Following the bushfire, the composition of the invertebrate communities was compared with those from long unburnt forests and from the fine-grain fire mosaic created by the Walpole burning trial. The research demonstrated that the tall, mixed tingle/karri forests contain a high proportion of short-range endemic invertebrate communities, while monitoring of the recovery of overstorey and mid-storey trees was used to inform rates of tree mortality, crown deterioration, and trees recovery²²⁶. This research was used to inform decision making about salvage and rehabilitation of stands burnt by large bushfires in the southern forests in February 2012 (Babbington) and, although outside the reporting period, February 2015 (O'Sullivan).

Management of fire interval regimes for biodiversity conservation

Collaborative research with the Bushfire CRC has been conducted to evaluate the resilience of plants, vertebrates, invertebrates and fungi to different fire interval sequences over the past 35 years in the Warren bioregion of the south-west forests. This research informs the management of fire interval regimes for biodiversity conservation.

Accurate fire history information was used to determine the impact of different fire interval sequences over the past 35 years on the composition and abundance of vascular plants, ground-dwelling invertebrates, vertebrates and macrofungi in the forests and shrublands of the bioregion. This was achieved by using a space for time methodology that included extensive digitisation of hand drawn maps from historical fires. The research found that the forests and shrublands investigated were more resilient to the effects of burning than may have been previously expected²²⁷.

Species composition and the abundance of ants, beetles and vascular plants was surveyed at all the sites, while forest sites were also surveyed for macrofungi and vertebrate fauna. Surveys for most groups were conducted

²²⁴ e.g. Burrows et al. (2010), Burrows, N. Middleton, T. (2016).

²²⁵ Burrows, N. (2013), McCaw, L. Middleton, T. (2015).

²²⁶ McCaw, L. Middleton, T. (2015).

²²⁷ Wittkuhn et al. (2011)

over two years, and often twice in a single year to account for seasonal variation in species composition. The study found that none of the groups displayed significant differences in species composition as a result of contrasting fire interval sequences in either forest or shrubland. The data showed that varying fire intervals had no persistent effect on the richness and composition of biota associated with open forests and shrublands of the Warren bioregion, and demonstrated that these ecosystems are highly resilient to fire.

The study suggested that the periodic occurrence of fire in these ecosystems from pre-human to more recent times is likely to have pre-conditioned the biota to persist across a range of fire intervals varying from long (at least 30 years) to short (less than five years) fire intervals. This suggests that the variability that has occurred at the study sites makes an important contribution to observed resilience, whereas repeated short intervals over the longer term would likely lead to substantial ecological change.

Forest hydrology research informs management practices for the protection of water values

A forest hydrological research program within the WA RFA region has been operating for more than 40 years, supported by government agencies, research institutions and private companies. Long-term datasets on the response of streamflow, stream salinity and groundwater to timber harvesting have informed silvicultural specifications, stream zone dimensions, bauxite mining and rehabilitation practices.

Historically, the main risk to water quality from timber harvesting in some areas was the potential for groundwater to rise, dissolving and transporting salt stored in the unsaturated zone of the soil profile. The two primary controls over the risk of causing salinity in forested areas have been a phased harvesting requirement for ‘salt sensitive’ areas and a ‘high salt risk’ requirement (FMP 1994–2003 ministerial conditions). However, a significant decline in annual rainfall and associated decline in groundwater levels during recent decades has ameliorated the risk of salinisation. In the FMP 2014–2023 the Swan and South West regions and parts of the Warren Region were reclassified as low salt sensitivity, and other parts of the Warren Region were classified as moderate salt sensitivity. The phased harvesting requirement is now only required for the moderate salt sensitivity part of the Warren Region, as groundwater levels have not fallen to the same extent in this area.

Research has shown that declining rainfall is resulting in a disconnection between groundwater and surface water systems in some catchments of the jarrah forest²²⁸. In these catchments, the proportion of rainfall that becomes run-off declines significantly. However, the research also suggests that vegetation thinning may be an appropriate management action to reduce the decline or increase the amount of streamflow within a forested catchment²²⁹. The knowledge gained from this research informed the new provisions in the FMP 2014–23 for silvicultural treatments to address threats to ecosystem health and vitality (referred to as ‘silviculture for ecosystem health’). An example of this approach is to increase the water available to identified areas, such as ecosystems that depend on surface water. The FMP 2014–2023 also provides for ‘silviculture for water production’, which involves silvicultural treatment to maintain or enhance water supply within a catchment, with associated benefits for ecosystem health and vitality.

Improved predator control assists native mammal recovery

Predation by introduced pest animals is a key barrier to the recovery of native mammal populations. An initial recovery of threatened mammal populations following fox (*Vulpes vulpes*) control through broadscale baiting under the *Western Shield* program was not sustained, and mammal populations began to decline. After confirming that the fox-baits were still effective, research investigated whether fox baiting had resulted in ‘mesopredator release’, whereby the control of the dominant, larger predator (foxes) had led to an increase in the number of smaller predators (such as feral cats, *Felis catus*). Comparing cat abundance at sites that had

²²⁸ Kinal, J. Stoneman, GL (2012).

²²⁹ Kinal, J. Stoneman, GL (2011).

been baited for foxes with those that were not baited, it was confirmed that the fox control undertaken in the northern jarrah forest over the past 15 years had led to an increase in the numbers of feral cats. The severe decline in woylie (*Bettongia penicillata ogilbyi*) numbers after their initial recovery following earlier fox-baiting programs has also been attributed to predation by increased numbers of feral cats. In order to control feral cats, Parks and Wildlife developed and trialled the *Eradicat*® feral cat bait. *Eradicat*® has now been registered for operational use in WA, and broad scale deployment of both cat and fox baits is occurring at selected sites through the *Western Shield* program, with ongoing monitoring of the impacts on fox and cat populations and recovery of mammal populations.

Social and economic

Research on improved methods for growing forest stands and log conversion can provide direct economic benefits to the forest products sector and the communities they support. During Period 3, research has been undertaken by the FPC to evaluate the extent of end-splitting in karri sawlogs and likely impact on timber yields. This work evaluated correlations among tree, stand and site attributes with the amount of log degrade. The research has informed refinements to silvicultural prescriptions and changes to harvesting techniques to reduce the frequency and severity of end splitting in karri sawlogs.

Assessment of the influence of silvicultural prescriptions, site factors (soil, nutrients) and climate on timber quality has been the subject of a national study called the *e-Cambium* project²³⁰. The effect of management and environmental changes on timber quality can now be modelled and assessed against industry requirements for quality and the sawn timber produced from the resource. Information generated from the project will be linked to current and potential markets for sawn timber.

²³⁰ Forest & Wood Products Australia (n.d., 2013). fwpa.com.au/forwood-newsletters/898-e-cambium-wood-quality-modelling-project.html and [FWPA_Research_Report_PNC%20196-1011_Final_Dec13.pdf](#)

References

- ABARES (2016). *Australian plantation statistics 2016*. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, August
- Abbott, I. and Burrows, N. (2003). *Fire in ecosystems of southwest Western Australia: impacts and management*. Backhuys, Leiden. 466p.
- Abbott, I. Williams, M. (2011) *Silvicultural impacts in jarrah forest of Western Australia: synthesis, evaluation, and policy implications of the FORESTCHECK monitoring project of 2001–06*. Australian Forestry 74: 350- 360
- Acuna, M. Ghaffariyan, M. (2011). *Fasttruck - A Truck Scheduling System to Improve the Transport Efficiency of In-Field Chipping Operations*. CRC Forestry. 34th Council on Forest Engineering, June 12-15 2011, Quebec City.
- Alcoa (2015). *Completion Criteria and Overview of Area Certification Process. Alcoa's Bauxite Mine Rehabilitation Program*. 2015 Revision, July.
- ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee (1997). *Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia*. Commonwealth of Australia, Canberra.
- Auditor General Western Australia (2013). *Western Australian Auditor General's Report: Supply and Sale of Western Australia's Native Forest Products*. Report 10-June 2013
- Australian Forest Growers. (n.d.). *Homepage* Accessed 17 August 2016. www.afg.asn.au/
- Australian Forestry (2011). *FORESTCHECK: Special Edition*. 74(4), December 2011.
- Australian Forestry Standard Limited (2007). *Forest management—Economic, social, environmental and cultural criteria and requirements for wood production (known as the Australian Forestry Standard)*. Australian Standard, AS 4708—2007. Canberra.
- Boer, M. Sadler, R. Wittkuhn, R, McCaw L, Grierson P. (2009). *Long term impacts of prescribed burning on regional extent and incidence of wildfires: evidence from 50 years of active fire management in SW Australian forests*. Forest Ecology and Management 259: 132-142.
- Bradshaw, J. (2005) *Managing private native forests and woodlands in the south-west of Western Australia: combining wood production and conservation*. Department of Conservation and Land Management, Perth Australia.
- Burrows, N. (2008) *Linking fire ecology and fire management in south-west Australian forest landscapes*. Forest Ecology and Management 255: 2394-2406.
- Burrows, N. Dell, B. Neyland, M. Ruprecht, J. (2011). *Review of silviculture in forests of south-west Western Australia*. Department of Environment and Conservation, Western Australia.
- Burrows, N. McCaw, WL. (2013). *Prescribed burning in southwestern Australian forests*. *Frontiers in Ecology and the Environment* 11: 25-34.
- Burrows, N. Middleton, T. (2016). *Mechanisms enabling a fire sensitive plant to survive frequent fires in south-west Australian eucalypt forests*. *Fire Ecology* 12: 26–40
- Burrows, N. Ward, B. Robinson, A. (2010). *Fire regimes and tree growth in low rainfall jarrah forest of south-west Australia*. *Environmental Management* 45: 1332- 1343.
- Bushfire CRC (2014). *Legacy site*. Accessed 19 August 2016 www.bushfirecrc.com/
- Carlsen, J. Wood, D. (2004) *Assessment of the economic value of recreation and tourism in Western Australia's national parks, marine parks and forests*. CRC for Sustainable Tourism. 29p.
- Carter, M. (2012). *FMP (2014-2023) – supplementary reading: FIRE MANAGEMENT PLANNING*. Fire Management Services, Department of Environment and Conservation, February.

COAG Standing Council on Environment and Water (2012). *Australia's Native Vegetation Framework*. Australian Government, Department of Sustainability, Environment, Water, Population and Communities, Canberra.

Commonwealth of Australia (2013). *Notice of Approval of Plantation Forestry Codes of Practice in New South Wales, Victoria, Western Australia, Tasmania, the Australian Capital Territory and the Northern Territory*. Export Control Act 1982. Export Control (Unprocessed Wood Regulations). 2 May 2013.

Commonwealth of Australia (1992, 1995). *National Forest Policy Statement: A new focus for Australia's forests*. Canberra, Australia.

Conservation Commission of Western Australia (2015). *Mining in Lands Vested in the Conservation Commission of Western Australia*. Position Statement No. 3. May 2015.

Conservation Commission of Western Australia (2015a). *The preparation of management plans for lands vested in the Conservation Commission under the Conservation and Land Management Act 1984*. Position Statement No. 6. Government of Western Australia, Perth.

Conservation Commission of Western Australia (2013). *Forest Management Plan 2014–2023*. Government of Western Australia.

Conservation Commission of Western Australia (2013a). *Proposed Forest Management Plan 2014–2023*. Conservation Commission of Western Australia, Perth

Conservation Commission of Western Australia (2012). *Draft Forest Management Plan 2014–2023*. Conservation Commission of Western Australia, Perth

Conservation Commission of Western Australia (2012a). *Forest Management Plan 2004–2013 End-of-term audit of performance report*. Government of Western Australia, Perth.

Conservation Commission of Western Australia (2008). *Forest Management Plan 2004–2013 Mid-term audit of performance report*. 24 December. Government of Western Australia, Perth.

Conservation Commission of Western Australia (2005). *Assessment criteria and process for the Conservation Commission review of old-growth amendments*. Government of Western Australia, Perth

Conservation Commission of Western Australia (2004). *Forest Management Plan 2004–2013*. Government of Western Australia, Perth.

Conservation Commission Western Australia (n.d.). *Performance Assessments*. Accessed 19 August 2016. conservation.wa.gov.au/performance-assessments/performance-assessments.aspx

Croton, J. Dalton, G. Green, K. Mauger, G. Dalton, J. (2014). *Northern Jarrah Forest Water-Balance Study to Inform the Review of Silviculture Guidelines*. Department of Parks and Wildlife, Perth.

CSIRO, Australian Bureau of Meteorology (2007). *Climate change in Australia: observed changes and projections*. Australian Climate Change Science Programme.

Curtin University (2011). *Report of an independent assessor on the recommendations of the Panel of Experts to recognize the Whicher Scarp as a Forest Ecosystem*. December 2011.

Department of Aboriginal Affairs (n.d.). *Heritage*. Government of Western Australia. Accessed 17/8/2016 www.daa.wa.gov.au/heritage/

Department of Agriculture and Food (2014). *Western Australian State Biosecurity Strategy*. Department of Agriculture and Food, Department of Parks and Wildlife, Department of Fisheries, Forest Products Commission. Government of Western Australia. Perth, Western Australia

Department of Agriculture and Food (n.d.). *Myrtle Rust in Western Australia*. Accessed 19 August 2016. www.agric.wa.gov.au/plant-biosecurity/myrtle-rust-western-australia

Department of Agriculture and Water Resources (2016). *Forests Australia*. Last reviewed 12 August 2016. Accessed 23 August 2016. agriculture.gov.au/abares/forestsaustralia/

Department of Agriculture and Water Resources (2016). *Publications*. ABARES. Accessed 19 August 2016 agriculture.gov.au/abares/publications/pubs?url=http://143.188.17.20/anrdl/DAFFService/pubs.php?seriesName=NatPlantInv%26sort=date%26sortOrder=desc%26showIndex=true%26outputType=list%26indexLetter=_

Department of Agriculture and Water Resources (n.d.). *Exports of unprocessed wood (wood export licensing)*. Australian Government, Canberra. Accessed 19 August 2016. agriculture.gov.au/forestry/industries/export#when-do-you-not-need-an-export-licence

Department of Conservation and Land Management (1999). *Code of Practice for Timber Harvesting in Western Australia*. Department of Conservation and Land Management, Perth

Department of Conservation and Land Management (1999a). *Manual of Management Guidelines for Timber Harvesting in Western Australia*. Department of Conservation and Land Management. Como, Western Australia.

Department of Defence (n.d.). *Defence Environmental Management*. Accessed 23 August 2016. <http://defence.gov.au/environment/>

Department of Environment and Conservation (2013). *Management of Commercial Harvesting of Protected Flora in Western Australia 1 June 2013 - 30 June 2018*. June 2013. Department of Environment and Conservation, Perth.

Department of Environment and Conservation (2013a). *Quarterly performance report: Native Vegetation Conservation Program 1 January to 31 March 2013*. April 2013. Department of Environment and Conservation, Perth.

Department of Environment and Conservation (2012). *Fire Management Planning, supplementary reading for the Forest Management Plan 2014–2023*. Fire Management Services Branch. Government of Western Australia, Perth

Department of Environment and Conservation (2012a). *Joint Management*. Information sheet. Government of Western Australia, Department of Environment and Conservation, Perth.

Department of Environment and Conservation (2012b). *Sustained yield information sheet series*. August 2012. dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/preparing_FMP_2014-23/sustained_yield_information_sheets.pdf

Department of Environment and Conservation (2011). *Public Participation and Stakeholder Engagement*. Policy Statement. 4 March 2011. dpaw.wa.gov.au/images/documents/about/policy/Public_Participation_and_Stakeholder_Engagement.pdf

Department of Environment and Conservation (2010). *2009-10 Annual Report*. Department of Parks and Wildlife, Perth.

Department of Environment and Conservation (2010a). *Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests*. Department of Parks and Wildlife, Perth.

Department of Environment and Conservation (2008). *Code of Practice for Fire Management*. Department of Parks and Wildlife, Perth.

Department of Environment and Conservation (2007). *A Strategic Plan for Biodiversity Conservation Research 2008-2017*. Department of Parks and Wildlife. Science Division

Department of Environment and Conservation (n.d.). *Science Policy Guidelines 1-6*. Department of Parks and Wildlife dpaw.wa.gov.au/images/documents/about/policy/Science_Policy_Guidelines_1-6.pdf

Department of Environment and Conservation and Conservation Commission of Western Australia. (2014). *Response to the Report 'Calculating the sustained yield for the south-west native forests of Western Australia'*. Government of Western Australia, Perth.

Department of Environment Regulation (2014). *Environmentally Sensitive Areas*. Clearing Regulation Fact Sheet 24, DER2014/001566. Government of Western Australia, Perth.

https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Fact_sheets/fs24-clearing-regs_ESAs.pdf

Department of Environment Regulation (n.d.). *Clearing permits: Framework for regulation of clearing of native vegetation*. Accessed 24 August 2016. www.der.wa.gov.au/our-work/clearing-permits.

Department of Mines and Petroleum (2016). *Environment guidelines and information sheets*. Accessed 23 August 2016. dmp.wa.gov.au/Environment/Publications-and-Guidance-6017.aspx

Department of Mines and Petroleum (2014). *Western Australian Mineral and Petroleum Statistics Digest 2013-14*. Government of Western Australia, Perth.

Department of Mines and Petroleum (2006). *Guidelines for Mining Proposals in Western Australia*. Government of Western Australia, Perth.

Department of Mines and Petroleum (n.d.). *Mining proposals*. Accessed 23 August 2016. <http://dmp.wa.gov.au/Minerals/Mining-proposals-5993.aspx>

Department of Mines and Petroleum (n.d.). *Online Systems*. Accessed 19 August 2016. Government of Western Australia dmp.wa.gov.au/Online-Systems-1527.aspx licences

Department of Parks and Wildlife (2016). *Indicative burn plans*. Updated 15 August 2016. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/management/fire/prescribed-burning/burns/indicative>

Department of Parks and Wildlife (2015). *Aboriginal Joint Management*. Corporate Policy Statement No. 87. September 2015. Government of Western Australia, Perth. dpaw.wa.gov.au/images/documents/about/policy/corporate_policy_statement_87_aboriginal_joint_management.pdf

Department of Parks and Wildlife (2015a). *Department of Parks and Wildlife 2014-15 Yearbook*. December 2015. Government of Western Australia, Perth.

Department of Parks and Wildlife (2015b). *Regulation of the Forest Products Industry*. Corporate Policy Statement No. 11. August 2015. Government of Western Australia, Perth. dpaw.wa.gov.au/about-us/36-policies-and-legislation.

Department of Parks and Wildlife (2015c). *Western Australian Mountain Bike Management Guidelines: Consultation Draft*. Department of Sport and Recreation, WestCycle, West Australian Mountain Bike Association and Western Australian Mountain Bike Management Guidelines Working Group. parks.dpaw.wa.gov.au/sites/default/files/blogs/downloads/CONSULTATION%20DRAFT%20Mountain%20Bike%20Management%20Guidelines_low%20res.pdf

Department of Parks and Wildlife (2014). *Approved recovery plans*. Published 20 March 2014. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/197-approved-recovery-plans>

Department of Parks and Wildlife (2014a) *Department of Parks and Wildlife Strategic Directions 2014-17*. Government of Western Australia, Perth. dpaw.wa.gov.au/images/documents/about/20140589_StrategicDirectionsv_printready.pdf

Department of Parks and Wildlife (2014b). *FORESTCHECK*. Published 17 February 2014. Accessed 17 August 2016. dpaw.wa.gov.au/about-us/science-and-research/landscape-conservation-research/183-forestcheck

Department of Parks and Wildlife (2014c). *Information sheet - Forest Management Plan 2014–2023*. Published 29 January 2014. Accessed 19 August 2016. <https://www.dpaw.wa.gov.au/management/forests/managing-our-forests/166-information-sheet-forest-management-plan-2014-2023>

Department of Parks and Wildlife (2014d). *Planning for timber harvesting*. Published 30 January 2014. Accessed 23 August 2016. dpaw.wa.gov.au/management/forests/forest-produce/175-planning-for-timber-harvesting

Department of Parks and Wildlife (2014e). *Soil and water*. Published 30 January 2014. Accessed 17 August 2016. dpaw.wa.gov.au/management/forests/about-our-forests/177-soil-and-water

Department of Parks and Wildlife (2014f). *Wetland surveys and monitoring*. Published 30 June 2014. Accessed 12 September 2016. dpaw.wa.gov.au/management/wetlands/mapping-and-monitoring/223-surveying-monitoring-wetlands?showall=&limitstart=

Department of Parks and Wildlife (2013). *Commercial operations licensing*. Accessed 23 August 2016. <https://parks.dpaw.wa.gov.au/for-business/commercial-operations-licensing>

Department of Parks and Wildlife (2013a). *Customary Activities*. Published 05 August 2013. Accessed 23 August 2016. dpaw.wa.gov.au/parks/aboriginal-involvement/92-customary-activities

Department of Parks and Wildlife (2013b). *Nature Based Recreation and Tourism Research projects*. Explore Parks WA. Accessed 19 August 2016. parks.dpaw.wa.gov.au/for-business/nature-based-recreation-and-tourism-research-projects

Department of Parks and Wildlife (2013c). *Parks and Wildlife scientific journals*. Published 14 August 2013. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/about-us/science-and-research/76-publications-and-resources/104-dpaw-scientific-journals>

Department of Parks and Wildlife (2013d). *Preparing the Forest Management Plan 2014–2023*. Published 27 June 2013. Accessed 23 August 2016. dpaw.wa.gov.au/management/forests/managing-our-forests/59-preparing-the-forest-management-plan-2014-2023

Department of Parks and Wildlife (2013e). *Policies and legislation*. Published 21 May 2013. Accessed 23 August 2016. dpaw.wa.gov.au/about-us/36-policies-and-legislation

Department of Parks and Wildlife. (2013f). *Social research*. Explore Parks WA. Government of Western Australia. Accessed 17 August 2016. parks.dpaw.wa.gov.au/for-business/social-research

Department of Parks and Wildlife (2013g). *WA Herbarium*. Modified 3 May 2013. Accessed 18 August 2016 dpaw.wa.gov.au/plants-and-animals/wa-herbarium

Department of Parks and Wildlife (2013h). *What's on*. Accessed 23 August 2016. <https://parks.dpaw.wa.gov.au/whats-on>

Department of Parks and Wildlife (2009). *Guidelines for Protection of the Values of Informal Reserves and Fauna Habitat Zones*. Government of Western Australia, Perth.

Department of Parks and Wildlife (n.d.). *Reports prepared as part of the process to develop the Regional Forest Agreement for the South-West Forest Region of Western Australia*. Government of Western Australia, Perth. dpaw.wa.gov.au/images/documents/conservation-management/forests/FMP/List_of_Reports_WA_RFA.pdf

Department of Parks and Wildlife (n.d.). *Aboriginal Involvement*. Accessed 19 August 2016. dpaw.wa.gov.au/parks/aboriginal-involvement/

Department of Parks and Wildlife (n.d.). *About our forests*. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/management/forests/about-our-forests>

Department of Parks and Wildlife (n.d.). *Annual report & yearbook*. Government of Western Australia, Perth. Accessed 19 August 2016. dpaw.wa.gov.au/about-us/annual-report-and-yearbook.

Department of Parks and Wildlife (n.d.). *Beekeeping on Crown land in Western Australia*. Accessed 19 August 2016 dpaw.wa.gov.au/plants-and-animals/animals/beekeeping-on-crown-land-in-western-australia

Department of Parks and Wildlife (n.d.). *Fire*. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/management/fire/>

Department of Parks and Wildlife (n.d.). *FloraBase: the Western Australian Flora*. Accessed 19 August 2016. florabase.dpaw.wa.gov.au/#

Department of Parks and Wildlife (n.d.). *FORESTCHECK*. Accessed 19 August 2016. dpaw.wa.gov.au/about-us/science-and-research/landscape-conservation-research/183-forestcheck

Department of Parks and Wildlife (n.d.). *Land for Wildlife*. Accessed 18 August 2016. dpaw.wa.gov.au/management/off-reserve-conservation/land-for-wildlife

Department of Parks and Wildlife (n.d.). *Licences and permits*. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/plants-and-animals/licences-and-permits>

Department of Parks and Wildlife (n.d.). *Management plans*. Accessed 19 August 2016. dpaw.wa.gov.au/parks/management-plans

Department of Parks and Wildlife (n.d.). *Nature Conservation Covenant Program*. Accessed 17 August 2016. dpaw.wa.gov.au/management/off-reserve-conservation/nature-conservation-covenant-program

Department of Parks and Wildlife (n.d.). *NatureMap: Mapping Western Australia's biodiversity*. Accessed 19 August 2016. naturemap.dpaw.wa.gov.au/

Department of Parks and Wildlife (n.d.). *Off-reserve conservation*. Government of Western Australia. Accessed 19 August 2016. dpaw.wa.gov.au/management/off-reserve-conservation

Department of Parks and Wildlife (n.d.). *Park Stay WA*. Government of Western Australia. Accessed 23 August 2016. <https://parkstay.dpaw.wa.gov.au/>

Department of Parks and Wildlife (n.d.). *Parks for People Caravan and Camping Initiative*. Accessed 24 August 2016. <https://www.dpaw.wa.gov.au/parks/parks-for-people>

Department of Parks and Wildlife (n.d.). *Planning for prescribed burning*. Accessed 19 August 2016. dpaw.wa.gov.au/management/fire/prescribed-burning/54-planning-for-prescribed-burning.

Department of Parks and Wildlife (n.d.). *Research Papers*. Accessed 23 August 2016. <https://science.dpaw.wa.gov.au/papers/>

Department of Parks and Wildlife (n.d.). *Science & research*. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/about-us/science-and-research/>

Department of Parks and Wildlife (n.d.). *Threatened plants*. Accessed 23 August 2016. <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants?view=categories&id=108>

Department of Parks and Wildlife (n.d.). *Threatened species and communities*. Accessed 17 August 2016 dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/

Department of Parks and Wildlife (WA), Department of Agriculture, Fisheries and Forestry (Cwth) (2014). *Joint Australian and Western Australian Government Response to the Review of the Implementation of the Regional Forest Agreement for the South-West Forest Region of Western Australia for the Period 1999-2009*. Government of Western Australia, Perth.

Department of Parks and Wildlife (WA), Department of Agriculture, Fisheries and Forestry (Cwth), (2013). *A Report on Progress with Implementation of the Regional Forest Agreement for the South-West Forest Region of Western Australia. Combined first and second five-yearly report*. Department of Parks and Wildlife, Perth.

Department of the Environment and Energy (n.d.). *Australian Heritage Database*. Accessed 19 August 2016. environment.gov.au/heritage/publications/australian-heritage-database

Department of the Environment and Energy (n.d.). *Recovery plans*. Accessed 23 August 2016. <http://www.environment.gov.au/biodiversity/threatened/recovery-plans>

Department of the Environment and Energy (n.d.). *Species Profile and Threats Database*. Australian Government. Accessed 23 August 2016. <http://environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Department of the Environment and Heritage (2006). *Species information partnerships: sharing knowledge on threatened species*. Department of the Environment and Heritage for the 2006 State of the Environment

Committee. environment.gov.au/system/files/pages/cf848b8c-bb25-4327-9c99-433ff419c6ac/files/species-listing.pdf

Department of the Environment and Heritage (n.d.). *Commonwealth Heritage List*. Accessed 19 August 2016. environment.gov.au/cgi-bin/ahdb/search.pl?mode=search_results;state=WA;list_code=CHL;legal_status=35

Department of the Environment, Water, Heritage and the Arts (2009). *The Australian Environment Act – Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999*. Commonwealth of Australia, Canberra.

Department of the Premier and Cabinet (2015). *Perth and Peel Green Growth Plan for 3.5 Million*. Draft Strategic Conservation Plan for the Perth and Peel Regions. Perth, Western Australia.

EC3 Global (2013). *Great South West Edge National Landscape: Experience Development Strategy*. Final Report, January 2013.

Environmental Protection Authority (2016). *Environmental Assessment Guidelines*. Accessed 17 August 2016 epa.wa.gov.au/Policies_guidelines/EAGs/Pages/default.aspx?cat=Environmental%20Assessment%20Guidelines&url=Policies_guidelines/EAGs

Environmental Protection Authority (2012). *Forest Management Plan 2004–2013. End-of-term audit of performance report: Report and recommendations of the Environmental Protection Authority*. Conservation Commission of Western Australia. Report 1443, June 2012.

Environmental Protection Authority (2010). *Forest Management Plan 2004–2013. Mid-term audit of performance report: Report and recommendations of the Environmental Protection Authority*. Conservation Commission of Western Australia. Report 1362, August 2010. Government of Western Australia, Perth.

Environmental Protection Authority, Department of Mines and Petroleum (2016). *Memorandum of Understanding for Collaborative Arrangements between the Office of the Environmental Protection Authority and the Department of Mines and Petroleum*. 10 February 2016.

Ferguson, I. Adams, M. Bradshaw, J. Davey, S. McCormack, R. Young, J. (2003). *Calculating sustained yield for the Forest Management Plan (2004–2013). Stage 3 Report*. Report to the Conservation Commission of WA by the Independent Panel. Conservation Commission Western Australia. 46p.

Ferguson I., Adams M., Bradshaw J., Davey S., McCormack R., Young J. (2001). *Calculating Sustained Yield for the Forest Management Plan (2004–2013). A Preliminary Review*. Report to the Conservation Commission of WA by the Independent Panel. Conservation Commission, WA. 61p.

Ferguson, I. Dell, B. Vanclay, J. (2013). *Calculating the Sustained Yield for the South-West Native Forests of Western Australia*. Conservation Commission and Department of Environment and Conservation of Western Australia, Perth.

Forest Industries Federation (WA) Inc. (2014). *Code of Practice for Timber Plantations in Western Australia*. Forest Industries Federation (WA) Inc., Bentley WA.

Forest Products Commission Western Australia (2016). *Forest management*. Policy 9. Forest Products Commission Western Australia, Perth.

Forest Products Commission Western Australia (2016a) *Karri forest management plan*. Forest Products Commission Western Australia, Perth.

Forest Products Commission Western Australia (2015). *Annual Report 2015*. Perth, Western Australia. fpc.wa.gov.au/about-us/publications/annual-reports

Forest Products Commission Western Australia (2015a). *Engagement with Noongar Peoples in the South West of Western Australia*. Statement of commitment. Products Commission Western Australia, Perth.

Forest Products Commission Western Australia (2014). *Statement of Corporate Intent 2013-14*. Products Commission Western Australia, Perth.

Forest Products Commission Western Australia (2003). *Contractors' Timber Harvesting Manual, South West Native Forests*. Forest Products Commission Western Australia, Perth. 124pp

- Forest Products Commission Western Australia (n.d.). *Contracts and tenders*. Accessed 23 August 2016. <http://fpc.wa.gov.au/sale-and-supply/how-we-sell-timber/contracts-and-tenders>
- Forest Products Commission Western Australia (n.d.). *Harvest plans*. Accessed 17 August 2016. fpc.wa.gov.au/harvest-plans
- Forest Products Commission Western Australia (n.d.). *Policies and procedures*. Accessed 23 August 2016. <http://fpc.wa.gov.au/about-us/publications/policies-and-procedures>
- Forest Stewardship Council A.C. (2006). *FSC controlled wood standard for forest management enterprises*. FSC Standard FSC-STD-30-010 (V2-0) EN. Bonn, Germany.
- Future Farm Industries CRC (2011). *Leading edge research on profitable perennials*. Future Farm Industries CRC Ltd. Accessed 30 August 2016. www.futurefarmonline.com.au/
- Garnett, S. Szabo, J. Dutson, G. (2010). *Action Plan for Australian Birds 2010*. CSIRO Publishing, Collingwood VIC. 456pp
- Gould, JS. McCaw, WL. Cheney, NP. Ellis, PF. Knight, IK. Sullivan, AL. (2007). *Project Vesta: Fire in Dry Eucalypt Forest. Fuel Structure, Fuel Dynamics and Fire Behaviour*. CSIRO Publishing, Canberra. 228p
- Government of Western Australia (2015). *Single threatened species list to cut red tape*. Joint Media Statement. Minister for Environment; heritage & Minister for State Development; Finance; Innovation. Tuesday 17 November 2015.
- Government of Western Australia (2013). *Government delivers on major election commitment for the environment*. Media Statement. Minister for Environment; Heritage. 30 June 2013.
- Government of Western Australia (2010). *Environmental stakeholder group delivers final reports*. Media statement. Monday 22 February 2010. Minister for Environment. mediastatements.wa.gov.au/Pages/Barnett/2010/02/Environmental-stakeholder-group-delivers-final-reports.aspx
- Government of Western Australia Ministerial Advisory Panel (2012). *Reforming Environmental Regulation in the WA Resources Industry*. Prepared for the Minister for Mines and Petroleum, December 2012.
- Hagan. Dunne, B. Keighery, G. Keighery, L. Steere. Strelein. Webb. Whisson (2012). *Conservation Significance and Management Options for the Vegetation, Floristic and other Conservation Values of the Whicher Scarp: Report of the Expert Panel*. Department of Parks and Wildlife, Perth.
- Havel, JJ. (2002). *Review of management options for poorly represented vegetation complexes*. Mattiske Consulting for the Conservation Commission, December. conservation.wa.gov.au/media/1145/VegComplexesPoorlyRepresented.pdf
- Havel, JJ. Mattiske, EM. (2000). *Vegetation Mapping in the South West of Western Australia*. Department of Conservation and Land Management and Environment Australia.
- Heritage Council State Heritage Office (2016). *State Heritage Register*. Government of Western Australia. Updated 4 February 2016. Accessed 17 August 2016. heritage.wa.gov.au/state-heritage-register
- Invasive Species Council. (2014). *Invasive species are greatest threats to Australia's endemic terrestrial mammals*. Invasive Species Council. 27 June 2014 <http://invasives.org.au/blog/invasive-species-greatest-threats-australias-endemic-terrestrial-mammals/>
- IUCN (1994). *Guidelines for Protected Area Management Categories*. CNPPA with the assistance of WCMC. IUCN, Switzerland and UK. 261p portals.iucn.org/library/efiles/edocs/1994-007-En.pdf
- Kile, G. (2013). *Review of the Implementation of the Regional Forest Agreement for the South-West Forest Region of Western Australia for the Period 1999 – 2009*. Department of Parks and Wildlife, Perth.
- Kinal, J. Stoneman, GL. (2012) *Groundwater disconnection drives streamflow decline*. Department of Environment and Conservation, Western Australia, Science Division, Information Sheet 61/2012, Department of Environment and Conservation, Kensington. 2 p. Available at:

http://www.dec.wa.gov.au/publications/2/doc_download/8049-groundwater-disconnection-drives-streamflowdecline.html.

Kinal, J. Stoneman, GL. (2011). *Hydrological impact of two intensities of timber harvest and associated silviculture in the jarrah forest in south-western Australia*. Journal of Hydrology 399(1-2): 108-120.

Kuswardiyanto, K. Smolinski, HJ. (2007). *Soil survey and assessment of trafficability in the south-west forests of Western Australia: adaptive management and operational trials harvested in winter 2004*. Sustainable forest management technical report, no. 3. Department of Environment and Conservation, Perth. 203p.

Land, Approvals and Native Title Unit (2016). *South West Native Title Settlement*. Government of Western Australia. Last revised 14 July 2016. Accessed 18 August 2016. dpc.wa.gov.au/lantu/south-west-native-title-settlement/Pages/default.aspx

Maher, D. McCaw, L. Yates, C. (2010). *Vulnerability of Forests In South-West Western Australia To Timber Harvesting Under The Influence Of Climate Change*. SFM Technical Report No. 5. Department of Environment and Conservation, Perth.

McCaw, WL. (2013). *Managing forest fuels using prescribed fire: a perspective from southern Australia*. Forest Ecology and Management 294: 217-224.

McCaw, L. Hanstrum, B. (2003). *Fire environment of Mediterranean south-west Western Australia*. In: Fire in Ecosystems of South-West Western Australia: Impacts and Management. Backhuys, Leiden. pp. 87- 106.

McCaw, L. Middleton, T. (2015). *Recovery of tall open eucalypt forest in south-western Australia following complete crown scorch*. Fire Ecology 11(3): 95–107

McCaw, WL. Robinson, RM. Williams, MR. (2011). *Integrated biodiversity monitoring for the jarrah (Eucalyptus marginata) forest in south-west Western Australia: the FORESTCHECK project*. Australian Forestry 74: 240-253.

Mining and Management Program Liaison Group (2015). *Alcoa's Bauxite Mine Rehabilitation Program: Completion Criteria and Overview of Area Certification Process*. Department of State Development, Government of Western Australia. dsd.wa.gov.au/alcoa's-bauxite-mine-rehabilitation-program

Ministerial Council on Forestry, Fisheries and Aquaculture (1999-2010). *Annual Pest, Disease and Quarantine Status Report for Australia and New Zealand*. Primary Industries Standing Committee.

Ministerial Council on Forestry, Fisheries and Agriculture (1996). *Forest Practices Related to Wood Production in Plantations: National Principles*. Department of Agriculture and Water Resources, Canberra.

Montreal Process Implementation Working Group for Australia (2008). *Australia's Sustainable Forest Management Framework of Criteria and Indicators 2008—Policy Guidelines*. Department of Agriculture, Fisheries and Forestry, Canberra.

Montreal Process Implementation Working Group for Australia and National Forest Inventory Steering Committee. (2013) *Australia's State of the Forests Report 2013*. ABARES, Canberra.

Montréal Process Working Group (2009). *Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests*. Fourth Edition. montrealprocess.org/documents/publications/general/2009/2009p_4.pdf

National Landcare Programme (n.d.). *Previous programmes*. Australian Government. Accessed 18 August 2016. nrm.gov.au/news-and-resources/resources/previous-programmes

Natural Resource Management Ministerial Council (2010). *Australia's Biodiversity Conservation Strategy 2010-2030*. Australian Government Department of Sustainability and Environment, Water, Population and Communities, Canberra.

Peace, M. McCaw, L. Mills, G. (2012) *Meteorological dynamics in a fire environment; a case study of the Layman prescribed burn in Western Australia*. Australian Meteorological and Oceanographic Journal 62: 127-142

Plant Health Australia Limited (2007). *Plantation Forest Biosecurity Plan*. Version 2.0. Plant Health Australia, Canberra, ACT.

Project Dieback (2014). *Natural resource management Western Australia*. Accessed 17 August 2016 www.dieback.net.au/

Rab, A. Bradshaw, J. Campbell, R. Murphy, S. (2015). *Review of factors affecting disturbance, compaction and trafficability of soils with particular reference to timber harvesting in the forests of south-west Western Australia*. July 2015. Researchgate
https://www.researchgate.net/publication/280131267_Review_of_factors_affecting_disturbance_compaction_and_trafficability_of_soils_with_particular_reference_to_timber_harvesting_in_the_forests_of_south-west_Western_Australia

Reisen, F. Meyer, CP. McCaw, L. Powell, JC. Tolhurst, K. Keywood, MD. et al. (2011) *Impact of smoke from biomass burning on air quality in rural communities in southern Australia*. Atmospheric Environment 45: 3944- 3953

Robinson, R. (2008). *Forest health surveillance in Western Australia: a summary of major activities from 1997 to 2006*. Australian Forestry 71(3): 202-211

safe work Australia (n.d.). *Agriculture, forestry and fishing statistics*. Accessed 19 August 2016 safeworkaustralia.gov.au/sites/swa/statistics/industry/agriculture-forestry-fishing/pages/agriculture-forestry-fishing

Schirmer, J. (2008). *Forestry, jobs and spending: Forest industry employment and expenditure in Western Australia, 2005–2006*. Technical report 189. Cooperative Research Centre for Forestry, November 2008.

Smethurst, PJ. Sadanandan, NR. Raison, J. Moggridge, B. (2012). *Assessment of Code of Practice for Plantation Forestry: Western Australia*. Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.

South West Aboriginal Land and Sea Council (n.d.). *Homepage*. Accessed 18 August 2016. <http://www.noongar.org.au/>

South west catchments council (n.d.). *Our Work*. Accessed 17 August 2016. swccnrm.org.au/

Sustainable tourism online (2010). *Homepage*. Accessed 17 August 2016. sustainabletourisonline.com/

The State of Western Australia and the Commonwealth of Australia (1999). *Regional Forest Agreement for the South-West Forest Region of Western Australia*. Government of Western Australia, Perth.

Tourism Australia (2011). *The Great South West Edge: A guide book to making the most of your Landscape Positioning*. Australia's National Landscapes Program. Australian Government Director of National Parks.

Tourism Western Australia (2015). *Australia's South West Overnight Visitor Fact Sheet 2014/2015*. The Government of Western Australia, Perth.

Tourism Western Australia (2011). *Naturebank: Exceptional Ecotourism Development Opportunities in Western Australia*. Tourism Western Australia and Department of Environment and Conservation. Perth, Western Australia.

Tourism Western Australia (2011). *Review of nature-based tourism*. Tourism Western Australia and Department of Environment and Conservation. Perth, Western Australia.
[parks.dpaw.wa.gov.au/sites/default/files/downloads/know/nature_base_tourism_brochure_2011_\(2\).pdf](http://parks.dpaw.wa.gov.au/sites/default/files/downloads/know/nature_base_tourism_brochure_2011_(2).pdf)

Tourism Western Australia (n.d.). *Extraordinary self-drive scenic tours*. Accessed 24 August 2016. www.westernaustralia.com/en/Things_to_See_and_Do/Forest_and_Flowers/Pages/Scenic_Drives.aspx

Turner, BJ. (1997). *An Appraisal of Methods and Data used by CALM to Estimate Wood Resource Yields for the South-West RFA Region of Western Australia*. Department of Forestry, Australian National University, Canberra.

University of the Sunshine Coast (2016). *Australian Forest Operations Research Alliance (AFORA)*. Updated 18 July 2016. Accessed 17 August 16 usc.edu.au/connect/research-and-innovation/research-partnerships/australian-forest-operations-research-alliance-afora

URS Australia (2012). *Social and Economic Impact Assessment of Implementation of the Draft Forest Management Plan 2014–2023*. Conservation Commission of Western Australia and Department of Environment and Conservation. Crawley, Western Australia.

Wittkuhn, R. McCaw, L. Wills, A. Robinson, R. Andersen, A. van Heurck, P. Farr, J. Liddelow, G. Cranfield, R. Burrows, N. (2011). *Resilience of open forests and shrublands to contrasting fire interval sequences in a Mediterranean environment of south-west Western Australia*. In *Wildfire 2011: the 5th International Wildland Fire Conference*, 9-13 May 2011, South Africa: Living with Fire: Addressing Global Change through Integrated Fire Management: Sun City, South Africa, 9-13 May 2011 pp. 1-11. Conference Organising Committee, Sun City.

Woinarski, J. Burbridge, A. Harrison, P. (2012). *Action Plan for Australian Mammals 2012*. CSIRO Publishing, Collingwood VIC. 1056pp

Yeatman, G. Groom, C. (2012). *National Recovery Plan for the woylie *Bettongia penicillata**. Wildlife Management Program No. 51. Department of Environment and Conservation, Perth.