



Forest Management Plan 2004-2013. Mid-term audit of performance report



**Conservation Commission of Western
Australia**



**Report and recommendations
of the Environmental Protection Authority**

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Overview of the EPA's advice

Key findings of the Environmental Protection Authority's (EPA's) review of the Forest Management Plan (FMP) Mid-term Audit of Performance Report by the Conservation Commission are:

1. The South West of Western Australia is an acknowledged biodiversity hotspot of international significance. This significance relates to the flora and fauna in the region, much of which is endemic.
2. These biodiversity values continue to be under substantial threat from a range of influences. While clearing for agriculture has historically reduced the extent of forests in the South West to those now subject to the FMP, existing forest values are subject to various diseases and pests, climatic variation largely reflected in declining rainfall and rising temperatures, mining and wood removal, recreational use, fire, and land management practices.
3. Considerable attention has been placed on the effect of a changing climate on forest values over recent decades. This is considered by the EPA to be appropriate. While monitoring in the forest includes the measurement of aspects that would be expected to be affected by changing climate, the variability of climatic conditions makes it difficult to detect impacts over the short term. Some values are sensitive to change while others may be more robust. It is likely that declining rainfall and increasing temperatures, in combination with other threats such as disease and pests, will have already led to adverse impacts and these will increase.
4. The EPA considers that there is considerable doubt and increasing uncertainty about the maintenance of forest values in the low and medium rainfall zones. These zones have moved westward and southward since the 1970s. The Mid-term Audit of Performance Report has pointed to the declining timber yield from the northern jarrah forest. The EPA believes that it is most unlikely that the jarrah forest in the low and adjacent medium rainfall areas, particularly in the northern forest, can continue to contribute to the jarrah sustained yield and also be consistent with ecologically sustainable forest management (ESFM).
5. Changing climate and ongoing management and use also affect the presence and spread of disease through the forest. It has to be recognized that the forest areas include a substantial area of conservation areas (national parks, nature reserves) and other areas protected from disturbance (river and stream zones, Fauna Habitat Zones) and these areas are also impacted by disease and pests. Jarrah dieback (*Phytophthora cinnamomi*) is a dominant disease in the forest and other areas in the South West but is not the only disease that affects flora and fauna values. The EPA reported on dieback management in 2001 (EPA Bulletin 1010) and notes the comments of the Conservation Commission on the need for a whole-of-government approach. The EPA strongly urges a more coordinated, integrated management of dieback throughout the State, not just in the forest regions.
6. The Mid-Term Audit of Performance Report indicates that a number of key guidelines required as part of the implementation of the FMP have yet to be completed and approved, despite the FMP requiring these plans to be completed within 2 years of approval (i.e. by 2006). The lack of these approved guidelines is a major problem and

compounds the limited legal capacity of the Conservation Commission to require compliance with the approved FMP.

7. Governance arrangements related to planning and management of the forest regions need to be reviewed and modified, with the objective of clearly defining responsibilities and compliance roles. The current statutory roles of the Conservation Commission, the Department of Conservation and Environment (DEC) and the Forest Products Commission (FPC) are not effective in ensuring delivery of and compliance with the approved FMP. Key issues are the capacity of the Conservation Commission to require compliance, and the relationship between DEC, FPC and FPC's contractors.
8. The Wungong Catchment trial being undertaken by the Water Corporation has coincided with a series of low rainfall years and these are likely to have significantly affected the results of the trial so far. The EPA considers the trial objectives should more strongly align protection of biodiversity values with water production.
9. The next FMP is due to be prepared and approved by January 2014. Work on this should commence as soon as possible. Matters that the EPA considers need to be addressed during preparation of the next FMP include:
 - The implications to the health of the forest ecosystems under changing conditions, including a drying climate, in the short to long term;
 - Whether continued logging in the low and adjacent medium rainfall zones, especially in the northern forest, would meet ESFM principles and objectives;
 - Governance over forest planning, management and operations – the existing statutory roles and responsibilities of the Conservation Commission, the DEC and the FPC in relation to the FMP need to be reviewed and improved;
 - Compliance by contractors with the FMP, and their relationship with FPC in terms of compliance and enforcement;
 - The environmental implications of whole bole logging and removal in the jarrah forest (e.g. Yabberup block) and whether the impacts arising from that approach have been adequately considered, including public concern;
 - A review of silvicultural policies and practices within an ESFM framework that reflects current and reasonably foreseeable environmental conditions, including the practice of 'notching' of trees and aesthetic and conservation implications of different thinning regimes;
 - The whole issue of the sustainable yield of jarrah, karri and other species in the forest. Many submissions argued that the levels should be reviewed immediately while others want current levels to be maintained during the life of this plan. Associated with this are growth rates of potential log trees and also the effectiveness of regeneration following treatment of State Forest areas;
 - Improving the application of Fauna Habitat Zones and the importance of ecological linkages through State Forest areas;
 - Under a drying climate, whether management of the forest to promote higher stream flows for water supply is realistic and environmentally desirable (e.g. Wungong catchment trial and research);
 - The full impacts and management of forest diseases, including all phytophthora species in jarrah, marri and tuart forest and armillaria in karri forest, and other pests;
 - Improved public understanding of the basis of and data supporting key settings being considered during the process (e.g. sustained yield); and
 - Genuine and effective public involvement in the process.

Contents

Overview of the EPA’s advice.....	i
1. Introduction.....	1
2. Approach of this review.....	1
3. Conservation Commission’s Mid-term Audit of Performance Report.....	3
4. Next forest management plan	10
5. Other advice - Dieback	12
6. References.....	13
Appendix 1	List of submitters
Appendix 2	Response to submissions – Conservation Commission of WA
Appendix 3	Response to submissions – Department of Environment and Conservation
Appendix 4	Response to submissions – Forest Products Commission
Appendix 5	Further advice from the Conservation Commission on forecast and realised yields of jarrah and karri other bole volume production, and information from the FPC on the increasing use of machine harvesting and soil disturbance

1. Introduction

This report by the Environmental Protection Authority to the Minister for Environment has been prepared in accordance with Condition 2-3 of Ministerial Statement 641 related to the Forest Management Plan 2004-2013 (FMP).

The Conservation Commission of Western Australia (Conservation Commission) submitted its report on the Mid-term Audit of Performance on the Forest Management Plan 2004-2013 (Conservation Commission 2008) to the Environmental Protection Authority (EPA) on 24 December 2008. The mid-term audit of the FMP was undertaken by the Conservation Commission in accordance with Ministerial Condition 2-2 of Statement 641, which requires that:

The proponent shall submit the mid-term audit of performance report and the end-of-term audit of performance report to the Environmental Protection Authority by 31 December 2008 and 31 December 2012 respectively.

The Conservation Commission's stated objective of this mid-term audit is to provide the EPA with advice regarding the extent to which management of land to which the plan applies has been undertaken in accordance with the plan.

The Conservation Commission's Mid-term Audit of Performance Report was released for public comment for three months, closing at the end of June 2009. A total of 88 submissions were received by the EPA, including 41 proforma submissions. These submissions were provided to the Conservation Commission, the Department of Environment and Conservation (DEC) and the Forest Products Commission (FPC) and each agency provided a written response to the submissions. These responses are in Appendices 2-4.

In addition, the Conservation Commission provided further advice in relation to forecast and realised yields of jarrah and karri other bole volume production and information from the FPC on the increasing use of machine harvesting and soil disturbance. This information is presented in Appendix 5.

As part of its review of the Mid-term Audit of Performance Report and issues raised in submissions, the EPA undertook two field trips to inspect areas of State Forest between Dwellingup and Pemberton in December 2009 and January 2010. These are elaborated in the next section.

Ministerial Condition 2-3 of Statement 641 states that:

The Environmental Protection Authority will review each audit of performance report referred to in condition 2-2 and provide advice to the Minister for the Environment in a public report on compliance with the conditions of this Statement.

This report fulfils the requirement of Condition 2-3 with respect to the mid-term audit.

2. Approach of this review

The EPA is required to review and report on compliance with the conditions of Ministerial Statement 641 and has approached this task in two parts.

The first part relates explicitly to the Conservation Commission's Mid-term Audit of Performance Report 2008 and the additional information provided by the Commission, presented in Appendix 5. In doing so, the EPA acknowledges the responsibilities that the Conservation Commission has under the *Conservation and Land Management Act 1984* (CLM Act) to audit the implementation of the approved FMP.

Statement 641 not only requires the mid-term audit of performance review and this related report, but also stipulates that the Forest Management Plan 2004-2013 be amended prior to approval to address a number of specific matters raised in EPA Report 1113. The FMP was revised accordingly. The EPA will refer to several of the matters identified in Condition 3 of Statement 641 in this review, including:

- timelines for key subsidiary documents;
- progress on reserve implementation;
- Fauna Habitat Zones;
- public availability of sustained yield information; and
- over cutting in the first five years of the FMP.

Many of the submissions received on the Mid-term Audit of Performance Report went beyond issues of compliance with the FMP and proposed revision of the current Plan or a new forest management plan commencing before 2014.

The second part identifies issues that were raised in submissions and from the EPA's own observations, including those during the field trips, which should be considered during the preparation of the next forest management plan.

The EPA undertook two field inspections in relation to the performance audit, one in December 2009 with representatives of the conservation movement and another in January 2010 with representatives of the timber industry. Senior officers from the Conservation Commission, the DEC and the FPC attended both field inspections.

The purpose of these field inspections was two-fold:

- to familiarise the EPA with planning and management undertaken in State Forest, with an emphasis on areas subject to timber production operations; and
- to provide the opportunity for representative bodies to have direct discussions with and to show the EPA particular aspects and issues related to the FMP.

The field inspections covered jarrah forest from near Jarrahdale and Dwellingup to karri forest south of Pemberton, and some forest areas in-between. Key issues discussed in the field included:

- Climate change and the health of forest under a drying climate;
- Governance over forest management and planning, especially the roles of the Conservation Commission, the DEC and the FPC;
- Compliance by FPC contractors;
- Whole bole logging in the jarrah forest (e.g. Yabberup block trial);
- Sustainable yield levels, particularly in relation to growth rates of potential harvest trees and also regeneration following treatment of State Forest areas;
- The future of the timber industry;
- Silvicultural practices, including non-commercial thinning;
- The design of and results from the Wungong catchment trial and research project;
- The provision of Fauna Habitat Zones within forest areas;

- Forest diseases, including phytophthora species in jarrah, marri and tuart and armillaria in karri; and
- Preparation of the next FMP.

The EPA expresses its appreciation to the people who arranged and attended these field inspections. The knowledge gained and the information shared has been extremely useful to the EPA.

3. Conservation Commission's Mid-term Audit of Performance Report

The Mid-term Audit of Performance Report 2008 presents detailed information on the actions listed in the FMP and the status of the implementation for each of those Actions. In addition, it identifies progress in meeting the Key Performance Indicators (KPIs) set out in the plan. These are a key part of the Conservation Commission's audit responsibilities. The Commission prepares and publishes annual reports on compliance with and progress on implementation of the FMP on its website (www.conservation.wa.gov.au). These reports informed the Mid-term Audit of Performance Report 2008, which reflects on the first 5 years of the FMP.

Chapter 2 of the Mid-term Audit of Performance Report 2008 presents an overview of the Commission's assessment of the implementation of the FMP during 2004-2008. In doing so, the Commission discussed a number of key issues identified during its audit processes and provided advice to the EPA on those issues. The EPA notes the advice of the Commission and provides specific comment on a number of these issues.

Biological diversity

The creation of reserves under the FMP can take as long as the 10 year term of the FMP to be delivered. However, the EPA notes that Table A1 of the Mid-term Audit of Performance Report shows that all additions to the formal conservation reserves established since the commencement of this FMP occurred in the first two years of the Plan, with no further additions during 2006-2008 (Conservation Commission 2008, p.137). Approximately 67% of the total area of land category changes to formal conservation reserve had been achieved by March 2008.

A key component of the FMP is the establishment of new conservation reserves, most of which are already reserved as State Forest. Changing the purpose and status of already reserved land should be a relatively straight forward task, where that change is contained within a statutory plan approved by the Government. The EPA expressed its concern about the lack of implementation of a substantial portion of the conservation reserve proposals under the previous FMP and item 4 of Condition 3-1 in Statement 641 was a direct consequence of that concern. The Commission's comment about the need for a whole-of-government approach to the implementation of these approved reserves is strongly supported by the EPA. It is not clear to the EPA that there is a timetable within the life of this FMP for the implementation of the remaining 339 areas as formal conservation reserves.

This is also an important matter for the community. Many submissions expressed similar concern and disappointment on this crucial issue.

Allied to the conservation reserve system is the allocation of areas within State Forest that are excluded from timber production for various periods in order that a range of ecological values can be protected from direct impact. The designation of Fauna Habitat Zones was a key initiative in this FMP and it is therefore of concern to the EPA that the final guidelines for the Selection of Fauna Habitat Zones have yet to be completed by the DEC. Their approval by the Minister is already five years late and the FMP is now more than half way through its life.

Productive capacity

The Commission indicated that a detailed analysis of the causes for the greater annual volumes of 'karri other bole logs' (i.e. non sawlogs) being produced would be undertaken as there is a potential inconsistency between the FMP's requirements for karri thinning and the allowed volumes. In addition, the Commission noted that the yield of jarrah sawlogs per hectare being realised from logging operations has been less than expected, and that it would also analyse this matter further.

These analyses were the subject of a separate report by the Commission to the EPA in October 2009 (Appendix 5) and are summarised below.

In the case of karri other bole volume (KOBV) production, the Commission advised that the additional volumes of KOBV largely result from an expanded program of karri regrowth thinning, that the FPC is operating in accordance with the silvicultural guidelines, that there is no evidence of systematic over-thinning, and operations have not resulted in an excessive yield of sawlogs. The Commission has presented three options to the EPA to resolve the issue of compliance or non-compliance with the FMP with respect to this matter.

- Option 1. No adjustment to KOBV limits specified in the FMP, continue harvesting as per silvicultural prescriptions, with a high likelihood of exceeding the upper limits of KOBV in the FMP over the 10 year period. This may result in non-compliance with the FMP and achieves appropriate outcomes for future sawlog production.
- Option 2. No adjustment to KOBV limits specified in the FMP, scale back harvesting and do not exceed the limits in the FMP over the 10 year period. This option results in compliance with the FMP but will have negative commercial impacts for the FPC and may have a negative impact on the health and vitality of the forest over the long term.
- Option 3. Adjust the KOBV limits in the plan to reflect current and expected production. This would require an amendment to the FMP, in accordance with the CLM Act.

On the basis of the information provided by the Conservation Commission, the higher volume of KOBV does not, of itself, appear to be a problem. Indeed, there may be some benefit to the condition of the forest. If this is the case, the notion of an 'authorised' non-compliance may be of little environmental consequence but clearly is a problem for the Commission, the DEC and the FPC. The EPA considers that the plan has been assessed and approved and therefore must be complied with. Therefore, Option 1 is not considered appropriate. If there is a need to amend the FMP, then this should follow the statutory processes under the CLM Act.

Lower actual yields of jarrah sawlogs than forecast is, as the Conservation Commission states, likely to be subject to a number of factors. While the Commission indicated in the

Mid-term Audit of Performance Report that such a shortfall, if it were to continue, would have an impact on sustained yields, it has now advised that it is not necessary to make an adjustment to the sustained yield for jarrah sawlogs at this point in time. The Commission expressed concern with the clear trend of less volume than forecast being removed in the Swan Region and has recommended that KPI 11 should be amended to allow for annual reporting of yields from 2010 onwards rather than at the mid-term (five year) review of the plan. The EPA supports this amendment to the reporting frequency under KPI 11.

Declining long term rainfall throughout the South West will have a deleterious effect on tree growth. While the absolute decline has been greatest near the Capes, the relative decline in the low and medium rainfall portions of the forest has also been significant (<http://www.bom.gov.au/cgi-bin/climate/change/trendmaps.cgi>). The EPA has serious doubts that continued logging in the low rainfall zone and adjoining medium rainfall zone in the eastern portion of the forest would be capable of meeting ESFM objectives. This would clearly be a key matter for consideration in the development of the next FMP.

The EPA notes the Conservation Commission's concern with performance in the areas of regeneration and regrowth and that the Commission will consider undertaking future specific performance assessments during the remainder of the plan's duration. The EPA expressed reservations in its report on the Proposed Forest Management Plan (EPA 2003) about the likely regeneration success from the current jarrah silviculture prescriptions, and therefore supports the Commission's intention to carry out performance assessments.

One matter that was the subject of public submissions, media articles and was viewed by the EPA during its December field visit was the whole bole logging trial in Yabberup block. While the trial may be consistent with the FMP, the EPA supports the decision by the FPC to suspend further application of whole bole log removal. The possibility of extending such an intensive wood removal operation to more areas of the State Forest should only occur after there has been a much closer examination of the environmental effects and a comprehensive and transparent public process.

Ecosystem health and vitality

As the Commission has stated in its report, the nature and scale of threats to the forest appear to be increasing and the combining of some of these threats over time and in parts of the forest is placing considerable stress on the values of the forest.

The EPA continues to be very concerned that the implications of climate change on the health of the jarrah forest are potentially predictable but are not so evident that management responses are clear. The notion of a precautionary approach, based on monitoring and early adaptive management, including reviewing settings upon which management is based, is appropriate. However, such an approach means that even a ten year plan may contain levels of inflexibility that are undesirable.

Management with and of fire was the subject of an EPA report in 2004 (EPA 2004). In that report, the EPA recommended that, in planning the annual burn programme, assessment of fire requirements for biodiversity outcomes are given first consideration, whilst recognising the obligation to protect human life. The EPA therefore considers that the following comments of the Commission are clearly important:

The Conservation Commission is concerned that the Department is giving inadequate weighting to biodiversity as an objective for fire management. The Conservation

Commission has not yet been convinced that a clear and demonstrated link between special biodiversity requirements and the details of individual fire prescriptions has become a routine outcome of fire management planning. The Conservation Commission would also like to see post-burn monitoring and review become part of the routine outcome of prescribed burns. (Conservation Commission 2008, p.10)

The EPA clearly supports the Commission's intention to maintain its performance assessment of fire management as a priority within its work program.

A key concern to the EPA, the Commission and the community is disease in the forest. This is not only about jarrah dieback (*Phytophthora cinnamomi*), which has been a major focus of research and management. There are a number of other *Phytophthora* species that have also been identified in forested areas within the FMP. In addition, concern has been raised about the implications of armillaria, especially within the karri forest.

The Commission has reflected on the substantial scale and complexity of addressing the management of dieback. The EPA notes the following comment by the Commission:

There is a need for a set of consistent measures to be developed that applies to all Government and non-government bodies, industry and the general public. The Conservation Commission is of the view that these need to be made binding through a whole-of-government statutory policy and/or regulations. This may be achieved under the current framework of the Environmental Protection Act 1986; however, if not then the appropriate legislation should be amended to enable this action. (Conservation Commission 2008, p.82)

The EPA is prepared to work with the Conservation Commission and agencies to establish an appropriate framework that supports a whole-of-government approach to improved protection of the important but threatened flora of the State. Equally important is the application of appropriate dieback management throughout all of the state, not just in State Forest areas (EPA 2001). Further comment on dieback is provided in section 5 of this report.

In the meantime, the Commission has stated that it will undertake a comprehensive performance assessment of dieback management and policy for vested lands that will lead to the provision of advice to the EPA and the Minister for Environment.

Soil and water

The Commission has raised concern about the implications to soil disturbance of the increasing use of machine logging in the forest. The EPA saw examples of machine logging in operation in the jarrah and karri forests during its field visits.

Following a request from the Commission, the FPC provided advice on the matter of machine harvesting (Appendix 5). The report pointed to a number of advantages of machine harvesting over manual tree felling, particularly related to the additional safety provided to the operator, as well as higher production rates with lower unit costs of production and better control of trees during felling and placement into heaps. The FPC also pointed to a number of drawbacks, including if the operator is not well trained and logging operations are not well planned, contributing to adverse soil disturbance levels. It appears to the EPA that it is critical that operators in the forest, particularly those employed through contractors, have the necessary skills and knowledge of relevant prescriptions applying in the forest. As

recognized by the FPC, this is an increasingly important matter as failure to follow these prescriptions should be subject to clear management action.

Soil disturbance was one aspect of concern raised by the Commission in relation to machine harvesting. The other is the implication of machine logging on dieback management. The Commission considers that this can be addressed under existing procedures.

The issue of increasing use of machine logging was also raised in submissions to the EPA on the Mid-term Audit of Performance Report.

In relation to FMP Objective 21 – Water, the Commission points to the possible conflict between protecting “the ecological integrity and quality of streams, wetlands and their associated vegetation, and increase the flow of water in the context of a drying climate. The Conservation Commission notes the now considerable uncertainty regarding the streamflow benefits from a program of active catchment management aimed to increase streamflow.” (Conservation Commission 2008, p.11)

A large scale trial on whether additional water flow in streams could be generated from intensive management of vegetation, especially tree density, is currently underway in the Wungong Catchment. This is required to be undertaken in accordance with the FMP. The EPA notes the Commission’s comment that the performance assessment of the Wungong Catchment Trial, which was expected to be completed by 31 July 2009, would provide an analysis of management of catchments to increase water run-off.

The EPA had the opportunity to inspect part of the forest subject to the Wungong Catchment trial. A key aspect of the trial is to maintain areas of the State Forest at a range of tree densities that are low to very low. This clearly has serious implications on forest biodiversity values in those areas. However, a number of years of very low rainfall and resultant declining groundwater levels coinciding with the trial have meant that there has been little stream flow.

The EPA notes that the Water Corporation decided in April 2010 to continue the trial for a further four years. Following a review of the knowledge gained in the past four years, the Corporation plans to modify part of the original proposal. This will require approval from the Conservation Commission for an adaptive management trial (Water Corporation, 2010). As part of modifying the trial, the EPA considers that the trial objectives should more clearly align protection of biodiversity values with water production rather than potentially having one with a higher priority than the other.

Global carbon cycles

The implications of climate change on the forest values and the need to establish a monitoring programme that would look to identifying impacts on forest values was an important part of the EPA’s review of the Proposed Forest Management Plan in 2003 (EPA 2003). The Commission has indicated in its Mid-term Audit of Performance Report that it, like the EPA, also remains concerned about the consequences for forest management of climate change.

Most submissions on the Mid-term Audit of Performance Report listed climate change as a major issue, with many arguing that the current FMP needed to be changed immediately. Issues such as reduced rainfall and hence water availability, little or no regeneration of logged areas, little or no growth (increment) of jarrah and other trees, were raised by

submitters. They pointed to the critical relationship of tree growth of the key commercial species (jarrah, marri and karri) and sustained yield estimates.

The EPA notes the discussion by the Commission in relation to global carbon cycles, including the following aspects:

- the current FMP already incorporates aspects of climate change, including in the calculation of sustained yield;
- predictions of the effects of climate change for the South West region have tended to coalesce around higher temperatures, declining rainfall and changes to the severity and seasonality of weather events;
- the Commission's conclusion that a more strategic review of forest management under a changing climate is required, and that this review should be at a whole-of-government level and provide for wide public consultation; and
- the Commission would initiate this review with the preparation of a paper that would discuss, among other things, the adequacy of the conservation reserve system and its management, the adequacy and connectiveness of formal and informal reserves and protected areas within the forest areas, the range of values and uses that the forest can support into the future (especially in the eastern jarrah forest), the provision by forest areas of water for humans and ecosystems, management of the threats from weeds, pests and disease, and the impact of planned and unplanned fire on values.

These are clearly important matters not only under the current FMP but even more for future management plans. The EPA acknowledges and supports the concern of the Commission on this critical and difficult issue of climate change. While a focus in submissions has been on the implications to sustained yield, the much more significant aspect of changing climatic conditions is on the health and vitality of the forest, irrespective of the additional pressures that logging and mining might have.

The Conservation Commission indicated in the Mid-term Audit of Performance Report that, to promote further discussion on the implications of climate change to forest management, it would publish a discussion paper by 31 July 2009 and prepare a final report by 31 December 2010 to inform the development of the next FMP from 2011.

The following comment is also made in the Mid-term Audit of Performance Report:

The Conservation Commission has also considered the need to change forest management practices in advance of the adoption of the next FMP. The Conservation Commission is aware that some sections of the community are of the view that action should be taken immediately rather than in five years time. The Conservation Commission has considerable sympathy with this view and believes that, should the long-term strategy recommended here identify issues requiring an immediate response to avoid future opportunities being lost, then these measures should be implemented prior from the end of 2009, through amendment to the FMP, its associated guidelines, or in other ways. (Conservation Commission 2008, p.98)

While these actions go outside of the Mid-term Audit of Performance Report, the EPA notes that the discussion paper has yet to be published.

Implementation of the FMP

The Commission has reported that a number of the subsidiary documents required under the FMP remain outstanding. It has stated that the lack of progress with the preparation through to final approval of these subsidiary management guidelines is of considerable concern.

The EPA supports the Commission's comments about the capacity of the DEC to complete the actions in the FMP. Of particular concern is the lengthy delay in finalising a number of the key subsidiary documents that underpin the FMP and its implementation.

While the Conservation Commission has acknowledged that delays in the finalisation of these and other guidance documents required by the FMP are mainly related to resource constraints, competing priorities and servicing other requirements of the FMP, the EPA finds that these reasons are not acceptable in the case of several of the guidelines, that is Guidelines for Selection and Management of Fauna Habitat Zones and Guidelines for the Management of Informal Reserves. The establishment of Fauna Habitat Zones was a key initiative in this FMP and it was crucial that the guidelines for their location and establishment were prepared and implemented as an immediate priority. The delay in their preparation has led to suggestions in submissions to the EPA that the lack of the guidelines represents a form of challenge to the approved plan. This skepticism is understandable.

The preparation of key guidelines was a matter specifically raised by the EPA in 2003 as these plans were considered to be fundamental to implementation of and compliance with the FMP. A number are the subject of specific requirements in Statement 641. In particular, Condition 3-1 1 indicated that the following guidelines should be approved or reviewed within the following timeframes:

Name and responsible agency	Approved by	Current Status (December 2008)
Guidelines for Selection and Management of Fauna Habitat Zones (Action 7.2.2) - DEC	31 December 2004	Draft published
Guidelines for the Management of Informal Reserves (Action 3.1.2 and 7.2.2) - DEC	31 December 2004	Draft document prepared
Goals for Understorey Structural Diversity (Action 4.1) - DEC	31 December 2005	In preparation
Jarrah Silviculture Guidelines - DEC	31 December 2004	Reviewed November 2004
Karri Silviculture Guidelines - DEC	31 December 2004	Reviewed January 2005
Wandoo Silviculture Guidelines - DEC	31 December 2004	Reviewed November 2004
Soil and Water Conservation Guidelines (Action 20.1.2) - DEC	31 December 2005	Draft published
<i>Phytophthora cinnamomi</i> and Disease Caused by it – Volume 1. Management Guidelines (Action 18.2.1) - DEC	31 December 2008	Not commenced
Guidelines for the Preparation of Area Management Plans For Conservation Reserves (Action 5.2) – Conservation Commission	-	Interim guidelines published 2006

The Commission's report on KPI 33 provides information on the current status of these guidelines, as at December 2008. Only the reviews of Jarrah, Karri and Wandoo Silviculture Guidelines have been completed.

Despite Statement 641 emphasising the importance of the completion of key guideline documents within one to two years of commencement of the FMP, many remain in draft status only. The EPA reiterates its concern about the fact that many of these documents have yet to be approved. As the Conservation Commission is the proponent of the FMP 2004-2013, it could be considered that the Commission has not met some of the requirements of Statement 641. However this highlights the untenable position in which the Commission finds itself, having the responsibility for, but not capacity to deliver on, the FMP. This cannot continue and must be resolved.

This not only raises the issue of compliance, but also governance, a matter addressed by the EPA in 2003. In EPA Bulletin 1113, the EPA provided the following advice and recommendation:

Having examined the issue of compliance in some detail, the EPA is also aware that, although it is the proponent, the Conservation Commission has very limited capacity to deal with breaches or failure to implement the approved plan. While their respective legislation indicates that the DCLM and FPC must operate in accordance with the approved plan and the Conservation Commission will audit compliance with the plan, there is no specific action that the Conservation Commission can take to rectify breach or non-implementation other than through the normal Minister to Minister/ Cabinet process and publication of its audit findings.

The EPA recommends that the Minister for the Environment consider whether the Conservation and Land Management Act and the Forest Products Act should be amended to permit the Conservation Commission to require compliance with the approved plan where there has been a breach of compliance. (EPA 2003, p.37)

The EPA notes that the Conservation Commission has indicated that it will propose amendments to the CLM Act to create a statutory duty for the Conservation Commission to provide advice to the Minister for Environment, and for its tabling in Parliament, when substantial non-compliance with the FMP leading to serious environmental consequences appears likely. If this proposed amendment was to proceed, it would go some way to addressing the previously stated concern of the EPA in relation to governance.

The Commission has also flagged that the DEC has raised with the Conservation Commission an issue concerning the adequacy of the Department's powers with respect to compliance with the FMP by its implementing agencies. The EPA notes that the Conservation Commission has offered the DEC support in seeking appropriate powers under the CLM Act and supports this initiative.

4. Next forest management plan

The current FMP can operate until the end of 2013. It is important that preparation of the next FMP commences as it is now less than four years before the end of 2013, and the EPA's experience with previous FMPs suggests that it will take all of that time to prepare for the next plan. In particular, the identification of options for management strategies, including sustained yield, takes considerable time. Of course, there is an expectation that the

community can participate in the identification of these management strategies and be sufficiently informed to understand the basis of the settings that are fundamental to the plan.

The EPA considers that there needs to be early agreement, following full public consultation, on the process that will be used to develop the next forest management plan. That process, which is under the control of the Conservation Commission, should commence immediately. The EPA would expect to assess the penultimate version of the proposed forest management plan, and will therefore participate in that process.

One of the aspects that will need to be considered through that process will be the identification of issues that the next forest management plan will address. Through the combination of submissions made on the Mid-term Audit of Performance Report and discussions during its field inspections, the EPA considers that the following issues need to be part of that consideration:

- The implications to the health of the forest ecosystems under changing conditions, including a drying climate, in the short to long term;
- Whether continued logging in the low and adjacent medium rainfall zones, especially in the northern forest, would meet ESFM principles and objectives;
- Governance over forest planning, management and operations – the existing statutory roles and responsibilities of the Conservation Commission, the DEC and the FPC in relation to the FMP need to be reviewed and improved;
- Compliance by contractors with the FMP, and their relationship with the FPC in terms of compliance and enforcement;
- The environmental implications of whole bole logging and removal in the jarrah forest (e.g. Yabberup block) and whether the impacts arising from that approach have been adequately considered, including public concern;
- A review of silvicultural policies and practices within an ESFM framework that reflects current and reasonably foreseeable environmental conditions, including the practice of ‘notching’ of trees and aesthetic and conservation implications of different thinning regimes;
- The whole issue of the sustainable yield of jarrah, karri and other species in the forest. Many submissions argued that the levels should be reviewed immediately while others want current levels to be maintained during the life of this plan. Associated with this are growth rates of potential log trees and also the effectiveness of regeneration following treatment of State Forest areas;
- Improving the application of Fauna Habitat Zones and the importance of ecological linkages through State Forest areas;
- Under a drying climate, whether management of the forest to promote higher stream flows for water supply is realistic and environmentally desirable (e.g. Wungong catchment trial and research);
- The full impacts and management of forest diseases, including all phytophthora species in jarrah, marri and tuart forest and armillaria in karri forest, and other pests;
- Improved public understanding of the basis of and data supporting key settings being considered during the process (e.g. sustained yield); and
- Genuine and effective public involvement in the process.

This list is not intended to be comprehensive nor in priority order. It is put forward to inform the Conservation Commission and other involved parties early in the process to develop the next forest management plan. The EPA has made comment on a number of these matters in its discussion in the preceding section on the Mid-term Audit of Performance Report.

The EPA considers that climate change and governance are critical matters to be addressed. The whole question of climate as a fundamental agent and driver of change to current values has many other issues attached to it, including sustained yield, disease, fire, soil and water protection, etc. Unless the governance arrangements related to information, planning, management and activities in the forest areas, within clear policy settings, are resolved there will remain levels of mistrust and justifiable challenges to those agencies. This has to be addressed outside of the FMP, but then be reflected in it.

An issue that remains difficult to understand and is critical to the next FMP is what ecologically sustainable forest management (ESFM) means. The Conservation Commission referred to the definition of ESFM as:

Ecologically sustainable forest management is defined in various ways. In broad terms ecologically sustainable forest management may be considered to be a management system that seeks to sustain ecosystem integrity, while continuing to provide ongoing social and economic benefits to the community through the sustainable access to wood and non-wood forest resources and enjoyment of other forest values. (Conservation Commission 2003)

In its assessment of the then Proposed Forest Management Plan in 2003, the EPA advised that each of the ESFM principles had been addressed (EPA 2003). It also made the following observation in relation to ESFM:

When assessing the Proposed FMP, the EPA was aware that the ESFM principles apply at the whole of forest level and to the period of the plan and beyond. How these principles will be met will vary across the forest, depending on current and previous management, especially disturbances such as timber harvesting. It is also relevant that none of the ESFM principles can be met in isolation from the other principles. (EPA 2003, p.ii)

It is clear from submissions and discussions that the EPA held with various groups and individuals during this review that there remain very divergent views of what ESFM looks like in terms of forest management planning and activities. Obviously a key focus about what ESFM is relates to logging levels and how predictions of wood availability over the short, medium and long term are made and how these predictions are influenced by changes to environmental and other parameters relevant to tree growth. However, this is just one aspect of ESFM principles and objectives that must be addressed as part of forest management requirements.

The notion that all objectives can be met concurrently is often difficult to accept, and there is a risk that each is achieved sub-optimally (both over time and across the forest as a whole). It would be beneficial if, during the preparation of the next FMP, consideration is given to the implementation of ESFM in a less complex manner in parts of the forest.

5. Other advice - Dieback

A crucial issue that the Conservation Commission raised in its Mid-term Audit of Performance Report but which goes beyond the forest areas subject to the FMP is control and management of dieback (*Phytophthora cinnamomi*). This was also raised in submissions and in discussions with the EPA.

There are other *Phytophthora* species present in Western Australia. While they may not be having the same scale of impact on flora species, they represent a substantial threat to a vast range of flora across the State, not just in the South West.

The risk to the world-significant flora and fauna values of Western Australia is extremely high.

The EPA agrees with the Conservation Commission that the only way to address dieback is at a whole-of-government level. While there is general recognition of the issues associated with dieback in particular settings and in relation to specific activities, there is no coordinated overarching approach or leadership at a state level despite attempts by the DEC and others.

The EPA is aware of significant initiatives through non-government groups, such as Project Dieback under the aegis of South Coast Natural Resource Management Inc, which go beyond land set aside or managed under the CLM Act. That project has approached the management of the impacts of dieback in four ways:

- Strategically mapping the distribution of *Phytophthora* dieback in the South Coast region, enabling the identification of protectable areas of native vegetation;
- Trialling physical and chemical barriers to prevent the spread of the disease and investigating the survival capacities of the pathogen;
- Protecting high value areas infested with *Phytophthora* dieback by the application of phosphate and using signage in protectable areas; and
- Promoting the adoption of management practices that can reduce the impact of the disease.

These initiatives need to be encouraged and expanded to cover all areas of the State that are vulnerable to dieback impacts. The EPA intends to follow up on its 2001 advice to government and will work closely with the Conservation Commission and others to establish an effective approach to protecting healthy ecosystems from dieback. This means looking at dieback management across the whole of the landscape and not just in State Forest and the conservation estate. As a first step, there would be merit in an independent review (e.g. by the Auditor General) of the adequacy of current approaches to dieback management on both Crown and private land holdings. This would assist the State Government to provide overall direction and clearly assign leadership for dieback management across the state, and to then implement a coordinated and adequately funded approach.

6. References

Conservation Commission 2003. Proposed Forest Management Plan

Conservation Commission 2008. Forest Management Plan 2004-2013 - Mid-term Audit of Performance Report

EPA 2001. Protocol for the identification and prioritisation for management of *Phytophthora cinnamomi* 'protectable areas' (EPA Bulletin 1010)

EPA 2003. Proposed Forest Management Plan 2004-2013 (EPA Bulletin 1113)

EPA 2004 Review of the Fire Policies and Management Practices of the Department of Conservation and Land Management (EPA Bulletin 1151)

South Coast Natural Resource Management Inc. *Getting a handle on Phytophthora dieback.*

Water Corporation 2010. *Wungong Whispers* Volume 10 June 2010

Appendix 1

List of Submitters

Organisations:

Water Corporation
Jarrahdale Heritage Society Inc.
South-West Forests Defence Foundation Inc.
Department of Indigenous Affairs
The Institute of Foresters of Australia
Leeuwin Environment
Busselton Dunsborough Environment Centre Inc.
Conservation Council of WA
The Wilderness Society of WA
Western Australian Forest Alliance
Bridgetown-Greenbushes Friends of the Forest
The Bushfire Front Inc
Department of Water
South west Aboriginal Land & Sea Council
Global Warming Forest Action Group
Northcliffe Environment Group
Preston Environment Group
Department of Conservation and Environment
Forest Industries Federation (WA) Inc.
Friends of the Earth Southwest WA
Forest Products Commission
South West Environment Centre Inc.
Biomass Action Group
Denmark Environment Centre

Individuals:

B Hobbs	R Freeman	P Austin
J McBain	M Hodie	L Maddock
G Read	J Vukovich	I Crosser
M & J Firth	M Cassinet	T Leigh
P Shalders	A Bagshawe	S Collins
R Frith	K Smith	E Collins
D Rastrick	M Hoar	G Churches
C Smith	V Kerfoot	D Tripp
K Schmah	T Mitchell	B Winfield
J Star	R Chindarsi	P Kindner
K Chandarsi	D Walker	R Trobyn
K McKeogh	M Henry	P Mason
A & R Linkevics	A Zadkovich	C Rieden
J Wheatley	C Sharp	I Dodson
H Schapper	L van der Maesen	M Calpakdjian
P Brockman	F Batini	M Munyard
K Bailey	C Perry	G Chandler
J Ristic	R Barker	M Owen
N Stanley	C Bulbeck	

Appendix 2

Response to Submissions – Conservation Commission of WA



Mr Paul Vogel
Chair
Environmental Protection Authority
Locked Bag 33, Cloisters Square
Perth WA 6850

Your Ref: _____
Our Ref: Gordon Graham
Enquiry @ conservation.wa.gov.au
Email: gordon.g@conservation.wa.gov.au
Records Services Received
ENVIRONMENTAL PROTECTION AUTHORITY
Ref No 3 - NOV 2009
EPA File No 2517
Scanned? 35-15
Y N

Dear Paul

CONSERVATION COMMISSION RESPONSE TO THE PUBLIC SUBMISSIONS ON THE FOREST MANAGEMENT PLAN 2004-2013 (FMP) MID TERM AUDIT OF PERFORMANCE REPORT AND ADVICE TO THE ENVIRONMENTAL PROTECTION AUTHORITY (EPA) ON THE JARRAH AND KARRI SUPPLEMENTAL REPORTS

Please find attached, for your consideration, the Conservation Commission's response to the public submissions on the FMP mid-term audit (Attachment A), and advice to the EPA on the realised and forecast yields of jarrah and karri other bole volume production (Attachment B). Please also find attached, for your information, a copy of the Forest Products Commission's (FPC) report on the use of machine harvesting and the impacts on soil disturbance (Attachment C).

Response to public submissions on the FMP mid-term audit

The Conservation Commission has worked with the Department of Environment and Conservation (DEC) and the FPC to document the issues identified in the public submissions.

A set of criteria were applied to categorise the issues and to identify the context for a response (criteria are provided at Appendix A of the response to submissions report). During the course of this process it was acknowledged that a substantial number of issues related to the framework of the FMP, and as such, were considered by the Conservation Commission to be beyond the scope of the audit. However, a significant effort was made to respond to these issues and provide information to the EPA as they are clearly important to the community.

For the purpose of informing the EPA on the Conservation Commission's approach to the response for each issue, the criteria column has been provided in the report. The Conservation Commission has also provided detail on individual submission numbers for reference, as well as the total number of submissions addressing each theme (the list of submissions and their corresponding reference number is provided at Appendix B of the report).

The Conservation Commission has made every effort to identify and appropriately address all issues raised in the public submissions. However, due to the large number of submissions received and the sometimes implied, rather than explicit information they

contain, the Conservation Commission recognise the possibility that some issues may not have been captured and some submitters may not have been recorded next to an issue.

The Conservation Commission has provided its response to DEC and FPC and understands that these agencies may provide additional information and offer a differing opinion from the Conservation Commission to a number of the issues.

Supplemental advice reports on realised and forecast yields of jarrah during 2004-2007 and karri other bole volume production during 2004-2007.

The Conservation Commission has received and reviewed the supplementary advice that it requested from DEC and the FPC as part of the FMP mid-term audit of performance.

The Conservation Commission has considered the information presented in the supplemental advice, along with the information presented in the mid-term audit, and has prepared a report with advice for the EPA's consideration.

In the case of the realised and forecast yields of jarrah, the Conservation Commission advises that it is not necessary to adjust the sustained yields for jarrah sawlogs at this point in time, but also advises that key performance indicator (KPI) 11 should be amended to allow for annual reporting on the yields.

In the case of karri other bole volume production, the Conservation Commission presents the EPA with, what the Conservation Commission considers, are the three options available for karri harvesting and compliance (or non-compliance) with the FMP.

Use of machine harvesting and impacts on soil disturbance

The Conservation Commission noted in the FMP mid-term audit its concern that the trend to increased use of machinery for timber harvesting will lead to further shortfalls in the area of soil disturbance as identified in KPI 21. The Conservation Commission requested the FPC to provide a response to this issue. The Conservation Commission will respond to the KPI shortfall as a separate process to the FMP mid-term audit, however, the FPC's report is attached for your information.

If you have any questions or require further clarification on the response to public submissions or the supplemental advice reports, please don't hesitate to contact Gordon Graham, A/Director on 9389 1766.

Yours sincerely



Pat Barblett
A/CHAIR

28 October 2009
Att



Conservation Commission
of Western Australia



Forest Management Plan 2004-2013

Mid-term Audit of Performance Report

Response to public submissions

Summary of issues raised during public submission period | March to June 2009

In December 2008 the Conservation Commission, as the nominated proponent and as required by Ministerial Condition 2-2, submitted to the Environmental Protection Authority (EPA) the mid-term audit of performance report on the *Forest Management Plan 2004-2013* (FMP). In March 2009 the EPA released the audit for public comment for a 3 month period. Close to 90 submissions were received.

The Conservation Commission, the Department of Environment and Conservation (the Department) and the Forest Products Commission thank the EPA for the opportunity to respond to the issues raised in the course of the public submission period.

It is important to note that the intent of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and consider the extent to which all key performance targets has been achieved. The process was not intended to review or significantly alter the management principles of the FMP. The audit findings have identified areas for improvement and indicated the need to respond to a changing climate as a public policy issue, while acknowledging that the FMP provides a sound framework for managing the south-west forest.

It is evident from the number and content of the submissions that protection of biodiversity, heritage values and the ecological health and integrity of Western Australia's south-west forest continues to be important to the community. Many of the submissions questioned the continuation of a native forest timber industry especially in the context of a changing climate. A selection of submissions also queried the balance in management efforts across the range of forest values, in particular productive capacity, biodiversity and water production. Response to climate change by government and the conservation agencies was a primary concern in many of the submissions.

Many submissions cited the findings of the Auditor General's report investigating the Department's protection and management of threatened species. The findings of the Auditor General's report go beyond the context of the audit and, as such, the Conservation Commission has not addressed the findings in this report.

The Conservation Commission has worked with the Department and the Forest Products Commission to document the issues identified in the public submissions. The Conservation Commission, the Department and the Forest Products Commission have made every effort to identify and appropriately address all issues raised in the public submissions. However, due to the large number of submissions received and the sometimes implied, rather than explicit information they contain, the agencies recognise the possibility that some issues may not have been captured.

Additionally, during the course of this process it was acknowledged that a substantial number of issues related to the framework of the FMP and, as such, were considered by the Conservation Commission to be beyond the scope of the audit. However, a significant effort was made to respond to these issues as they are clearly important to the community.

The Conservation Commission, the Department and the Forest Products Commission have each drafted their own response to the issues. The Conservation Commission recognise that the Department and the Forest Products Commission may provide additional information and offer a differing opinion to a number of the issues raised.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
General Comments				
1	1 (53)	The scope of the audit includes matters [on climate change] which are outside the implementation of the FMP.	C	<p>The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.</p> <p>In the case of climate change the Conservation Commission was mindful of the significant changes that occurred in climate change science and policy since 2004 and as such the criterion was given greater consideration in the mid-term audit.</p>
2	2 (53, 87)	The audit does not give adequate recognition to the significant progress that has been made by the Department and the Forest Products Commission in implementing the forest management practices laid out in the FMP.	C	<p>The audit provides information on the implementation of actions by the Department and the Forest Products Commission. The information is provided in the sections on 'Progress with implementation of actions proposed'.</p> <p>The Conservation Commission acknowledges the positive outcomes in a range of areas. The Conservation Commission recognises the progress that has been made by the Department and the Forest Products Commission in implementing forest management practices laid out in the FMP.</p>
3	1 (46)	The focus of the audit should have been on assessing the effectiveness of the FMP.	C	<p>The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.</p>
4	1 (53)	The audits assessment and evaluation places undue emphasis on the precautionary principle to guide its recommendations.	C	<p>The Conservation Commission has sought, and continues to seek, an approach to forest management that respects intergenerational equity, biological diversity and ecological integrity while providing for as full a range of forest values and uses as reasonable. Where the Conservation Commission has concluded that there are threats of serious or irreversible damage, it has adopted a precautionary position.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
5	1 (53)	The audit has little emphasis on social and economic aspects of ecologically sustainable forest management.	C	The audit reflects the structure and the required performance criteria of the FMP. The section in the audit on Socio-economic benefits identifies the progress with implementation of actions under this criterion and provides reports on the two key performance indicators (KPI); KPI 26 Number, range and use of recreation/tourism activities available by proposed land category in the plan area and KPI 27 Basic raw materials. The audit reflects the structure and the required performance criteria of the FMP.
6	1 (35)	Recommendations in the audit do not reflect an appropriate balance of socio-economic and heritage values against other Montreal criteria.	C	The audit reflects the structure and the required performance criteria of the FMP.
110	1 (53)	Fundamental bias in audit – the audit infers that timber production represents a significant threat.	A	Audit does not infer that timber production represents a significant threat. The FMP has been assessed to meet ESFM principles and timber harvesting is not considered a threat to forest if managed within the principles of ESFM.
7	1 (53)	The audit does not provide a measure of performance of other forest users (other than FPC) or the Department.	C	The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved. The audit reports on the performance of the agencies that are responsible for implementing actions under the FMP, this includes the Department and other proponents.
8	1 (53)	The implementation of the FMP and forest management is well administered.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
9	1 (53)	At a time of restricted agency resources, recommendations in the audit should be subject to an independent analysis as to the cost/benefit/risk being addressed.	C	<p>Under section 19 of the <i>Conservation and Land Management Act 1984</i> (CALM Act), it is the function of the Conservation Commission to assess and audit the performance of the Department and the Forests Products Commission in carrying out and complying with the management plans.</p> <p>Under the FMP, the Conservation Commission is independent in its auditing function.</p> <p>Recommendations on climate change that go beyond what is required for the implementation of the FMP acknowledge the need for additional resources.</p>
10	2 (53, 87)	Recommendations proposed by the Conservation Commission are neither necessary nor cost effective methods of delivering desired outcomes.	D	<p>The Conservation Commission considers that all recommendations made in the audit are necessary.</p> <p>The majority of the recommendations provided in the audit reiterate the need to implement actions to achieve conformity with the FMP.</p>
16	2 (46, 87)	Recommendation for further resources for implementing the Plan are unrealistic.	D	<p>The Conservation Commission considered that it may be necessary for the Department, in consultation with the Conservation Commission to reconsider priorities and allocate resources accordingly.</p> <p>Given the resourcing constraints experienced in the implementation of the current plan, the Conservation Commission suggests that additional resources will be required for the preparation and implementation of the <i>next</i> forest management plan.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
11	2 (23, 24)	There is a need for independent assessment of the implementation of the FMP, independent monitoring of activities and independent verification of facts and figures.	C	<p>Under section 19 of the CALM Act, it is the function of the Conservation Commission to assess and audit the performance of the Department and the Forests Products Commission in carrying out and complying with the management plans.</p> <p>The Conservation Commission undertakes independent audits to assist it in assessing the extent to which management of land to which the plan applies is undertaken in accordance with the plan.</p> <p>The mid-term audit will be reviewed by the Environmental Protection Authority.</p> <p>It should be noted that in November 2000 legislation was enacted to provide for the separation of the commercial timber production functions of the Department from its conservation functions. The <i>Forest Products Act 2000</i> established the Forest Products Commission, which replaced the Department of Conservation and Land Management, as the forestry agency responsible for commercial forest activities.</p>
12	4 (35, 46, 53, 87)	The audit does not provide scientific or other evidence to support the arguments made by the Conservation Commission.	C	Views or arguments presented by the Conservation Commission are those of the Conservation Commission and are based on information that has been provided by the managing agencies.
13	2 (78, 76)	The expertise of the Conservation Commission in assessing forestry and/or fire management is questioned.	F	Outside the scope of the audit.
14	7 (74, 2, 3, 73, 80, 81, 83)	Generally agree with Conservation Commission's recommendations from the audit.	E	The establishment and functions of the Conservation Commission are determined by sections 18 and 19 of the CALM Act and the members are appointed by the Governor on the nomination of the Minister for the Environment. Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
15	2 (35, 46)	The results from FORESTCHECK and the Kingston study have not been taken into account in the audit.	C	<p>Not required.</p> <p>The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.</p> <p>Where information from FORESTCHECK relates to an action it has been considered in the audit.</p> <p>Information on FORESTCHECK can be found at http://www.dec.wa.gov.au/science-and-research/landscape-research/forestcheck-index-page.html</p>
17	1 (7)	Share the concern of the Conservation Commission with regard to multiple use outcomes expected from current forest management practices.	E	<p>Where data from FORESTCHECK will improve future reporting on KPIs, the Department in consultation with the Conservation Commission will consider reviewing the relevant KPI protocols.</p> <p>The Conservation Commission's concern related to Objective 21 (Water). The Conservation Commission is of the view that the objective for water may be overly ambitious with regard to the desire to protect the ecological integrity and quality of streams, wetlands and their associated vegetation and increase the flow of water.</p>
18	41 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 32,33)	Government should cease financially supporting the native forest timber industry.	F	<p>Outside the scope of the audit.</p> <p>The FMP provides for a native forest timber industry.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
19	63 (1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 24, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 71, 73, 74, 75, 80, 81, 83, 84)	The native forest timber industry is not ecologically sustainable or economically viable.	F	Outside the scope of the audit. Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. The plan has been assessed by the Environmental Protection Authority under the <i>Environmental Protection Act 1986</i> (EP Act).
20	3 (20, 23, 31)	Call for a moratorium on disturbance activities.	F	Outside the scope of the audit. The FMP provides for multiple-use of State forest and timber reserves. State forest and timber reserves are reserved for the purposes of conservation, recreation, timber production on a sustained yield basis and water catchment protection.
21	20 (1, 2, 3, 9, 12, 24, 29, 31, 36, 37, 43, 51, 72, 73, 74, 75, 80, 81, 83, 86)	Forest management is not ecologically sustainable.	G	Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. The plan has been assessed by the Environmental Protection Authority under the EP Act.
22	9 (2, 3, 24, 37, 73, 74, 80, 81, 83)	The five principles of ecologically sustainable forest management are not being complied with.	G	Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. Audit provides no evidence that the five principles of ESFM are not being complied with.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
23	3 (46, 53, 78)	<p>The audit gives excessive attention to timber production and less attention given to threats faced by conservation reserve system.</p> <p>The forest is being conservatively managed with respect to the reservation system (large number of areas where timber harvesting is not permitted).</p>	C	The audit reflects the structure and required performance criteria of the FMP.
24	53 (1, 2, 3, 4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 31, 32, 33, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 72, 73, 74, 80, 81, 83)	The forest is being managed for production values and not for biodiversity, clean air and water, cultural heritage, tourism, recreation and carbon storage.	A	<p>The forest is managed for a range of values, including productive capacity, biodiversity, soil and water, ecosystem health and vitality, natural and cultural values and socio-economic benefits. The audit provides information on each of the actions that guide the management of these values under the FMP.</p> <p>Under the CALM Act and the FMP, State forest and timber reserves are reserved and managed for the purposes of conservation, recreation, timber production on a sustained yield basis and water catchment protection.</p>
25	11 (2, 3, 9, 25, 26, 32, 33, 73, 74, 80, 83)	Propose agroforestry as an alternative to native forest timber harvesting.	F	Outside the scope of the audit.
26	13 (2, 3, 9, 12, 37, 43, 70, 73, 74, 80, 81, 83, 84)	Propose plantations as an alternative to native forest timber industry.	F	<p>The FMP provides for a native forest timber industry.</p> <p>Outside the scope of the audit.</p> <p>The FMP provides for a native forest timber industry.</p>
27	1 (23)	Support the principles of ecologically sustainable forest management.	E	Noted.
	2 (2, 3, 23, 73, 74, 80)	Support implementing the precautionary principle.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
Biological diversity				
28	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	<p>The sole response to fauna decline cannot be 'more research'.</p> <p>The Department should provide evidence that decline is not due to management actions.</p>	E	<p>Noted.</p> <p>The Conservation Commission expects that the responses for shortfalls relating to fauna give serious consideration to going beyond a call for further research and monitoring and, where practicable, the Conservation Commission expects the Department to provide a proposed management response. Where the Department has indicated that a shortfall is unrelated to management activities, the Conservation Commission expect that such a conclusion will be substantiated.</p>
29	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 74, 73, 80, 81, 83)	<p>Reports on fauna declines should be produced by qualified, experienced and independent people.</p>	A	<p>As per the protocol for KPIs addressing biodiversity (which can be viewed at http://www.dec.wa.gov.au/forests/forest-management-planning/forest-management-plan-2004-2013/fmp-2004-2013-key-performance-indicators.html), the Department's Nature Conservation Division in consultation with Science Division and Regional Services Division, are responsible for providing information for these KPIs.</p> <p>The Conservation Commission acknowledges the qualifications and expertise of the Department's staff.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
30	14 (2, 3, 9, 12, 20, 31, 43, 68, 70, 73, 74, 80, 81, 83)	Concern that there is a lack of urgency in addressing species decline.	I	<p>The FMP provides a range of actions, measures and timeframes for addressing the protection of biodiversity.</p> <p>As per the protocols for KPIs addressing biodiversity, the Conservation Commission, in consultation with the Department, will develop a response to report findings for those species that have been moved to a higher category of threat. The Conservation Commission are considering the report on the brush-tailed phascogale and are waiting for reports on the three other species identified in the audit (woylie, red-tailed black cockatoo and the Battaling chuditch population).</p>
31	6 (3, 29, 31, 37, 68, 86)	Concern for threatened species (flora and/or fauna) declines.	G	<p>The FMP provides a range of actions and measures for the protection of biodiversity.</p> <p>As per the protocols for KPIs addressing biodiversity, the Conservation Commission, in consultation with the Department, will develop a response to report findings for those species that have been moved to a higher category of threat. The Conservation Commission are considering the report on the brush-tailed phascogale and are waiting for the reports on the three other species identified in the audit (woylie, red-tailed black cockatoo and the Battaling chuditch population).</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
32	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Concern for implementation of Fauna Distribution Information System (FDIS). Concern that measures to protect fauna do not trigger effective management responses.	D	<p>The Conservation Commission noted in the audit that it would work with the Forest Products Commission and the Department to address concerns about whether FDIS has the capacity to generate an effective management response.</p> <p>The Conservation Commission has determined, from the independent expert report and through consultation with the Department that FDIS, in principle, would lead to greatly enhanced decision making processes in the management of the forest and the protection of its nature conservation values. The Conservation Commission also considered that the effective implementation of FDIS is an operational matter for the Department to consider, and recommended that the points raised by the independent experts be considered in that process.</p>
33	1 (35)	Need a holistic approach to threatened species management.	G	<p>The FMP provides a range of actions and measures for the protection of biodiversity; including the formal and informal reserve system, provisions for diversity in vegetation structure and protection of specific habitat elements, fauna habitat zones and the FORESTCHECK monitoring program.</p> <p>Measures are implemented at three scales of management; whole of forest, landscape and operational.</p>
34	1 (75)	Pre-logging surveys should be required to generate baseline data collection for biodiversity information.	F	<p>Outside the scope of the audit.</p> <p>Biodiversity information is collected via a number of research and monitoring programs including FORESTCHECK, pre-disturbance flora surveys and other species- or area-specific studies.</p>
35	1 (70)	The Forest Products Commission should not be the sole custodian of the Fauna Distribution Information System (FDIS).	A	<p>Inaccurate.</p> <p>The Forest Products Commission is not a custodian of FDIS.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
36	6 (2, 9, 21, 62, 71, 75)	Concern that old-growth forest is being logged. (agencies apply a restrictive definition of old-growth; "the number of stumps per hectare" was the only criterion used in WA to define old-growth. Forest with over two stumps per hectare is not classed as 'old-growth regardless of the quality of the forest, or the size and age of the trees).	C	All old-growth forest is afforded protection under the FMP. The audit identified two incidents relating to old-growth forest. Neither incident resulted in the loss of old-growth area. The criteria for old-growth for inclusion in the Department's corporate database is: <i>Areas greater than two hectares of ecologically mature forest, where the overstorey is in a late mature to senescent growth stage, and where the effects of disturbance (e.g. dieback, timber production, grazing) are either absent or now negligible.</i> The requirements under the FMP are that proposed operational target areas must be checked against Departmental records for the presence of areas that meet the criteria for old-growth forest that have not been identified in the corporate database. The areas adjacent to any old-growth forest patches identified in the corporate database will be inspected in the field. If the boundaries are found to be more extensive than the database indicates, the true boundaries of the area that meets the criteria for old-growth forest reserve are to be identified and the Department's corporate database amended accordingly. In 2005 the Conservation Commission, in consultation with the Department and key stakeholders, produced and published "Assessment Criteria and Process for the Conservation Commission Review of Old-growth Amendments". The document includes the process for public nominations for review of potential old-growth forest areas on indicative timber harvest plans. Outside the scope of the audit.
37	3 (21, 35, 75)	Concern about the process for identifying old growth.	C	
38	1 (53)	Remove areas of non old-growth forest previously mapped as old-growth from informal reserves.	F	
39	1 (75)	Concern that Forest Products Commission are cutting down trees that contain habitat for wildlife (hollows).		The FMP provides a range of actions and measures for the protection of biodiversity. Appendix 5 of the FMP and the Silvicultural guidelines outline habitat retention requirements.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
40	2 (23, 51)	Protect and conserve Western Australia's native forests and woodlands.	G	<p>Outside the scope of the audit.</p> <p>The plan implements the <i>Protecting our old-growth forests</i> policy for 30 new national parks and includes areas identified through the high conservation value study. Reservation targets for forest ecosystems are generally achieved and in a lot of cases well exceeded except for the ecosystems: Jarrah Rates tingle, Jarrah Red tingle, karri Rates tingle, Bullish and Yate and Darling Scarp. Protection of these ecosystems on private land is required to meet the targets.</p>
41	7 (2, 3, 73, 74, 80, 81, 83)	Call for fauna habitat zones to be linked to create corridors.	G	<p>Outside the scope of the audit.</p> <p>In determining the location of indicative fauna habitat zones, the Department has considered contiguous areas that provide enhanced linkage to other areas of lesser disturbed forest as preferable.</p> <p>The principal purpose of fauna habitat zones is to provide a strategy to meet the plan's objective of ensuring that biodiversity recovers between one rotation and the next. The fauna habitat zones fulfil this purpose by providing a sufficiently extensive network of areas excluded from timber harvesting.</p>
42	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Support an increase in the size of fauna habitat zones to more than 200ha to provide additional protection for fauna values and biodiversity.	E	<p>Noted.</p> <p>The Conservation Commission and the Department agree that the Guidelines for the Selection of Fauna Habitat Zones will address the size requirements for fauna habitat zones.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
43	8 (2, 3, 73, 74, 75, 80, 81, 83)	Concern about the weaknesses in the location, design and effective ecological functions of fauna habitat zones.	F	Outside the scope of the audit. The principal purpose of fauna habitat zones is to provide a strategy to meet the plan's objective of ensuring that biodiversity recovers between one rotation and the next. The zones fulfil this purpose by providing a sufficiently extensive network of areas excluded from timber harvesting in the mid-term within State forest and timber reserves. The zones are intended to maintain both fauna populations within themselves and to provide a source for the recolonisation of nearby areas after timber harvesting.
44	2 (46, 53)	The Department to evaluate ecological benefits of fauna habitat zones (in light of data made available in the FORESTCHECK Progress Report 2007-2008). Area of forest in reserve is not sufficient.	F	Outside the scope of the audit.
45	1 (75)		F	Outside the scope of the audit. The plan implements the <i>Protecting our old-growth forests</i> policy for 30 new national parks and includes areas identified through the high conservation value study. Reservation targets for forest ecosystems are generally achieved and in a lot of cases well exceeded except for the ecosystems: Jarrah Rates tingle, Jarrah Red tingle, karri Rates tingle, Bullish and Yate and Darling Scarp. Protection of these ecosystems on private land is required to meet the targets. The mid-term audit highlights the positive outcomes with respect to implementation of reserve proposals under the <i>Protecting our old-growth forests</i> policy.
46	1 (70)	Support the review of the causes of delays in implementation of reserves.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
Productive capacity				
47	56 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 72, 73, 75, 85, 86)	All timber harvesting of native forest and woodlands should stop.	F	<p>Outside the scope of the audit.</p> <p>The FMP provides for a native forest timber industry.</p> <p>Note: all areas mapped as jarrah woodland (including those that had been previously cut-over) have been set aside from timber production as informal reserves under the FMP.</p>
48	12 (2, 3, 9, 25, 32, 33, 73, 74, 80, 81, 83, 84)	Phase out native forest timber harvesting (by end of plan).	F	Outside the scope of the audit.
49	12 (2, 3, 9, 32, 33, 70, 73, 74, 75, 80, 81, 83)	High conservation areas (Warrup, Coonan, Meribup) to be excluded from logging immediately.	F	<p>Outside the scope of the audit.</p> <p>Areas considered to be of high conservation value were assessed during the development of the FMP. The outcome, implemented through the FMP, was that areas of forest ecosystems that met the criteria for high conservation value were recommended for addition to the conservation estate, with other areas remaining as State forest and available for timber harvesting. The report <i>Review of High Conservation Values in Western Australia's South-West Forests</i> is available on the Conservation Commission website.</p> <p>Outside the scope of the audit.</p>
50	1 (88)	Low rainfall areas (as defined in the submission paper) to be excluded from logging immediately.	F	Outside the scope of the audit.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
51	48 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	All logs should be counted towards the allowable cut (killed trees left standing, logs left on ground, piled on landings, firewood, sold or not).	A	<p>Refer information for KPI 5 in the audit.</p> <p>All log products recovered and sold from State forest and timber reserves are tracked for accounting purposes in a computer database known as the Logging Operations Information System (LOIS). This includes log products from mining operations, road and infrastructure clearing.</p> <p>LOIS provides an accurate basis for monitoring sawlog removals but generally provides an underestimate of the total volume of non-sawlog products made available during harvesting if the material produced is not sold. The utilisation monitoring plots (used for reporting on KPI 11) can be used to provide a sample estimate of that portion of the non-sawlog resource made available but not sold or removed.</p>
52	1 (75)	Clearfelling of karri is unsustainable.	A	<p>The audit does not indicate that clearfelling of karri is unsustainable.</p> <p>Action 11.1 and KPI 5 in the audit provide information on the removal of karri sawlog and other bole volume products compared to the sustained yields.</p>
53	48 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	The allowable volume of karri other bole volume must not be increased.	I	<p>The audit indicates that there is a potential inconsistency between the plan's requirements for karri thinning and the allowed volumes of karri other bole volume.</p> <p>The Conservation Commission will consider the Supplemental advice provided by the Department and will report to the Environmental Protection Authority.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
54	3 (35, 53, 87)	Support a review of the karri other bole volume.	E	Noted.
55	11 (2, 3, 9, 12, 29, 36, 37, 43, 51, 70, 73)	The sustained yield under the FMP is not sustainable.	A	<p>The CALM Act requires that timber production in native forests be conducted on a sustained yield basis. The methodology and data used in the sustained yield calculations for the plan were independently reviewed by a panel of experts during the development of the FMP (April 2001 to June 2003; Ferguson <i>et al</i> 2001a, 2001b, 2003)¹.</p> <p>The Panel concluded (Ferguson <i>et al</i> 2001b, page 1): <i>The panel is satisfied that it has considered and addressed the issues repeatedly raised by members of the public and which are said to impact on the calculation of sustained yield. The Panel believes that, in principle, the simulation model uses appropriate data, assumptions and methods in calculating sustained yield.</i></p> <p>Action 11.1 and KPI 5in the audit provide information on sustained yields.</p>

¹ Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001a). *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 of Western Australia, Perth.

Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001b). *Calculating the Sustained Yield for the Draft Forest Management Plan: A Preliminary Stage 2 Report.* Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Ferguson, I., Adams, M., Bradshaw, J., Davey, S., McCormack, R. and Young, J. (2003). *Calculating Sustained Yield for the Forest Management Plan (2004-2013).* Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
56	10 (35, 46)	Sustained yield for jarrah sawlogs should not be adjusted.	I	Noted. The Conservation Commission will consider the Supplemental advice provided by the Department and will report to the Environmental Protection Authority. Outside the scope of the audit.
57	8 (2, 3, 9, 12, 29, 43, 70, 73)	No confidence in the Department's data or modeling to estimate the likely yield of timber from our native forests.	F	The Conservation Commission is satisfied with the Department's data modeling to estimate native forest sustained timber yields. The CALM Act requires that timber production in native forests be conducted on a sustained yield basis. The methodology and data used in the sustained yield calculations for the plan were independently reviewed by a panel of experts during the development of the FMP (April 2001 to June 2003; Ferguson <i>et al</i> 2001a, 2001b, 2003) ² . The Panel concluded (Ferguson <i>et al</i> 2001b, page 1): <i>The panel is satisfied that it has considered and addressed the issues repeatedly raised by members of the public and which are said to impact on the calculation of sustained yield. The Panel believes that, in principle, the simulation model uses appropriate data, assumptions and methods in calculating sustained yield.</i>

² Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001a). *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 of Western Australia, Perth.

Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001b). *Calculating the Sustained Yield for the Draft Forest Management Plan: A Preliminary Stage 2 Report.* Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Ferguson, I., Adams, M., Bradshaw, J., Davey, S., McCormack, R. and Young, J. (2003). *Calculating Sustained Yield for the Forest Management Plan (2004-2013).* Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
58	7 (2, 3, 73, 74, 80, 81, 83)	Shortfalls identified in the Swan region indicate issues with: the sustained yield calculation assumptions; methodology of timber harvesting practices; and/or unsustainability of timber harvesting.	A	Factors giving rise to differences between realised and forecast jarrah sawlog yields during 2004-2007 are provided in the supplemental advice report prepared by the Department (available at www.conservation.wa.gov.au). These include: conservative assessment of sawlog volumes within trees at the first inventory measurement, growth in sawlog volume between the first inventory measurement and the second measurement, variation between modeled and actual treemarking and variation between the modelled and applied sawlog specifications.
59	1 (70)	Successful regeneration of the understorey species (present before logging) should be a criterion for the effectiveness of regeneration.	A	FORESTCHECK monitors understorey richness and abundance in the various silvicultural treatments of management jarrah forest (shelterwood, selective cut and gap release) and in uncut reference forest. FORESTCHECK also compares species richness, abundance and composition recorded within and between silvicultural treatment grids to those in uncut reference grids, and also compares results from plots over time. Data from FORESTCHECK can be viewed on the Department's website (www.dec.wa.gov.au). Successful regeneration of understorey species is a criterion for landing and snig track rehabilitation. Monitoring and success criteria for understorey regeneration are outlined in the silvicultural guidelines.
60	10 (2, 3, 9, 12, 43, 66, 68, 70, 73, 84)	Native forest material must be excluded from energy production materials.	F	Outside the scope of the audit.
61	7 (3, 23, 24, 29, 31, 37, 75)	Concern for damage to standing trees and understorey from machine harvesting.	C	The FMP and silvicultural guidelines provide for an acceptable level of disturbance to standing trees and understorey during harvesting activities. Appendix 5 of the FMP and the silvicultural guidelines outline measures to reduce the impact of silvicultural operations on flora diversity and abundance. The audit provides information on compliance monitoring of silvicultural standards. With respect to damage to crop trees, the audit did not identify this as a significant issue.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
62	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern that wildflower and seed picking is not monitored and it should be phased out.	A	The FMP provides for multiple-use of State forest and timber reserves. The Department's <i>Management of Commercial Harvesting of Protected Flora in Western Australia</i> outlines monitoring of the wildflower and seed picking industry. The Department also has an Operations manual for Management of the Flora Industry which covers policy, management, regional operations and research on the flora industry.
63	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern that forest management (timber harvesting and burning) has adverse effects on apiculture.	G	While the audit did not identify that forest management is having an adverse effect on apiculture it is acknowledged that disturbance activities can have adverse effects on apiculture. The planning checklist for disturbance activities includes measures to identify and manage apiary sites.
64	8 (2, 3, 9, 12, 29, 43, 70, 73)	Apiary sites should be progressively removed from the conservation estate.	F	Outside the scope of the audit.
65	1 (53)	Audit fails to identify area of forest requiring rehabilitation from mining.	F	Outside the scope of the audit. Reporting on areas requiring mining rehabilitation is not a requirement of the FMP.
66	8 (2, 3, 9, 12, 29, 43, 70, 73)	The figures for employment in each of native forest logging operations, processing and downstream manufacture should be made publicly available (KPI 13).	B	The protocol for KPI 13 is being developed. At the time of writing the audit efforts were made to address this KPI using information from the Australian Bureau of Statistics and the Australian Bureau of Agricultural and Resource Economics, however the information did not sufficiently address employment for native forest operations in Western Australia. Where information was available that addressed general timber industry employment statistics it did not cover the required reporting period.
67	1 (68)	Lack of guidelines for management of blackbutt.	A	The Jarrah silvicultural guidelines provide for the management of blackbutt.
68	1 (68)	Blackbutt should be included in old-growth forests.	A	Blackbutt is included old-growth forest if it meets the criteria. Blackbutt falls under the criteria for jarrah forest.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
69	1 (68)	There should be consistency between the FMP and the Forest Products Commission measurements of timber yields to avoid mistakes.	C	Refer to information on KPI 5 in the audit. Sustained yield is determined in units of volume and log deliveries are recorded in tones, therefore appropriate weight-volume conversion factors have been determined and are applied to the various products. The reconciliation of sustained yield and removals is undertaken on a volumetric basis.
Ecosystem health and vitality				
70	1 (72)	Section in audit dealing with ecosystem health is weak.	I	The audit reflects the structure and required performance criteria of the FMP.
71	2 (32, 33)	Concern with agencies inability to deal with increasing threats to forest ecological health.	G	<p>The scope of this issue is broad and difficult to address. The audit does not identify an inability to deal with increasing threats to forest ecological health.</p> <p>Objective 18 in the audit identifies findings with respect to weeds, pests and diseases.</p> <p>Objective 18: The Department maintains a coordinated approach to addressing the management of weeds, pests and diseases across land tenures and continues to implement appropriate management practices and control programs.</p> <p>The Department currently has an informal forest health monitoring system in place and forest health research is undertaken. Surveillance and mapping of <i>Phytophthora</i> dieback disease has been one of the longest running forest health projects. The Department is collaborating in research to investigate and monitor the cause of decline in tuart and wandoo forests and woodlands.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
72	43 (4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 84)	All burning in native forest and woodlands should stop.	F	Outside the scope of the audit.
73	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	Biodiversity is not given adequate weight as an objective for fire management.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
74	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	Better management of prescribed burning.	C	<p>The Conservation Commission supports the Department's management of prescribed burning.</p> <p>The Conservation Commission generally supports the thrust of the fire management policy. The Conservation Commission would like to see further refinement in the implementation of the policy.</p>
75	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	The principles of ESFM are being ignored in the prescribed burning program.	A	<p>The audit does not indicate that the principles of ecologically sustainable forest management are being ignored in the prescribed burning program.</p> <p>The Conservation Commission generally supports the thrust of the fire management policy. The Conservation Commission would like to see further refinement in the implementation of the policy.</p>
76	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern with the amount and frequency of burning in the conservation estate.	G	Outside the scope of the audit.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
77	2 (46, 87)	Cannot agree with the conclusion that current fire management policy does not adequately account for biodiversity outcomes.	D	<p>The Conservation Commission generally supports the thrust of the fire management policy and is aware that there is evidence that biodiversity is being addressed in fire planning. The Conservation Commission would like to see further refinement in the implementation of the policy.</p> <p>The Conservation Commission would like to see a clear and demonstrated link between special biodiversity requirements and the details of individual fire prescriptions become a routine outcome of fire management planning.</p>
78	2 (35, 76)	Concern that the approach to plan for biodiversity as a primary objective in prescribed burning is counterproductive and increases the risk to both biological and social values (fails to afford any priority to the protection of human lives).	C	<p>The Conservation Commission has not recommended that biodiversity become the primary objective for fire management. The Conservation Commission is concerned that biodiversity is given inadequate weight as an objective for fire management and has not yet been convinced that a clear and demonstrated link between special biodiversity requirements and the details of individual fire prescriptions has become a routine outcome of fire management planning.</p>
79	49 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	Agree that post-burn monitoring and review must become a routine outcome of prescribed burns.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
80	41 (3, 4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	Conservation Commission must be more involved in monitoring and auditing the Department's fire management and have the resources to do so.	I	The Conservation Commission is satisfied with its level of auditing under the FMP.
81	1 (76)	The Department's fire management should be independently audited.	F	<p>Outside the scope of the audit.</p> <p>The Conservation Commission has undertaken two independent audits of the Department's fire management; Master Burn Plan Assessment and Prescribed Burning. Reports are available on the Conservation Commission's website (www.conservation.wa.gov.au).</p> <p>A number of independent reviews on fire management have been published since 2004 including the Environmental Protection Authority's Fire Review Oct 2004 on the Swan, South West and Warren Regions.</p>
82	1 (46)	Support recommendations that streamline the prescribed burn program.	E	Noted.
83	3 (35, 46, 76)	Do not support recommendations that hinder prescribed burn process.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
84	8 (2, 3, 9, 12, 29, 43, 70, 73)	KPI for fire is not meaningful in addressing biodiversity conservation (flora, fauna, ecosystems and ecosystem processes).	C	<p>Refer to information on KPI 16 in the audit.</p> <p>The Department applies prescribed fire to achieve a 'time since fire' frequency distribution. This approach ensures a fire induced diversity of the vegetation across the landscape. Diversity in vegetation across the landscape ensures a diversity of habitats that facilitates diversity and persistence of the biota dependent on these habitats.</p> <p>The objective of KPI 16 is to assess achievement of targets in relation to the management of fire by providing information on the temporal diversity of 'time since fire' within each Landscape Conservation Unit.</p>
86	15 (2, 3, 9, 12, 29, 35, 36, 37, 43, 51, 68, 69, 70, 73, 86)	Concern for dieback issues.	E	<p>Noted.</p> <p>The Conservation Commission is aware that the issues surrounding <i>Phytophthora</i> dieback management requires a whole-of-government approach to be applied across all lands. The Conservation Commission is undertaking a performance assessment of <i>Phytophthora</i> dieback management on vested lands.</p> <p>The Department and the Forest Products Commission conduct disturbance activities with regard to the Management of <i>Phytophthora</i> and Disease Caused By It policy and in accordance with Volume 1 of <i>Phytophthora cinnamomi</i> and Disease Caused By It Guidelines.</p> <p>Noted.</p>
87	8 (2, 3, 9, 12, 29, 43, 70, 73)	Support Conservation Commission's recommendation that dieback requires a whole-of-government approach across all lands.	E	Noted.
88	1 (75)	Concern for salinity impacts from timber harvesting.	G	<p>Outside the scope of the audit.</p> <p>The impact of timber harvesting on salinity has been the subject of significant research and findings from this research has been included in current silvicultural guidelines.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
89	2 (3, 29, 75)	Concern with tree health.	G	<p>The scope of this issue is broad and difficult to address. Implementation of actions relating to dieback have been addressed in the audit.</p> <p>Tree health is being addressed by a range of groups and organisations including: the Department, the Forest Products Commission, Centre for Phytophthora Science and Management, Tuart Health Research Group, Wandoo Recovery Group and the State Centre for Climate Change, Woodland & Forest Health.</p>
90	1 (75)	Concern with plantation wildings in native forest.	F	<p>This issue was not addressed in the audit.</p> <p>Operational.</p>
91	8 (2, 3, 9, 12, 29, 43, 70, 73)	There needs to be greatly increased funding and higher priority given to weed, pest and disease eradication and control (especially <i>Pythophthora</i> dieback).	I	<p>Noted.</p> <p>Refer to information on Action 18.4 in the audit.</p> <p>The Department continues to implement appropriate weed, pest and disease management practices and control programs.</p> <p>The Department's annual report provides details on funding and control programs implemented across Departmental-managed land, including land managed under the FMP.</p>
92	1 (68)	Research is inadequate to fully understand the effects of fire on the forest ecosystem.	F	<p>Outside the scope of the audit.</p> <p>A significant amount of research has been undertaken to address the effects of fire on the forest ecosystem. Fire and ecosystem health is a research priority under the Science Division's Landscape Conservation program. The range of research activities are listed and briefly described in the <i>Science Division's Research Activity report</i> which can be viewed online at the Department's website.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
Soil and water				
93	7 (3, 23, 24, 29, 31, 37, 75)	Concern with machine harvesting impacts on soil.	D	<p>Noted.</p> <p>The Conservation Commission has received supplementary advice from the Forest Products Commission on the use of machine harvesting and soil disturbance. The Conservation Commission will consider this information in addressing the shortfall for KPI 21. The Forest Products Commission's report has been provided to the Environmental Protection Authority.</p> <p>The Conservation Commission notes that current management practices under the FMP to reduce unnecessary soil disturbance have evolved on the basis of detailed field observations and improved knowledge and research which has quantified some specific impacts of timber harvesting on the soils of the jarrah and karri forests. All harvesting operations are monitored for soil disturbance according to the requirements of the <i>Interim Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests</i> DEC SFM Manual No1 2007.</p>
94	10 (2, 3, 9, 12, 23, 29, 37, 43, 70, 75)	The use of machine harvesters should be suspended until the environmental impacts are assessed.	I	<p>The FMP and silvicultural guidelines provide for an acceptable level of disturbance during harvesting activities.</p> <p>Timber harvesting operations are monitored to assess levels of disturbance with the intention of addressing environmental impacts before they go beyond allowable limits.</p> <p>Outside the scope of the audit.</p>
95	1 (46)	The current application of the Trafficability Index is inconsistent.	I	

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
96	3 (3, 23, 29, 37)	Concern with increased machine access during moist soil conditions (with respect to increased spread of <i>Phytophthora</i> dieback).	E	Noted. Increased access was conditional on an increased requirement to conduct monitoring and surveillance. Access during moist soil conditions is depending on soil type and, with the exception of karri thinning operation, is now almost entirely focused on upland gravels and sands. The Conservation Commission considers that there is enough flexibility in the current moist soils approval system for the Department and the Forest Products Commission to work through the soil and hygiene management issue.
97	9 (2, 3, 9, 12, 29, 43, 70, 73, 77)	Support the recommendation for a review of water production from forested areas.	E	The Department has put in place a process to improve the planning and approval of the soil and hygiene management issue. This process will be reviewed over the next two years.
98	1 (53)	Do not support the view that Objective 21 may be overly ambitious.	E	Noted.
99	7 (2, 3, 9, 12, 43, 70, 73)	Increase stream buffers.	F	Outside the scope of the audit.
100	3 (36, 37, 51)	Support initiatives outlined in the Soil and water chapter of the audit report.	E	Refer to information on Action 33.1 in the audit. Noted.
Global carbon cycles				
101	17 (2, 3, 7, 9, 12, 31, 35, 36, 43, 51, 70, 73, 74, 77, 80, 81, 83)	Support the recommendation for an independent taskforce to assess forest management under a changing climate.	E	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
102	3 (53, 78, 87)	Does not support recommendation for a taskforce to address forest management under a changing climate.	E	Noted.
103	3 (46, 53, 87)	Support for a proper scientific study to amass information for preparation of next plan.	E	Noted.
116	1 (7)	Supports the Conservation Commission's recommendations for a whole-of-government approach to setting up an independent task force and agrees that urgent responses need to be included within the 2013 scope of the current FMP (with respect to water supply).	E	The Conservation Commission notes that the issue of water supply would be addressed as part of the independent expert review (recommended as an outcome of the audit).
104	8 (2, 3, 7, 9, 12, 43, 70, 73)	Suggestions for taskforce representation; terms of reference.	F	Outside the scope of the audit.
105	39 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	Recommendations of the independent taskforce must include binding timelines and an understanding that there will be real consequences for non-compliance.	F	Outside the scope of the audit.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
106	1 (35)	Concerned that terms of reference for taskforce suggest that timber harvesting and prescribed burning present threats to the forest.	A	<p>The terms of reference do not suggest that timber harvesting and prescribed burning present threats to the forest.</p> <p>The Conservation Commission noted a concern for the health and vitality of the forest ecosystems due to the cumulative threats of weed and pest incursions, the continuing spread of dieback, disturbances cause by prescribed fire, wildfire and timber harvesting combined with the impacts of climate change.</p> <p>The reference to 'threats' may have been taken out of context. The Conservation Commission was referring to the threats of weed and pest incursions.</p>
107	40 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68)	An immediate moratorium on all logging and burning needs to be put in place to protect all areas of the forest that are acknowledged as particularly vulnerable to the effects of climate change.	F	<p>The FMP has been assessed to meet ESFM principles and timber harvesting and burning are not considered threats to the forest if managed within the principles of ESFM.</p> <p>The Conservation Commission is of the view that should the independent expert review (recommended as an outcome of the audit) identify issues requiring an immediate response to avoid future opportunities being lost, then these measures should be implemented from the end of 2009.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
108	49 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73, 88)	Logging in eastern jarrah forest should be stopped immediately.	F	The Conservation Commission has considered the need to change forest management practices in advance of the adoption of the next FMP. The Conservation Commission believes that should the independent expert review (recommended as part of the audit) identify issues requiring an immediate response to avoid future opportunities being lost, then these measures should be implemented from the end of 2009.
109	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Concern for regeneration success.	E	Noted.
111	1 (77)	Supports Conservation Commission view that an urgent review of the quantity and quality of water use from forests under a drying climate is required.	E	Noted.
112	2 (7,77)	It is reasonable for forests to be managed to maintain or enhance water supply in a drying climate.	E	Noted.
113	3 (36, 37, 51)	Water extraction and drying climate is detrimental to the forest.	G	The scope of this issue is broad and difficult to address. The audit does not identify that water extraction is detrimental to the forest. In the audit findings the Conservation Commission noted its concern that the objective for water may be overly ambitious with regard to the desire to protect the ecological integrity and quality of streams, wetlands and their associated vegetation and increase the flow of water.
114	1 (88)	Concerned that major changes in annual rainfall volumes and distribution have not been factored into past and current management.		The Department to provide response

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
115	9 (2, 3, 9, 12, 43, 51, 70, 73, 88)	Forest management documents should be amended to reflect changed isohyets (isohyet information provided as part of the submission).		The Department to provide response
117	1 (77)	Management of the northern Jarrah forest in a drying climate has not been given enough importance in the audit.	D	Noted. The Conservation Commission notes that this issue would be addressed as part of the independent expert review (recommended as an outcome of the audit).
118	39 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	The Conservation Commission has failed to make a single recommendation to immediately change any existing forest management practices.	I	The audit did not provide any evidence to suggest it would be necessary to immediately change any existing forest management practices. The Conservation Commission has, however, requested further information on a number of issues of concern.
119	7 (2, 3, 9, 12, 43, 70, 73)	Conservation Commissions recommendations are not commensurate with the threats posed by climate change.	I	The Conservation Commission is of the view that the recommendations made in the audit are commensurate with the threats posed by climate change.
120	7 (2, 3, 9, 12, 43, 70, 73)	Audit does not address the contribution to greenhouse gas emissions from timber harvesting and burning.	F	Outside the scope of the audit.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
121	58 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 31, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73, 74, 75, 80, 81, 83, 86)	Carbon accounting calculations for WA native forests should be undertaken (acknowledge carbon stores in our native forest).	I	Noted. The Department and the Forest Products Commission identified in the audit, that continued work on the impacts of climate change needs to be cognisant of the improved capacity to model carbon balance of forests at a regional level.
122	8 (2, 3, 46, 73, 74, 80, 81, 83)	FMP acknowledges the importance of seeking to sustain the contribution of the forest to global carbon cycles but the Audit provides scant detail concerning operational applications of this important matter in the first five years of the plan.	A	The audit provides information on management actions under the FMP that seek to sustain the contribution of the forest to global carbon cycles including; increasing carbon accumulation in forests by rehabilitating degraded or harvested forest areas (e.g. Actions 10.3, 15.1, 15.3, 15.4, 28.1, 29.4); seeking to reduce the permanent loss of forests areas as a result of development and seeking the replacement of forest areas permanently lost to development (e.g. Actions 10.1, 28.1) and employing appropriate forest harvesting practices to protect vegetation and soil carbon (e.g. Actions 11.6, 20.1, 20.3, 20.4, 20.5).

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
123	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	The Conservation Commission recommended the Department give 'greater weight' to climate change whenever it makes management decisions but there is a lack of clarity about what 'greater weight' is or should mean.	C	The Conservation Commission identified in the audit that 'greater weight' would mean taking account of climate change in fauna habitat zone selection, influencing the priority setting for the implementation of recovery plans for threatened species and preferentially scheduling future timber harvesting operations in more resilient portions of State forest as far as is practicable.
124	7 (2, 3, 9, 12, 43, 70, 73)	Audit reports that the Department began a draft climate-biodiversity strategy in 2004. It is unacceptable that the strategy has not been finalised.	F	Outside the scope of the audit.
125	1 (53)	Diversity of forest management is in itself a climate change risk mitigation strategy.	I	Noted.
126	8 (2, 3, 9, 12, 19, 43, 70, 73)	Concern for no KPI relating to Global Carbon Cycles.	F	Outside the scope of the audit. The Conservation Commission acknowledges that no KPI was established for the global carbon cycle criterion. At the time of the development of the FMP, it was envisaged that detection of changes in the condition of the forest as a consequence of natural or management induced processes would be achieved through FORESTCHECK and the Montreal indicators of sustainability.
127	1 (23)	Lack of flexibility in the FMP to respond promptly to changing circumstances particularly climate change and dieback.	F	The FMP provides a range of mechanisms at three levels of scale which allow flexibility in forest management. The FMP includes provisions for adaptive management and review of guidelines and policies referred to in the plan if required (Objectives 33 and 34).
128	1 (24)	Emphasize the need to consider climate change in all decisions relating to the wellbeing of the forest.	I	Noted.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
Natural and cultural heritage				
129	2 (34, 35)	Actions relating to Aboriginal heritage and/or natural and cultural heritage are being implemented.	E	Noted.
130	1 (79)	Develop procedures that allow for consultation, identification, recording and protection of Aboriginal heritage sites.	C	Refer to information on Objective 24 and KPI 24 in the audit. The audit identifies the processes in place to consult, identify and protect Aboriginal sites in disturbance activities. The Department of Indigenous Affairs is responsible for recording and maintaining database on Aboriginal sites.
131	7 (2, 3, 73, 74, 80, 81, 83)	Inability to assess KPI 23 is a reflection of the low priority placed on cultural heritage in forests.	D	Cultural heritage is given a high priority for protection in disturbance activities. While information for KPI 23 was not available for the audit, the Department are currently addressing data capture for reporting on KPI 23 in 2010.
132	2 (35, 79)	Supports the endeavors of Aboriginal communities to enjoy economic benefits from native forests.	I	Noted.
133	1 (79)	Consultation with South West Land and Sea Council and Traditional Owners should be more uniformly and consistently applied across all Regions.	D	Noted.
134	1 (3, 29)	FMP has not fully protected non-Indigenous cultural heritage.	F	Outside the scope of the audit. Cultural heritage is given a high priority for protection in disturbance activities.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
135	1 (79)	Lack of consultation with Traditional Owners during the implementation of the FMP.	I	Noted. Operational. The agencies note that there are some differences across Regions with respect to consultation of traditional owners however, the Department and the Forest Products Commission notify South West Aboriginal Land and Sea Council for all disturbance activities that have the potential to impact on Aboriginal values, and actions are often formally presented to South West Aboriginal Land and Sea Council. The notification and protection process often includes; field visits and site inspections with traditional owners and custodians with authority and knowledge relating to Aboriginal cultural heritage, Indigenous representatives on site during earthworks and incorporation of cultural heritage messages and themes in onsite information.
136	3 (36, 37, 51)	Supports findings in the Natural and cultural heritage chapter.	E	Noted.
Socio-economic benefits				
137	1 (46)	No clear socio-economic benefits are evident from the brief reporting on this section.	C	The audit reflects the structure and required performance criteria of the FMP. All actions and KPIs under the Socio-economic benefits criterion have been addressed in the audit. Outside the scope of the audit.
138	1 (53)	Greater weight should be given to the social and economic value of forests and forest products.	F	The audit does not indicate that values of the environment are not being maintained for future generations. Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management, including intergenerational equity.
139	9 (2, 3, 29, 31, 73, 74, 80, 81, 83)	Concern that the health, diversity and productivity of the environment are not being maintained for future generations.	C	Noted.
140	1 (62)	Forests are important for tourism.	I	Noted.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
141	1 (31)	Impact of bauxite mining is only addressed briefly.	C	The audit reflects the structure and required performance criteria of the FMP.
142	7 (2, 3, 73, 74, 80, 81, 83)	The poor pricing mechanisms allow the Forest Products Commission to sell native timber in a way that prevents the development of an independent (private) forestry industry.	F	Outside the scope of the audit. Pricing mechanisms are determined by Government.
143	3 (36, 37, 51)	Supports findings in the Socio-economic benefits chapter.	E	Noted.
Plan implementation				
144	1 (77)	Agree with the need for more consistency in policy development in regard to silvicultural treatments, fire management and recreation.	E	Noted.
145	2 (7, 78)	Support adaptive management in relation to water balance.	F	Noted.
146	7 (2, 3, 73, 74, 80, 81, 83)	The audit report contains no evidence that Action 33.1 has been acted upon in the adaptive management process. Audit does not provide detailed information on research being undertaken by the Department's Science Division with regard to water quality, quantity, stream zones.	B	KPIs in the FMP relating to water quality and quantity (to be reported on in 2010) include KPI 19 Annual flow weighted mean salinity and the trend for streams in fully forested catchments, KPI 20 Percentage of water bodies (eg stream kilometers, lake hectares) with significant variance of biodiversity from the historic range of variability and KPI 22 Water production (streamflow of selected forested streams). The Department's Science Division undertake research in relation to water quality, quantity and stream zones. More information can be found at http://www.dec.wa.gov.au/science-and-research/index.html
147	24 (2, 3, 9, 12, 21, 23, 32, 33, 36, 37, 43, 51, 68, 69, 70, 73, 74, 75, 84, 85, 86, 80, 81, 83)	Concern about non-compliance.	D	Noted. Agencies treat instances of non-compliance seriously and systems and processes are in place to capture and correct incidents of non-compliance.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
148	11 (2, 3, 9, 12, 20, 23, 29, 43, 70, 73, 75)	Concern about the lack of penalties for non-compliance.	D	Noted. The Conservation Commission will provide advice to the Minister for Environment concerning amendments to the CALM Act to create a statutory duty for the Conservation Commission to provide advice to the Minister for Environment, and for its tabling in Parliament, when substantial non-compliance with the FMP leading to serious environmental consequences appears likely.
149	19 (2, 3, 9, 12, 23, 29, 31, 37, 43, 68, 70, 73, 74, 75, 79, 84, 80, 81, 83.)	Concern for outstanding guidelines – guidelines should be finalised (long delay to finalise guidelines).	D	Noted.
150	9 (2, 3, 9, 12, 29, 37, 43, 70, 73)	Lack of resources is no excuse for delay in implementation requirements of FMP.	I	The Conservation Commission accepts that a greater level of resourcing is required to implement all actions under the FMP in their proposed timeframes. The Conservation Commission considers that it may be necessary for the Department, in consultation with the Conservation Commission to reconsider priorities and allocate resources accordingly. Refer to information on Objective 32 in the audit.
151	2 (68, 75)	Lack of monitoring and auditing in relation to timber harvesting activities.	C	The audit identifies and reports on the monitoring and auditing activities that are required under the FMP (Objective 32). The Conservation Commission undertakes audits of activities relating to timber harvesting. The Department and the Forest Products Commission are subject to internal audits and officers undertake regular field monitoring of timber harvesting activities. The Forest Products Commission is also subject to external audits to maintain their Environmental Monitoring System and Australian Forestry Standard certification.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
152	46 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	Environmental Protection Authority to set binding and enforceable timelines on measures required by the FMP.	F	<p>Outside the scope of the audit.</p> <p>Specific timeframes required under Ministerial conditions have been incorporated in the FMP. Indicative timeframes for the commencement and conclusion of Actions that do not have a specific timeframe are identified in Appendix 13 of the FMP.</p>
153	10 (2, 3, 9, 12, 29, 43, 68, 70, 73, 75)	Many KPIs are not addressed.	C	<p>Not all of the KPIs were required to be reported on as part of the audit. The KPIs have different reporting periods ranging from annual to every five years. KPI 13 was required to be reported on as part of the audit process, however, information relating to the KPI was not available for the reporting period (see response to issue 72).</p> <p>http://www.dec.wa.gov.au/forests/forest-management-planning/forest-management-plan-2004-2013/fmp-2004-2013-key-performance-indicators.html</p>
154	1 (1)	KPIs under the FMP are inadequate for measuring ecological sustainability.	F	<p>Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. The plan, including the KPIs, has been assessed by the Environmental Protection Authority under the EP Act.</p> <p>It should be noted that KPIs are one of the tools used to measure sustainability. Information and reporting on ecological sustainability is also provided by FORESTCHECK, Western Australia's State of the Environment report and Australia's State of the Forest report.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
155	9 (23, 31, 32, 33, 35, 36, 43, 51, 72)	Implementation of the current FMP is not well resourced (this may contribute to suboptimal performance).	D	<p>Noted.</p> <p>Page 6 of FMP identifies the Department's and the Forest Products Commission's concern regarding the level of resourcing required to implement the plan at the time the plan was developed.</p> <p>"The Department and the Forest Products Commission are committed to the implementation of the plan, however, implementation of all the Actions will depend to some extent on the provision of necessary funds, which is subject to budgetary and other constraints, as well as for the Department to address other priorities throughout the State. Reports on implementation of the plan will make clear which Actions are not being progressed due to resource constraints."</p>
156	9 (2, 3, 21, 73, 74, 77, 80, 81, 83)	Supports greater cooperation between agencies (the Department, the Forest Products Commission, Conservation Commission), concern for lack of working arrangements.	E	<p>Noted.</p> <p>The Department and Forest Products Commission have continued to operate according to draft working arrangements prepared in accordance with the Memorandum Of Understanding (MOU) signed in March 2001 by the then Executive Director of the Department of Conservation and Land Management and the General Manager of the Forest Products Commission. In 2007, temporary working arrangements for planning and authorisation of timber harvesting in native forests were signed by the Director General of the Department and the General Manager of the Forest Products Commission.</p>
157	8 (2, 3, 29, 73, 74, 80, 81, 83)	Support for changes to legislative framework for the Conservation Commission to enforce compliance where there exists the risk of environmental or ecological damage.	E	<p>Noted.</p>
158	2 (53, 87)	Do not support changes to legislative framework for the Conservation Commission to enforce compliance where there exists the risk of environmental or ecological damage.	E	<p>Noted.</p>

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
159	1 (53)	Do not support changes to legislative framework for the Department to enforce compliance where there exists the risk of environmental or ecological damage.	E	The Conservation Commission supports the Department in seeking appropriate powers under the CALM Act.
160	2 (3, 24)	The legislative framework for forest management is inadequate.	I	Noted. The Conservation Commission will provide advice to the Minister for Environment concerning amendments to the CALM Act to create a statutory duty for the Conservation Commission to provide advice to the Minister for Environment, and for its tabling in Parliament, when substantial non-compliance with the FMP leading to serious environmental consequences appears likely.
161	11 (2, 3, 9, 12, 43, 70, 73, 74, 80, 81, 83)	Information on forest management and biodiversity conservation should be made publicly available.	C	The audit identifies a number of ways in which information on forest management and biodiversity conservation is made available to the public (Objective 55, KPI 29). In addition to this, information is also made available through FORESTCHECK reports, Western Australia's State of the Environment reports and Australia's State of the Forest reports.
162	12 (2, 3, 9, 12, 29, 43, 70, 73, 74, 80, 81, 83)	Concern about the transparency and reliability of the sustained yield calculation process.	B	Noted. The methodology and data used in the sustained yield calculations for the plan have been independently reviewed.
163	12 (2, 3, 9, 12, 43, 53, 70, 73, 74, 80, 81, 83)	Concern for lack of an EMS (Environmental Monitoring System).	D	Noted. The Conservation Commission will work with the Department to address this shortfall.

Forest Management Plan 2004-2013
Mid-term audit of performance report | Summary of issues from public submissions

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response
164	4 (3, 29, 68, 69)	Lack of community consultation with respect to forest management practices and guidelines.	D	<p>The Conservation Commission undertook extensive public consultation during the development of the FMP.</p> <p>The FMP provides for ongoing community consultation with respect to forest management practices (eg community forest inspections, three year and annual timber harvest planning, the Department's Good Neighbour policy, public nomination process for potential old-growth) and with respect to input on guidelines. Guidelines are made available to the public for a period of four weeks for comment before they are sent to the Minister for Environment for approval.</p> <p>The audit identifies and reports on actions relating to community involvement (Objective 35).</p>

Appendix A

Criteria and category for response

Issue requires a response if it relates to the audit and a response is required to:

- (a) correct an error of fact or inaccuracy
- (b) identify an omission of information
- (c) clarify audit content or audit process
- (d) address an issue with audit content
- (e) note that the comment supports or do not support the Conservation Commission's findings

Issue may not require a response if:

- (f) the issue is outside the scope of the audit, including if the issue relates to the framework and management principles of the FMP, or is in conflict with legislation or policy
- (g) the issue is too broad and unable to be addressed within the context of the audit
- (h) is unclear, or can not be validated
- (i) is a general statement or opinion

Appendix B

Forest Management Plan mid-term audit of performance | List of submissions

Submission number	Organisation	Submission number	Organisation
1	Individual	25	Individual
2	Individual	26	Individual
3	Individual	27	Individual***
4	Individual***	28	Individual***
5	Individual***	29	South-West Forest Defence Foundation
6	Individual***	30	Individual***
7	Water Corp	31	Individual
8	Individual***	32	Individual
9	Individual***	33	Individual
10	Individual***	34	Department of Indigenous Affairs
11	Individual***	35	Institute of Foresters Australia
12	Individual***	36	Leeuwin Environment
13	Individual***	37	Busselton Dunsborough Environment Centre
14	Individual***	38	Individual***
15	Individual***	39	Individual***
16	Individual***	40	Individual***
17	Individual***	41	Individual***
18	Individual***	42	Individual***
19	Individual	43	Individual
20	Individual	44	Individual***
21	Individual	45	Individual***
22	Individual***	46	Forest Industry Federation (WA)
23	Jarrahdale Heritage Society	47	Individual***
24	Individual	48	Individual***
49	Individual***	70	Joint submission: Conservation Council of WA, Wilderness Society of WA, Western Australia Forest Alliance
50	Individual***	71	Individual
51	Friends of the Earth Southwest WA	72	Individual
52	Individual***	73	Individual

Forest Management Plan 2004-2013

Mid-term audit of performance report | Summary of issues from public submissions

Submission number	Organisation	Submission number	Organisation
53	Forest Products Commission	74	Bridgetown Greenbushes Friends of the Forest (BGFF)
54	Individual***	75	Universiteit Utrecht (Part 3 of BGFF but considered separately)
55	Individual***	76	The Bushfire Font Inc
56	Individual***	77	Department of Water
57	Individual***	78	Individual
58	Individual***	79	South West Aboriginal Land & Sea Council
59	Individual***	80	Individual
60	Individual***	81	Individual
61	Individual***	82	Global Warming Forest Action Group
62	Individual	83	Individual
63	Individual***	84	Individual
64	South West Environment Centre	85	Individual
65	Individual***	86	Individual
66	Individual***	87	Department of Environment and Conservation
67	Biomass Action Group	88	Denmark Environment Centre
68	Yabberup Environment Society		
69	Individual		

*** Proforma

Appendix 3

Response to Submissions – Department of Environment and Conservation

DEC 11172
DOC113179
C. Murray



Government of Western Australia
Department of Environment and Conservation

Your ref: DEC11172
Our ref: 2007/003325 & CEO1166/09
Enquiries: Dr Geoff Stoneman
Phone: 9442 0335
Fax: 9389 5388
Email: Jacqueline.Jewell@dec.wa.gov.au

SCANNED

Mr Colin Murray
Director
Environmental Impact Assessment
Environmental Protection Authority
Locked Bag 33
CLOISTERS SQUARE WA 6850

DEPARTMENT OF ENVIRONMENT
& CONSERVATION
24 DEC 2009
Corporate Information Section
ATRIUM

Dear Colin

**FOREST MANAGEMENT PLAN 2004-2013 MID-TERM AUDIT OF PERFORMANCE,
RESPONDING TO PUBLIC SUBMISSIONS**

I refer to your letter of 14 July 2009 providing the Department of Environment and Conservation (DEC) with copies of the submissions received during the public comment phase for the *Forest Management Plan 2004-2014* (FMP) mid-term audit of performance. Thank you for the opportunity to respond to the issues raised in the submissions.

DEC has worked with the Conservation Commission of Western Australia and the Forest Products Commission (FPC) to identify the issues raised in public submissions. DEC has responded to those issues which relate to its policy, regulatory and operational roles. While every effort has been made to ensure consistency with the Conservation Commission and the FPC responses where this is appropriate, in some cases a different response is provided compared to the other agencies as DEC has a different view on these issues. Enclosed is our response to the issues identified in the public submissions on the FMP mid-term audit of performance.

Given DEC's key role as the land manager across the State's south-west forests and its responsibilities in implementing the FMP, I would request that DEC have a representative attend Environmental Protection Authority meetings were the FMP and the mid-term audit of performance are discussed.

DIRECTOR GENERAL AND ENVIRONMENTAL SERVICES DIVISIONS: The Atrium, 168 St Georges Terrace, Perth, Western Australia 6000
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XDEC001

Should you have any further queries regarding DEC's response, please contact Dr Geoff Stoneman, Acting Director Sustainable Forest Management, on 9442 0335.

Yours sincerely



Keiran McNamara
DIRECTOR GENERAL

17 December 2009

Enc

cc. Michelle Andrews, A/General Manager, Office of the EPA (letter only)
Dr Paul Vogel, Chairman, EPA (letter only)

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
General Comments			
1	1 (53)	The scope of the audit includes matters [on climate change] which are outside the implementation of the FMP.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
2	2 (53, 87)	The audit does not give adequate recognition to the significant progress that has been made by the Department and the Forest Products Commission in implementing the forest management practices laid out in the FMP.	Issue identified from Department of Environment and Conservation's submission.
3	1 (46)	The focus of the audit should have been on assessing the effectiveness of the FMP.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
4	1 (53)	The audits assessment and evaluation places undue emphasis on the precautionary principle to guide its recommendations.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
5	1 (53)	The audit has little emphasis on social and economic aspects of ecologically sustainable forest management.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
6	1 (35)	Recommendations in the audit do not reflect an appropriate balance of socio-economic and heritage values against other Montreal criteria.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
7	1 (53)	Fundamental bias in audit – the audit infers that timber production represents a significant threat.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
8	1 (53)	The audit does not provide a measure of performance of other forest users (other than FPC) or the Department of Environment and Conservation.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
9	1 (53)	The implementation of the FMP and forest management is well administered.	Noted.
10	1 (53)	At a time of restricted agency resources, recommendations in the audit should be subject to an independent analysis as to the cost/benefit/risk being addressed.	The Department of Environment and Conservation will continue to implement the FMP, including the outcomes of the mid-term audit of performance and respond to government priorities within the resources available to it.



Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
11	2 (53, 87)	Recommendations proposed by the Conservation Commission are neither necessary nor cost effective methods of delivering desired outcomes.	Issue identified from Department of Environment and Conservation's submission.
12	2 (46, 87)	Recommendation for further resources for implementing the Plan is unrealistic.	Issue identified from Department of Environment and Conservation's submission.
13	2 (23, 24)	There is a need for independent assessment of the implementation of the FMP, independent monitoring of activities and independent verification of facts and figures.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
14	4 (35, 46, 53, 87)	The audit does not provide scientific or other evidence to support the arguments made by the Conservation Commission.	Issue identified from Department of Environment and Conservation's submission.
15	2 (78, 76)	The expertise of the Conservation Commission in assessing forestry and/or fire management is questioned.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
16	7 (74, 2, 3, 73, 80, 81, 83)	Generally agree with Conservation Commission's recommendations from the audit.	Noted.
17	2 (35, 46)	The results from FORESTCHECK and the Kingston study have not been taken into account in the audit.	The Department of Environment and Conservation will review the relevant protocols for Key Performance Indicators with the aim of including FORESTCHECK information, where appropriate, in future reporting.
18	1 (7)	Share the concern of the Conservation Commission with regard to multiple-use outcomes expected from current forest management practices.	The FMP provides for multiple-use of State forest and timber reserves. State forest and timber reserves are reserved for the purposes of conservation, recreation and timber production on a sustained yield basis, water catchment protection and is tenure available for mining.
19	41 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 32, 33)	Government should cease financially supporting the native forest timber industry.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.



Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
20	63 (1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 24, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 71, 73, 74, 75, 80, 81, 83, 84)	The native forest timber industry is not ecologically sustainable or economically viable.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
21	3 (20, 23, 31)	Call for a moratorium on disturbance activities.	Outside the scope of the audit.
22	20 (1, 2, 3, 9, 12, 24, 29, 31, 36, 37, 43, 51, 72, 73, 74, 75, 80, 81, 83, 86)	Forest management is not ecologically sustainable.	Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management.
23	9 (2, 3, 24, 37, 73, 74, 80, 81, 83)	The five principles of ecologically sustainable forest management are not being complied with.	Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. The mid-term audit of performance reports compliance in relation to the FMP.
24	3 (46, 53, 78)	The audit gives excessive attention to timber production and less attention given to threats faced by conservation reserve system. The forest is being conservatively managed with respect to the reservation system (large number of areas where timber harvesting is not permitted).	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
25	53 (1, 2, 3, 4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 31, 32, 33, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 72, 73, 74, 80, 81, 83)	The forest is being managed for production values and not for biodiversity, clean air and water, cultural heritage, tourism, recreation and carbon storage.	Under the CALM Act and the FMP, State forest and timber reserves are reserved and managed for the purposes of conservation, recreation, timber production on a sustained yield basis and water catchment protection. The forest is managed for a range of values, including productive capacity, biodiversity, soil and water, ecosystem health and vitality, natural and cultural values and socio-economic benefits. The audit provides information on each of the actions that guide the management of these values under the FMP.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
26	11 (2, 3, 9, 25, 26, 32, 33, 73, 74, 80, 83)	Propose agroforestry as an alternative to native forest timber harvesting.	Outside the scope of the audit.
27	13 (2, 3, 9, 12, 37, 43, 70, 73, 74, 80, 81, 83, 84)	Propose plantations as an alternative to native forest timber industry.	Outside the scope of the audit.
28	1 (23)	Support the principles of ecologically sustainable forest management.	Noted.
29	2 (2, 3, 23, 73, 74, 80)	Support implementing the precautionary principle.	Noted.
Biological diversity			
30	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	<p>The sole response to fauna decline cannot be 'more research'.</p> <p>The Department should provide evidence that decline is not due to management actions.</p>	<p>The Department of Environment and Conservation supports taking action to address threats to flora, fauna and ecological communities, but questions the effectiveness of applying management actions with a lack of knowledge.</p> <p>The requirement to provide evidence to the Conservation Commission that higher levels of threat are not due to management actions is an unnecessary duplication of effort and does not recognise the process undertaken by the Department of Environment and Conservation to recommend raising a species to a higher threat category and the threatened species recovery planning process.</p>
31	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 74, 73, 80, 81, 83)	Reports on fauna declines should be produced by qualified, experienced and independent people.	As per the protocol for Key Performance Indicators addressing biodiversity (which can be viewed online at http://www.dec.wa.gov.au/forests/forest-management-planning/forest-management-plan-2004-2013/fmp-2004-2013-key-performance-indicators.html), information on species status is prepared by appropriately qualified and experienced staff
32	14 (2, 3, 9, 12, 20, 31, 43, 68, 70, 73, 74, 80, 81, 83)	Concern that there is a lack of urgency in addressing species decline.	The FMP provides a range of actions and measures within identified timeframes to address the conservation of biodiversity. See response to Issues 33 and 35.
33	6 (3, 29, 31, 37, 68, 86)	Concern for threatened species (flora and/or fauna) declines.	Protecting threatened species and ecological communities is undertaken through developing and implementing recovery plans and the ongoing Western Shield fox baiting program. FORESTCHECK monitors the response of biodiversity to disturbance in south-west forests. The knowledge and understanding gained from FORESTCHECK provides a sound basis for effective forest management.



Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
34	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Concern for implementation of Fauna Distribution Information System (FDIS). Concern that measures to protect fauna do not trigger effective management responses.	The Department of Environment and Conservation considers FDIS a valuable management tool. At the operational level FDIS is used to trigger management strategies in pre-operations planning. As a predictive tool FDIS has a number of advantages, including:- improved targeting of rare species where their presence can be difficult to detect in the field, accounting for difference in seasonal activity of different species, minimising errors inherent in surveying small areas, and enhanced capacity for improvement.
35	1 (35)	Need a holistic approach to threatened species management.	The FMP provides a range of actions and measures implemented at the whole of forest, landscape and operational levels, for the protection of biodiversity; including the formal and informal reserve system, provisions for diversity in vegetation structure and protection of specific habitat elements, fauna habitat zones and the FORESTCHECK monitoring program. Actions 8.1 to 8.6 of the FMP outline a range of tasks for the purpose of protecting and assisting in the recovery of threatened and priority species. The Department of Environment and Conservation maintains a list identifying threatened and priority flora and fauna species and ecological communities, develops and implements recovery plans for threatened species and ecological communities, undertakes ongoing fox baiting through the Western Shield program and has developed an extensive pre-operations checklist for disturbance activities, which can involve action in relation to threatened species management.
36	1 (75)	Pre-logging surveys should be required to generate baseline data collection for biodiversity information.	Outside the scope of the audit. Biodiversity information is collected via a number of research and monitoring programs including FORESTCHECK, pre-disturbance flora surveys and other species or area-specific studies.
37	1 (70)	The Forest Products Commission should not be the sole custodian of the Fauna Distribution Information System (FDIS).	The Department of Environment and Conservation is responsible for maintaining the integrity of FDIS as it has the expertise to do this and because FDIS is used in the planning for prescribed fire and timber harvesting. A framework has been established to ensure that the information used by FDIS validated and current.



Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
38	6 (2, 9, 21, 62, 71, 75)	Concern that old-growth forest is being logged. (agencies apply a restrictive definition of old-growth; "the number of stumps per hectare" was the only criterion used in WA to define old-growth. Forest with over two stumps per hectare is not classed as 'old-growth regardless of the quality of the forest, or the size and age of the trees).	All old-growth forests are protected either through the formal conservation estate or in areas categorised as informal reserves which are unavailable for timber harvesting. The definition cited is incomplete. Old-growth forest included in the corporate database needs to meet the following criteria, <i>Areas greater than two hectares of ecologically mature forest, where the overstorey is in a late mature to senescent growth stage, and where the effects of disturbance (e.g. dieback, timber production, grazing) are either absent or now negligible.</i>
39	3 (21, 35, 75)	Concern about the process for identifying old-growth.	As part of operational planning, forest proposed for timber harvesting is checked where necessary for presence of unmapped old-growth forest. The Department of Environment and Conservation will amend the corporate database to include areas which meet the criteria for old-growth forest. These areas are added to the informal reserve system and are unavailable for timber harvesting. The Conservation Commission administers a public nomination of old-growth forests process.
40	1 (53)	Remove areas of non old-growth forest previously mapped as old-growth from informal reserves.	Outside the scope of the audit.
41	1 (75)	Concern that Forest Products Commission are cutting down trees that contain habitat for wildlife (hollows).	The FMP provides a range of actions and measures for the protection of biodiversity. The Silvicultural guidelines outline habitat retention requirements in areas where timber harvesting takes place.
42	2 (23, 51)	Protect and conserve Western Australia's native forests and woodlands.	Outside the scope of the audit. The FMP provides for a native forest timber industry and measures to conserve the biodiversity of native forests and woodlands in the area covered by the FMP. See response to issue 25.
43	7 (2, 3, 73, 74, 80, 81, 83)	Call for fauna habitat zones to be linked to create corridors.	Outside the scope of the audit. The FMP outlines the purpose of these areas and explains the criteria used to determine their location.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
44	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Support an increase in the size of fauna habitat zones to more than 200ha to provide additional protection for fauna values and biodiversity.	Noted. The Guidelines for the Selection of Fauna Habitat Zones will address the size requirements for fauna habitat zones.
45	8 (2, 3, 73, 74, 75, 80, 81, 83)	Concern about the weaknesses in the location, design and effective ecological functions of fauna habitat zones.	Outside the scope of the audit. The FMP outlines the purpose of these areas and explains the criteria used to determine their location.
46	2 (46, 53)	The Department to evaluate ecological benefits of fauna habitat zones (in light of data made available in the FORESTCHECK Progress Report 2007-2008).	Outside the scope of the audit.
47	1 (75)	Area of forest in reserve is not sufficient.	Outside the scope of the audit.
48	1 (70)	Support the review of the causes of delays in implementation of reserves.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit. Noted. The Department of Environment and Conservation supports this recommendation. Close to half of the land category changes detailed in the FMP have been implemented.
Productive capacity			
49	56 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 72, 73, 75, 85, 86)	All timber harvesting of native forest and woodlands should stop.	Outside the scope of the audit.
50	12 (2, 3, 9, 25, 32, 33, 73, 74, 80, 81, 83, 84)	Phase out native forest timber harvesting (by end of plan).	Outside the scope of the audit.



Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
51	12 (2, 3, 9, 32, 33, 70, 73, 74, 75, 80, 81, 83)	High conservation areas (Warrup, Coonan, Meribup) to be excluded from logging immediately.	Outside the scope of the audit.
52	1 (88)	Low rainfall areas (as defined in the submission paper) to be excluded from logging immediately.	Outside the scope of the audit.
53	48 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	All logs should be counted towards the allowable cut (killed trees left standing, logs left on ground, piled on landings, firewood, sold or not).	The allowable cut does include all logs projected to become available through the harvesting and associated silvicultural treatment of forest areas. This includes the logs sold as well as those retained in the bush. Because the level of sawlog cut is the driver for regulating the sustained yield, monitoring the removal of sawlog material is the key focus in regulation of sustained yield.
54	1 (75)	Clearfelling of karri is unsustainable.	The audit does not indicate that clearfelling of karri is unsustainable.
55	48 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	The allowable volume of karri other bole volume must not be increased.	The Department of Environment and Conservation considers that a revised upper limit of production of karri other bole volume is consistent with the settings and intent of the FMP.
56	3 (35, 53, 87)	Support a review of the karri other bole volume.	Issue identified from the Department of Environment and Conservation's submission.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
57	11 (2, 3, 9, 12, 29, 36, 37, 43, 51, 70, 73)	The sustained yield under the FMP is not sustainable.	<p>The CALM Act requires that timber production in native forests be conducted on a sustained yield basis. The methodology and data used in the sustained yield calculations for the plan have been independently reviewed by a panel of experts during the period April 2001 to June 2003 (Ferguson et al 2001a, 2001b, 2003)¹.</p> <p>The Panel concluded (Ferguson et al 2001b, page 1): <i>The panel is satisfied that it has considered and addressed the issues repeatedly raised by members of the public and which are said to impact on the calculation of sustained yield. The Panel believes that, in principle, the simulation model uses appropriate data, assumptions and methods in calculating sustained yield.</i></p> <p>Noted.</p>
58	10 (35, 46)	Sustained yield for jarrah sawlogs should not be adjusted.	<p>The Department of Environment and Conservation advised in its supplemental advice to the Conservation Commission that a revision of the FMP sawlog sustained yield was not warranted or practical at this time.</p>

¹ Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001a). *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 of Western Australia, Perth.

Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001b). *Calculating the Sustained Yield for the Draft Forest Management Plan: A Preliminary Stage 2 Report.* Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Ferguson, I., Adams, M., Bradshaw, J., Davey, S., McCormack, R. and Young, J. (2003). *Calculating Sustained Yield for the Forest Management Plan (2004-2013).* Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.



Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
59	8 (2, 3, 9, 12, 29, 43, 70, 73)	No confidence in the Department's data or modelling to estimate the likely yield of timber from our native forests.	<p>Outside the scope of the audit.</p> <p>The CALM Act requires that timber production in native forests be conducted on a sustained yield basis. The methodology and data used in the sustained yield calculations for the plan have been independently reviewed by a panel of experts during the period April 2001 to June 2003 (Ferguson et al 2001a, 2001b, 2003)².</p> <p>The Panel concluded (Ferguson et al 2001b, page 1): <i>The panel is satisfied that it has considered and addressed the issues repeatedly raised by members of the public and which are said to impact on the calculation of sustained yield. The Panel believes that, in principle, the simulation model uses appropriate data, assumptions and methods in calculating sustained yield.</i></p>
60	7 (2, 3, 73, 74, 80, 81, 83)	Shortfalls identified in the Swan Region indicate issues with: the sustained yield calculation assumptions; methodology of timber harvesting practices; and/or unsustainability of timber harvesting.	<p>The Department of Environment and Conservation has provided supplemental advice to the Conservation Commission on this matter. Factors influencing this outcome included a high proportion of sawlog of a marginal size, larger sawlogs are at low frequency and more likely not to be harvested in the Swan Region compared to other regions, and conservative marking of crop or habitat logs has a greater impact in the Swan Region than other regions.</p>
61	1 (70)	Successful regeneration of the understorey species (present before logging) should be a criterion for the effectiveness of regeneration.	<p>FORESTCHECK monitors understorey richness and abundance in the various silvicultural treatments of jarrah forest (shelterwood, selective cut and gap release) and in uncut reference forest.</p> <p>Successful regeneration of understorey species is a criterion for landing and snig track rehabilitation. Monitoring and success criteria for understorey regeneration are outlined in the silvicultural guidelines.</p>
62	10 (2, 3, 9, 12, 43, 66, 68, 70, 73, 84)	Native forest material must be excluded from energy production materials.	<p>Outside the scope of the audit.</p>

² Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001a). *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 of Western Australia, Perth.

Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001b). Calculating the Sustained Yield for the Draft Forest Management Plan: A Preliminary Stage 2 Report. Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Ferguson, I., Adams, M., Bradshaw, J., Davey, S., McCormack, R. and Young, J. (2003). *Calculating Sustained Yield for the Forest Management Plan (2004-2013)*. Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.



Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
63	7 (3, 23, 24, 29, 31, 37, 75)	Concern for damage to standing trees and understorey from machine harvesting.	The silvicultural guidelines outline measures to reduce the impact of harvesting operations on flora diversity and abundance.
64	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern that wildflower and seed picking is not monitored and it should be phased out.	The FMP provides for multiple-use of State forest and timber reserves.
65	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern that forest management (timber harvesting and burning) has adverse effects on apiculture.	The planning checklist for disturbance activities includes measures to identify and manage apiary sites.
66	8 (2, 3, 9, 12, 29, 43, 70, 73)	Apiary sites should be progressively removed from the conservation estate.	Outside the scope of the audit.
67	1 (53)	Audit fails to identify area of forest requiring rehabilitation from mining.	Outside the scope of the audit.
68	8 (2, 3, 9, 12, 29, 43, 70, 73)	The figures for employment in each of native forest logging operations, processing and downstream manufacture should be made publicly available (KPI 13).	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
69	1 (68)	Lack of guidelines for management of blackbutt.	The jarrah silvicultural guidelines provide for the management of blackbutt.
70	1 (68)	Blackbutt should be included in old-growth forests.	Blackbutt is included in old-growth forest if it meets the criteria. Blackbutt falls under the criteria for forest.
71	1 (68)	There should be consistency between the FMP and the Forest Products Commission measurements of timber yields to avoid mistakes.	Sustained yield is determined in units of volume and log deliveries are recorded in tonnes, therefore appropriate weight:volume conversion factors have been determined and are applied to the various products. The reconciliation of sustained yield and removals is undertaken on a volumetric basis.
Ecosystem health and vitality			
72	1 (72)	Section in audit dealing with ecosystem health is weak.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
73	2 (32, 33)	Concern with agencies inability to deal with increasing threats to forest ecological health.	<p>The Department of Environment and Conservation maintains a coordinated approach to addressing the management of weeds, pests and diseases across land tenures and continues to implement appropriate management practices and control programs.</p> <p>The Department of Environment and Conservation has an informal forest health monitoring system in place and forest health research is undertaken. Surveillance and mapping of <i>Phytophthora</i> dieback disease has been one of the longest running forest health projects. The Department of Environment and Conservation is collaborating in research to investigate and monitor the cause of decline in tuat and wandoo forests and woodlands.</p>
74	43 (4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 84)	All burning in native forest and woodlands should stop.	<p>Outside the scope of the audit.</p> <p>Prescribed burning is a land management tool employed by the Department of Environment and Conservation to meet a number of protection and conservation objectives.</p>
75	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	Biodiversity is not given adequate weight as an objective for fire management.	<p>The Department of Environment and Conservation employs a range of fire management approaches to meet a number of conservation and land management objectives. For example, implementing fire regimes based on vital attributes and life histories of keystone species or focal point species, implementing fires regimes for specific threatened or fire sensitive species, maintaining a mosaic by the frequent introduction of fire into the landscape, implementing fire regimes at intervals based on fuel accumulation, and maintaining networks of fire exclusion areas.</p>
76	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	Better management of prescribed burning.	<p>The Department of Environment and Conservation is confident that the prescribe burn program is well managed. The Master Burn Program is developed in line with fire management principles as outlined in the Department's Fire Management Policy, Policy No. 19, which is supported by the <i>Code of Practice for Fire Management</i>.</p>

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
77	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	The principles of ESFM are being ignored in the prescribed burning program.	See response to Issues 74, 75 and 76.
78	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern with the amount and frequency of burning in the conservation estate.	Outside the scope of the audit.
79	2 (46, 87)	Cannot agree with the conclusion that current fire management policy does not adequately account for biodiversity outcomes.	See response to Issues 74, 75 and 76. Issue identified from the Department of Environment and Conservation's submission.
80	2 (35, 76)	Concern that the approach to plan for biodiversity as a primary objective in prescribed burning is counterproductive and increases the risk to both biological and social values (fails to afford any priority to the protection of human lives).	Prescribed burning is a land management tool employed by the Department of Environment and Conservation to meet a number of protection and conservation objectives.
81	49 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	Agree that post-burn monitoring and review must become a routine outcome of prescribed burns.	Logistic and resourcing constraints make monitoring the effects of all prescribed burns problematical. The network of FORESTCHECK sites and a range of other research studies provide on-ground monitoring and assist to increase the Department of Environment and Conservation's understanding of the effects of fire on forest biota so that practices are modified where required.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
82	41 (3, 4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	Conservation Commission must be more involved in monitoring and auditing the Department's fire management and have the resources to do so.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
83	1 (76)	The Department's fire management should be independently audited.	Outside the scope of the audit. A number of independent reviews on fire management have been published since 2004 including the Environmental Protection Authority's Fire Review (2004) on the Swan, South West and Warren Regions. The Conservation Commission has undertaken two independent audits of the Department of Environment and Conservation's fire management; Master Burn Plan Assessment and Prescribed Burning.
84	1 (46)	Support recommendations that streamline the prescribed burn program.	Noted.
85	3 (35, 46, 76)	Do not support recommendations that hinder prescribed burn process.	Noted.
86	8 (2, 3, 9, 12, 29, 43, 70, 73)	KPI for fire is not meaningful in addressing biodiversity conservation (flora, fauna, ecosystems and ecosystem processes).	The Department of Environment and Conservation applies prescribed fire to achieve a 'time since fire' frequency distribution. This approach ensures a fire induced diversity of the vegetation across the landscape. Diversity in vegetation across the landscape ensures there is a range of habitats, facilitating biological diversity and persistence of the biota dependent on these habitats. The objective of Key Performance Indicator 16 is to assess achievement of targets in relation to the management of fire by providing information on the 'time since fire' within each Landscape Conservation Unit.
87	15 (2, 3, 9, 12, 29, 35, 36, 37, 43, 51, 68, 69, 70, 73, 86)	Concern for dieback issues.	The Department of Environment and Conservation monitors and conducts disturbance activities with regard to the Management of <i>Phytophthora</i> and Disease Caused By It policy and in accordance with Volume 1 of <i>Phytophthora cinnamomi</i> and Disease Caused By It Guidelines.

Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
88	8 (2, 3, 9, 12, 29, 43, 70, 73)	Support Conservation Commission's recommendation that dieback requires a whole-of-government approach across all lands.	Noted. No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
89	1 (75)	Concern for salinity impacts from timber harvesting.	Outside the scope of the audit. The impact of timber harvesting on salinity is managed through silvicultural guidelines and research indicates that risks have diminished as a result of reduced rainfall in recent decades.
90	2 (3, 29, 75)	Concern with tree health.	Tree health is being addressed by a range of groups and organisations including: the Department of Environment and Conservation, the Forest Products Commission, Centre for Phytophthora Science and Management, Tuat Health Research Group, Wandoo Recovery Group and the Centre of Excellence for Climate Change, Woodland & Forest Health.
91	1 (75)	Concern with plantation wildings in native forest.	Noted. The Department of Environment and Conservation and the Forest Products Commission undertake operations to control wildings in native forests near plantations.
92	8 (2, 3, 9, 12, 29, 43, 70, 73)	There needs to be greatly increased funding and higher priority given to weed, pest and disease eradication and control (especially <i>Pythophthora</i> dieback).	Noted. Refer Action 18.4 of the audit. The Department of Environment and Conservation continues to implement appropriate weed, pest and disease management practices and control programs. The Department of Environment and Conservation's annual report provides details on funding and control programs implemented across Departmental-managed land, including land managed under the FMP.

Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
93	1 (68)	Research is inadequate to fully understand the effects of fire on the forest ecosystem.	Outside the scope of the audit. A significant amount of research has been undertaken to address the effects of fire on forest ecosystems. Fire and ecosystem health is a research priority. The range of research activities are listed and briefly described in the <i>Science Division's Research Activity Report</i> which can be viewed online at the Department of Environment and Conservation's website. The Department of Environment and Conservation is a participant in the Bushfire Cooperative Research Centre. In collaboration with the Cooperative Research Centre, the Department of Environment and Conservation has been involved in a 30 year landscape scale study on the effect of contrasting fire regimes in forests and shrublands north east of Walpole.
Soil and water			
94	7 (3, 23, 24, 29, 31, 37, 75)	Concern with machine harvesting impacts on soil.	The mid-term audit of performance addressed this issue and identified some issues to be addressed, and follow-up action is underway.
95	10 (2, 3, 9, 12, 23, 29, 37, 43, 70, 75)	The use of machine harvesters should be suspended until the environmental impacts are assessed.	Outside the scope of the audit. Timber harvesting operations are monitored to assess levels of disturbance with the intention of addressing environmental impacts before these go beyond allowable limits. The FMP and silvicultural guidelines provide for an acceptable level of disturbance during harvesting activities.
96	1 (46)	The current application of the Trafficability Index is inconsistent.	The trafficability index is applied according to rules contained in Sustainable Forest Management Manual No. 1 2009, <i>Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests</i> and earlier versions of this manual. Noted.
97	3 (3, 23, 29, 37)	Concern with increased machine access during moist soil conditions (with respect to increased spread of <i>Phytophthora dieback</i>).	See response to Issue 94. The Department has put in place a process to improve the planning and approval of the soil and hygiene management issue. Noted.
98	9 (2, 3, 9, 12, 29, 43, 70, 75, 77)	Support the recommendation for a review of water production from forested areas.	Noted.
99	1 (53)	Do not support the view that Objective 21 may be overly ambitious.	Noted.



Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
100	7 (2, 3, 9, 12, 43, 70, 73)	Increase stream buffers.	Outside the scope of the audit.
101	3 (36, 37, 51)	Support initiatives outlined in the Soil and Water chapter of the audit report.	Refer Action 33.1 in the audit report. Noted.
Global carbon cycles (Climate change)			
102	17 (2, 3, 7, 9, 12, 31, 35, 36, 43, 51, 70, 73, 74, 77, 80, 81, 83)	Support the recommendation for an independent taskforce to assess forest management under a changing climate.	Noted. The Department of Environment and Conservation supports the development of policy for forest management in a changing climate, but questions the effectiveness and efficiency of establishing an independent taskforce to undertake this role.
103	3 (53, 78, 87)	Does not support recommendation for a taskforce to address forest management under a changing climate.	Issue identified from the Department of Environment and Conservation's submission. See response to issue 102.
104	3 (46, 53, 87)	Support for a proper scientific study to amass information for preparation of next plan.	Noted.
105	1 (7)	Supports the Conservation Commission's recommendations for a whole-of-government approach to setting up an independent task force and agrees that urgent responses need to be included within the 2013 scope of the current FMP (with respect to water supply).	See responses to Issues 102 and 112.
106	8 (2, 3, 7, 9, 12, 43, 70, 73)	Suggestions for taskforce representation, terms of reference.	Outside the scope of the audit.
107	39 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	Recommendations of the independent taskforce must include binding timelines and an understanding that there will be real consequences for non-compliance.	See response to Issue 102. Outside the scope of the audit. See response to Issue 102.
108	1 (35)	Concerned that terms of reference for the taskforce suggests that timber harvesting and prescribed burning present threats to the forest.	See response to Issue 102.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
109	40 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68)	An immediate moratorium on all logging and burning needs to be put in place to protect all areas of the forest that are acknowledged as particularly vulnerable to the effects of climate change.	See response to Issue 102. The FMP addresses climate change in relation to the sustained yield and other forest values. The Department of Environment and Conservation has established an expert panel to advise on what may constitute vulnerable areas of State forest in relation to climate change, identify possible risks and mitigation measures in terms of timber harvesting for the second half of the FMP.
110	49 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73, 88)	Logging in eastern jarrah forest should be stopped immediately.	See response to issue 109.
111	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Concern for regeneration success.	As reported for Key Performance Indicator 10, the target for regeneration success in native forest has been consistently achieved. The Department of Environment and Conservation will continue to report on regeneration success including in those areas of lower rainfall.
112	1 (77)	Supports Conservation Commission view that an urgent review of the quantity and quality of water use from forests under a drying climate is required.	The Department of Environment and Conservation has facilitated the development of the Wungong catchment trial. The aim of the trial is to provide critical information about the effects of forest thinning on a range of forest values, including biodiversity. The trial will help to inform any future decision about the broader application of this type of management practice in forested catchments. Additionally, CSIRO is undertaking research on forest density and climate change in the 31 Mile Brook catchment (near Wungong) with an aim to improve the capacity to model the effects of forest thinning on catchment hydrology.
113	2 (7,77)	It is reasonable for forests to be managed to maintain or enhance water supply in a drying climate.	Noted.
114	3 (36, 37, 51)	Water extraction and drying climate is detrimental to the forest.	See response to Issue 112.



Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
115	1 (88)	Concerned that major changes in annual rainfall volumes and distribution have not been factored into past and current management.	The Department of Environment and Conservation acknowledges that annual and seasonal rainfall distribution has undergone significant change in recent decades relative to the longer term record. One of the major uses of rainfall zones in forest management is managing the risk of stream salinity. Rainfall zones have been used as a surrogate for areas that have characteristics relating to salinity risk, in particular the amount of salt stored in the soil and the risk of this salt moving into streams following disturbance activities. Soil salt storage information was related to rainfall isohyets, based on rainfall data up to about the late 1970's, and rainfall and salinity risk zones were defined on this basis. Whilst rainfall patterns have changed, soil salt storage has not changed significantly and the use of historical rainfall isohyets to define areas of differing risk for salinity management remains appropriate. Declining groundwater levels in recent decades have reduced the salinity risk in areas referred to as intermediate and low rainfall zones, and it would be appropriate to review the vegetation management requirements in these areas ahead of the next forest management plan. It may also be appropriate to find an alternative term to describe categories of salinity risk so that further confusion with changing rainfall patterns is avoided.
116	9 (2, 3, 9, 12, 43, 51, 70, 73, 88)	Forest management documents should be amended to reflect changed isohyets (isohyet information provided as part of the submission).	Rainfall has previously been used to define particular geographic areas, e.g. eastern jarrah forest, to which different management regimes are applied. In 2004, to avoid confusion with changing rainfall patterns the definition of eastern jarrah forest was amended. Rainfall is one of the characteristics used to define these geographic areas, along with many others including soil type, depth, fertility and texture, topography, geomorphology and evaporative potential. Whilst rainfall patterns have changed, many of the other characteristics have not and the identification of these geographic areas remains appropriate. Notwithstanding this, the Department of Environment and Conservation will over time review forest management in the context of climate change and adopt terminology to describe geographic areas, seeking to reduce confusion with changing rainfall patterns.
117	1 (77)	Management of the northern jarrah forest in a drying climate has not been given enough importance in the audit.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
118	39 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	The Conservation Commission has failed to make a single recommendation to immediately change any existing forest management practices.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.



Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
119	7 (2, 3, 9, 12, 43, 70, 73)	Conservation Commissions recommendations are not commensurate with the threats posed by climate change.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
120	7 (2, 3, 9, 12, 43, 70, 73)	Audit does not address the contribution to greenhouse gas emissions from timber harvesting and burning.	Outside the scope of the audit.
121	58 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 31, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73, 74, 75, 80, 81, 83, 86)	Carbon accounting calculations for WA native forests should be undertaken (acknowledge carbon stores in our native forest).	The Department of Environment and Conservation identified in the audit that continued work on the impacts of climate change needs to be cognisant of the improved capacity to model carbon balance of forests at a regional level.
122	8 (2, 3, 46, 73, 74, 80, 81, 83)	FMP acknowledges the importance of seeking to sustain the contribution of the forest to global carbon cycles but the Audit provides scant detail concerning operational applications of this important matter in the first five years of the plan.	Information has been published on management actions under the FMP that seek to sustain the contribution of the forest to global carbon cycles including; increasing carbon accumulation in forests by rehabilitating degraded or harvested forest areas (e.g. Actions 10.3, 15.1, 15.3, 15.4, 28.1, 29.4); seeking to reduce the permanent loss of forests areas as a result of development and seeking the replacement of forest areas permanently lost to development (e.g. Actions 10.1, 28.1) and employing appropriate forest harvesting practices to protect vegetation and soil carbon (e.g. Actions 11.6, 20.1, 20.3, 20.4, 20.5). See response to Issue 109.
123	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	The Conservation Commission recommended the Department give 'greater weight' to climate change whenever it makes management decisions but there is a lack of clarity about what 'greater weight' is or should mean.	
124	7 (2, 3, 9, 12, 43, 70, 73)	Audit reports that the Department began a draft climate-biodiversity strategy in 2004. It is unacceptable that the strategy has not been finalised.	Outside the scope of the audit. The Department of Environment and Conservation continues to develop the State biodiversity conservation strategy.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
125	1 (53)	Diversity of forest management is in itself a climate change risk mitigation strategy.	Noted.
126	8 (2, 3, 9, 12, 19, 43, 70, 73)	Concern for no KPI relating to Global Carbon Cycles.	Outside the scope of the audit.
127	1 (23)	Lack of flexibility in the FMP to respond promptly to changing circumstances particularly climate change and dieback.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit. The FMP provides a range of mechanisms at three levels of scale (whole of forest, landscape and operational) which allow flexibility in forest management. The FMP includes provisions for adaptive management and review of guidelines and policies referred to in the plan if required (Objectives 33 and 34).
128	1 (24)	Emphasize the need to consider climate change in all decisions relating to the wellbeing of the forest.	See response to Issue 109.
Natural and cultural heritage			
129	2 (34, 35)	Actions relating to Aboriginal heritage and/or natural and cultural heritage are being implemented.	Noted.
130	1 (79)	Develop procedures that allow for consultation, identification, recording and protection of Aboriginal heritage sites.	Refer Objective 24 and KPI 24. Processes are in place to consult, identify and protect Aboriginal sites in disturbance activities. The Department of Indigenous Affairs is responsible for recording and maintaining databases on Aboriginal sites.
131	7 (2, 3, 73, 74, 80, 81, 83)	Inability to assess KPI 23 is a reflection of the low priority placed on cultural heritage in forests.	Cultural heritage is given a high priority for protection in disturbance activities.
132	2 (35, 79)	Supports the endeavours of Aboriginal communities to enjoy economic benefits from native forests.	Noted.
133	1 (79)	Consultation with South West Land and Sea Council and Traditional Owners should be more uniformly and consistently applied across all Regions.	Noted.
134	1 (3, 29)	FMP has not fully protected non-Indigenous cultural heritage.	Outside the scope of the audit. Cultural heritage is given a high priority for protection in disturbance activities.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
135	1 (79)	Lack of consultation with Traditional Owners during the implementation of the FMP.	The Department of Environment and Conservation notes that there are some differences across regions with respect to consultation of traditional owners, however the Department of Environment and Conservation notifies South West Aboriginal Land and Sea Council for all its disturbance activities that have the potential to impact on Aboriginal values, and actions are often formally presented to South West Aboriginal Land and Sea Council. The notification and protection process often includes field visits and site inspections with traditional owners and custodians with authority and knowledge relating to Aboriginal cultural heritage. Indigenous representatives on site during earthworks and incorporation of cultural heritage messages and themes in onsite information.
136	3 (36, 37, 51)	Supports findings in the natural and cultural heritage chapter.	Noted.
Socio-economic benefits			
137	1 (46)	No clear socio-economic benefits are evident from the brief reporting on this section.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
138	1 (53)	Greater weight should be given to the social and economic value of forests and forest products.	Outside the scope of the audit.
139	9 (2, 3, 29, 31, 73, 74, 80, 81, 83)	Concern that the health, diversity and productivity of the environment are not being maintained for future generations.	Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management, including intergenerational equity.
140	1 (62)	Forests are important for tourism.	Noted.
141	1 (31)	Impact of bauxite mining is only addressed briefly.	No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
142	7 (2, 3, 73, 74, 80, 81, 83)	The poor pricing mechanisms allow the Forest Products Commission to sell native timber in a way that prevents the development of an independent (private) forestry industry.	Outside the scope of the audit.
143	3 (36, 37, 51)	Supports findings in the Socio-economic benefits chapter.	Noted.
Plan implementation			
144	1 (77)	Agree with the need for more consistency in policy development in regard to silvicultural treatments, fire management and recreation.	Noted.



Forest Management Plan 2004-2013 | Mid-term audit of performance report
Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
145	2 (7, 78)	Support adaptive management in relation to water balance.	Noted.
146	7 (2, 3, 73, 74, 80, 81, 83)	The audit report contains no evidence that Action 33.1 has been acted upon in the adaptive management process. Audit does not provide detailed information on research being undertaken by the Department's Science Division with regard to water quality, quantity, stream zones.	The Department of Environment and Conservation's Science Division undertakes research in relation to water quality, quantity and stream zones. More information can be found at http://www.dec.wa.gov.au/science-and-research/index.html
147	24 (2, 3, 9, 12, 21, 23, 32, 33, 36, 37, 43, 51, 68, 69, 70, 73, 74, 75, 84, 85, 86, 80, 81, 83)	Concern about non-compliance.	Noted. The Department of Environment and Conservation treats instances of non-compliance seriously and systems and processes are in place to capture and correct incidents of non-compliance.
148	11 (2, 3, 9, 12, 20, 23, 29, 43, 70, 73, 75)	Concern about the lack of penalties for non-compliance.	Noted. The Department of Environment and Conservation supports the findings in the audit that compliance issues reflect the inadequate legislative clarity of the Department of Environmental and Conservation's relationship with proponents and how they operate on Department managed lands.
149	19 (2, 3, 9, 12, 23, 29, 31, 37, 43, 68, 70, 73, 74, 75, 79, 84, 80, 81, 83)	Concern for outstanding guidelines – guidelines should be finalised (long delay to finalise guidelines).	Noted. The Department of Environment and Conservation acknowledges the delay in the development of some guidelines required by the FMP. The Department of Environment and Conservation is currently finalising the guidelines identified in Appendix C of the audit as a matter of priority. It should be noted that on commencement of the FMP in 2004, the focus was on achieving on-ground implementation of the requirements of the FMP which posed significant changes to forest management practices.
150	9 (2, 3, 9, 12, 29, 37, 43, 70, 73)	Lack of resources is no excuse for delay in implementing requirements of FMP.	Significant progress has been made in implementing the FMP. On commencement of the FMP in 2004, the Department of Environment and Conservation's focus was implementing the substantial changes in policy and on-ground management. For the second half of the FMP resource availability will continue to influence implementation of the FMP and resources will be directed according to priorities.
151	2 (68, 75)	Lack of monitoring and auditing in relation to timber harvesting activities.	The audit identifies and reports on the monitoring and auditing activities related to the FMP (Objective 32).

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
152	46 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 75)	Environmental Protection Authority to set binding and enforceable timelines on measures required by the FMP.	Outside the scope of the audit. No response from the Department of Environment and Conservation - not related to the Department's role in the audit.
153	10 (2, 3, 9, 12, 29, 43, 68, 70, 73, 75)	Many Key Performance Indicators are not addressed.	Not all of the Key Performance Indicators were required to be reported on as part of the audit. The protocols for a range of Key Performance Indicators can be viewed online at: http://www.dec.wa.gov.au/forests/forest-management-planning/forest-management-plan-2004-2013/fmp-2004-2013-key-performance-indicators.html
154	1 (1)	KPIs under the FMP are inadequate for measuring ecological sustainability.	Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. The plan, including the KPIs, was assessed by the Environmental Protection Authority.
155	9 (23, 31, 32, 33, 35, 36, 43, 51, 72)	Implementation of the current FMP is not well resourced (this may contribute to suboptimal performance).	Noted. See response to Issue 10. Page 6 of the FMP identifies the Department of Environment and Conservation's view regarding the level of resourcing required to implement the plan at the time it was developed.
156	9 (2, 3, 21, 73, 74, 77, 80, 81, 83)	Supports greater cooperation between agencies (the Department, the Forest Products Commission, Conservation Commission), concern for lack of working arrangements.	DEC supports the finding in the audit that the development of working arrangement should be given a high priority for completion.
157	8 (2, 3, 29, 73, 74, 80, 81, 83)	Support for changes to legislative framework for the Conservation Commission to enforce compliance where there exists the risk of environmental or ecological damage.	The Department of Environment and Conservation is of the view that the Conservation Commission has adequate legislative authority, through the CALM Act, to raise issues it considers a concern.
158	2 (53, 87)	Do not support changes to legislative framework for the Conservation Commission to enforce compliance where there exists the risk of environmental or ecological damage.	Issue identified from the Department of Environment and Conservation's submission
159	1 (53)	Do not support changes to legislative framework for the Department to enforce compliance where there exists the risk of environmental or ecological damage.	See response to Issue 148.

Response from the Department of Environment and Conservation to issues raised in public submissions

Issue No.	Number of submissions with the same theme	Issue	Response
160	2 (3, 24)	The legislative framework for forest management is inadequate.	Noted. See responses to Issues 148 and 157.
161	11 (2, 3, 9, 12, 43, 70, 73, 74, 80, 81, 83)	Information on forest management and biodiversity conservation should be made publicly available.	The FMP provides a range of actions requiring information on forest management and biodiversity conservation to be made available to the public (Refer to Objective 35, KPI 29). In addition to this, information is also made available through FORESTCHECK reports, Western Australia's State of the Environment reports and Australia's State of the Forest reports.
162	12 (2, 3, 9, 12, 29, 43, 70, 73, 74, 80, 81, 83)	Concern about the transparency and reliability of the sustained yield calculation process.	Noted. The methodology and data used in the sustained yield calculations for the plan have been independently reviewed.
163	12 (2, 3, 9, 12, 43, 53, 70, 73, 74, 80, 81, 83)	Concern for lack of an EMS (Environmental Monitoring System).	An EMS suitable for accreditation is considered by the Department of Environment and Conservation to be a lower priority than other areas of policy and practice. The Department of Environment and Conservation is applying some resources in areas where a more systematic approach will achieve outcomes.
164	4 (3, 29, 68, 69)	Lack of community consultation with respect to forest management practices and guidelines.	The Department of Environment and Conservation sought public comment on the Guidelines for the Protection and Management of Informal Reserves and Fauna Habitat Zones and the Guidelines for Soil and Water Conservation. It continues to make the rolling three-year timber harvest plans publicly available. Community Forest Inspections are undertaken within each of the three forest administrative regions.

Appendix A

List of public submissions

Submission number	Organisation	Submission number	Organisation
1	Individual	33	Individual
2	Individual	34	Department of Indigenous Affairs
3	Individual	35	Institute of Foresters Australia
4	Individual***	36	Leeuwin Environment
5	Individual***	37	Busselton Dunsborough Environment Centre
6	Individual***	38	Individual***
7	Water Corp	39	Individual***
8	Individual***	40	Individual***
9	Individual***	41	Individual***
10	Individual***	42	Individual***
11	Individual***	43	Individual
12	Individual***	44	Individual***
13	Individual***	45	Individual***
14	Individual***	46	Forest Industry Federation (WA)
15	Individual***	47	Individual***
16	Individual***	48	Individual***
17	Individual***	49	Individual***
18	Individual***	50	Individual***
19	Individual	51	Friends of the Earth Southwest WA
20	Individual	52	Individual***
21	Individual	53	Forest Products Commission
22	Individual***	54	Individual***
23	Jarrahdale Heritage Society	55	Individual***
24	Individual	56	Individual***
25	Individual	57	Individual***
26	Individual	58	Individual***
27	Individual***	59	Individual***
28	Individual***	60	Individual***
29	South-West Forest Defence Foundation	61	Individual***
30	Individual***	62	Individual
31	Individual	63	Individual***
32	Individual	64	South West Environment Centre

Submission number	Organisation	Submission number	Organisation
65	Individual***	77	Department of Water
66	Individual***	78	Individual
67	Biomass Action Group	79	South West Aboriginal Land & Sea Council
68	Yabberup Environment Society	80	Individual
69	Individual	81	Individual
70	Joint submission: Conservation Council of WA, Wilderness Society of WA, Western Australia Forest Alliance	82	Global Warming Forest Action Group
71	Individual	83	Individual
72	Individual	84	Individual
73	Individual	85	Individual
74	Bridgetown Greenbushes Friends of the Forest (BGFF)	86	Individual
75	Universiteit Utrecht (Part 3 of BGFF but considered separately)	87	Department of Environment and Conservation
76	The Bushfire Font Inc	88	Denmark Environment Centre

*** Proforma

Appendix 4

Response to Submissions – Forest Products Commission

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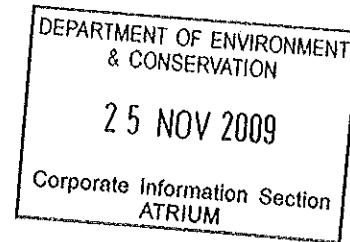
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Dr Paul Vogel
Chairman
Environmental Protection Authority
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ATTENTION: Mr Colin Murray



Dear Colin

**REVIEW OF PUBLIC SUBMISSIONS TO CONSERVATION COMMISSION'S
MID-TERM AUDIT INTO THE FOREST MANAGEMENT PLAN 2004-2013**

I write to you in response to the public submissions on the Conservation Commission's (the Commission) Mid-term Audit and attach a table that covers the issues raised in the submissions.

Many of the public submissions seek to address decisions that are outside the scope of the Mid-term Audit (MTA). These seek to question the land use decisions that were made in the 2004 Forest Management Plan (FMP) and accordingly are outside the scope of the MTA. The primary function of the MTA is to monitor the overall performance in implementing the management program as laid out in the FMP and, where relevant, its success in achieving a balance in the conservation, economic and social outcomes.

In addition, the Commission has considered that it is appropriate to introduce "new" information and circumstances in the MTA with a view to amending the FMP. By reference to the precautionary principle the Commission recommends that certain actions need to be undertaken due to possible (although not quantified) threats resulting from a greater degree of climate change (not substantiated).

The Forest Products Commission (FPC) is concerned that the Commission did not give the same consideration to the economic and social impacts of the FMP. This has been clear in the lack of consideration for both timber and water production values, both in its original document and in its response to public submissions.

Timber

The Commission was aware that the sawmill sector of the native forest timber industry had been operating under conditions of great difficulty, in part arising from the changes introduced under the FMP, but it rejected recommending any action as it was outside the scope of the MTA. FPC submits that not taking action in relation to the unforeseen adverse economic and social impacts is inconsistent with the approach adopted by the Commission in relation to climate change and is a failure to fully consider the issue.

Over the past four years the higher cost of regulation and the lower log quality arising as a direct result of the FMP have had a significant impact on the sawmill sector. The possibility of further economic and social impacts on South West communities due to the weakened economic viability of these businesses needs to be addressed now and actions put in place to reduce those restrictive measures that are not of real benefit to the biological sustainability of the forest. FPC had suggested action to alleviate some of those measures in the FMP which have since been demonstrated to be excessive, unnecessary or of no measured conservation benefit, namely:

- the removal of Fauna Habitat Zones (FHZs);
- allowing the harvesting of forest previously mapped as old growth, but found not to be old growth; and
- reducing the highly restrictive nature of the soil disturbance measures as outlined in the FMP so that harvesting operations can operate for a longer period.

The first two of these measures retain numbers of mature trees which are highly suited to the existing sawmilling technologies and neither can be demonstrated to have an additional conservation benefit.

FHZs were established on a theoretical basis claiming that larger patches of older forest, in addition to the already very substantial area of reserves (now more than 50 per cent of the forest), were required to maintain biodiversity – at a landscape scale. Results from the ForestCheck studies have shown that the forest is extraordinarily resilient and recovers very rapidly after harvesting. The most recent measurements made 10 to 15 years after harvest disturbance show that the biodiversity and species richness has already recovered to levels which are now very similar to those of the undisturbed forest. Therefore the value of FHZs must be questioned.

The policy to retain non-old growth forest which was previously mapped as old growth is irrational. These areas do not provide any specific value but were excluded from harvesting solely for political reasons and the requirement to exclude harvesting from these areas should now be removed from the FMP.

The third measure provides a detailed specification for the level of soil disturbance that is permissible in the forest. This measure has restricted the period of access to the forest for timber harvesting. During the period from June to October there is a significant reduction in harvesting activity with most operations (except mine site clearing) closing their operations for a period of up to three months. This level of disruption adds significant cost to harvesting operations.

The reasons for reviewing the level of these soil disturbance restrictions are:

- Monitoring has shown that the overall level of soil disturbance on current prescriptions is very low and reduction of control measures could still achieve an acceptable outcome.
- This policy is being inconsistently applied. Other forest users (including FPC) are permitted elsewhere to more heavily disturb forest soils and subsequently rehabilitate damaged soil (note this approach has been supported by the EPA for the mining industry).
- While soil disturbance has had some impact on forest values it is questionable as to whether these are significant on forest sustainability.

A change in these three measures would have a positive effect on both log quality and harvest cost.

Water

According to Commission climate change will have an impact on the timber supply sustainability of the forest. Of greater importance to Western Australians is the likely impact on water supply, a considerable portion of which is derived from the forested catchments.

It is difficult to understand the Commission's failure to even identify water supply as a significant issue in the MTA's climate change discussion when it is one of the most important consequences.

Climate change may require a response of action and not as proposed by the Commission. Managing our forests to increase their resilience may require intervention aimed at balancing water use with availability and not a "do nothing" approach as proposed. Certainly achieving water outcomes, as well as some conservation outcomes, will be assisted by intervention such as forest thinning to increase stream flow.

From both a water and timber viewpoint there are questions about whether the economic value of the forest can be sustained under its current settings. For timber these have deteriorated since the commencement of this FMP as a direct result of some of its measures. For water they are at risk from inaction. It is now appropriate to remove unnecessary practices which have adverse impacts on these economic values and promote actions to enhance these important benefits.

Yours sincerely



Dr Paul Biggs
GENERAL MANAGER

23 November 2009

att



FOREST PRODUCTS COMMISSION

Forest Management Plan 2004-2013

Mid-term Audit of Performance Report

Response to public submissions

INTRODUCTION

The Forest Products Commission (FPC) thanks the Environmental Protection Authority (EPA) for the opportunity to provide a response to the public submissions received by the EPA on the mid term audit of performance report (audit) of the Forest Management Plan 2004-2013.

In drafting its response the FPC has worked with the Conservation Commission (CC) and with the Department of Environment and Conservation (DEC) and has used as its base the response provided by the CC to the EPA.

The CC has provided in the covering letter to its response a description of the process adopted to identify and categories issues in the public submissions to which a response could be provided and the FPC concurs with this approach.

In the attached table summarising issues raised, the FPC response is provided in the far right hand column. In many cases, the FPC agrees with the response provided by the CC. In others, the identified issues are outside of the legislative responsibility of FPC and it is not considered relevant for FPC to comment (shown as N/A). Where the FPC has a differing opinion to the CC this is provided. In many cases, the FPC's responses have been taken from the submission provided to the EPA by the FPC (submission number 53) during the public comment period on the audit itself.

Also attached is a copy of the supplemental advice provided to the CC by the FPC for machine harvesting and regeneration in the eastern jarrah forest following timber harvesting.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
General Comments					
1	1 (53)	The scope of the audit includes matters [on climate change] which are outside the implementation of the FMP.	C	<p>The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.</p> <p>In the case of climate change the Conservation Commission was mindful of the significant changes that occurred in climate change science and policy since 2004 and as such the criterion was given greater consideration in the mid-term audit.</p>	<p>The scope of the audit includes matters which are outside the implementation of the FMP and would not normally be considered a part of an audit of operational implementation. While it might be reasonable for the Conservation Commission (CC) to consider the changing external environment, the FPC contends that addressing such issues, while they may be important, are outside the scope of the CC's audit function and would be better addressed directly to the Minister for the Environment (Minister) as policy advice. For this reason the Environmental Protection Authority's (EPA) recommendations should only consider matters which are within the scope of an audit of the FMP, or where compelling evidence is presented and should refer other matters of policy to the Minister.</p>
2	2 (53, 87)	The audit does not give adequate recognition to the significant progress that has been made by the Department and the Forest Products Commission in implementing the forest management practices laid out in the FMP.	C	<p>The audit provides information on the implementation of actions by the Department and the Forest Products Commission. The information is provided in the sections on 'Progress with implementation of actions proposed'.</p> <p>The Conservation Commission acknowledges the positive outcomes in a range of areas. The Conservation Commission recognises the progress that has been made by the Department and the Forest Products Commission in implementing forest management practices laid out in the FMP.</p>	<p>Agreed.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
3	1 (46)	The focus of the audit should have been on assessing the effectiveness of the FMP.	C	The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.	Note this response is inconsistent with the response in relation to comment issue 1 of the CC.
4	1 (53)	The audits assessment and evaluation places undue emphasis on the precautionary principle to guide its recommendations.	C	The Conservation Commission has sought, and continues to seek, an approach to forest management that respects intergenerational equity, biological diversity and ecological integrity while providing for as full a range of forest values and uses as reasonable. Where the Conservation Commission has concluded that there are threats of serious or irreversible damage, it has adopted a precautionary position.	The CC proposes a wide-ranging review and changes to forest management on all matters to do with climate change. This is justified by merely referring to the precautionary principle. The scope of the proposed review implies that reduced activity is the primary action to deal with this 'threat'. This approach ignores the option of increased activity such as thinning which increases water availability to plants and water flows in streams, thereby reducing the risk of environmental and economic damage from climate change. Surprisingly the audit puts forward the proposition that water availability for human consumption (and presumably also for biodiversity values) may not be sustainable but fails to contemplate the serious consequences of this outcome or the measures that could be adopted to mitigate them.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
5	1 (53)	The audit has little emphasis on social and economic aspects of ecologically sustainable forest management.	C	<p>The audit reflects the structure and the required performance criteria of the FMP.</p> <p>The section in the audit on Socio-economic benefits identifies the progress with implementation of actions under this criterion and provides reports on the two key performance indicators (KPI); KPI 26 Number, range and use of recreation/tourism activities available by proposed land category in the plan area and KPI 27 Basic raw materials.</p>	<p>Note this response is inconsistent with the approach taken to climate change comment issue 1 of the CC.</p> <p>Social and economic benefits are essentially ignored by the audit. While the audit seeks to draw in issues outside the audit process such as its concerns regarding climate change, it fails to identify the impact of the FMP on the social and economic fabric of south-west communities and suggest any response to minimise those impacts. If the EPA considers that broader issues such as climate change can be raised then it is appropriate that it also consider issues associated with the social and economic benefits arising from the forest.</p> <p>The failure to adequately attend to the social and economic impacts of the FMP is a major shortcoming of the audit. It is possible to take action to address this issue through the EPA's recommendations to the Minister.</p>
6	1 (35)	Recommendations in the audit do not reflect an appropriate balance of socio-economic and heritage values against other Montreal criteria.	C	The audit reflects the structure and the required performance criteria of the FMP.	Refer response issue 5.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
110	1 (53)	Fundamental bias in audit – the audit infers that timber production represents a significant threat.	A	<p>Audit does not infer that timber production represents a significant threat.</p> <p>The FMP has been assessed to meet ESFM principles and timber harvesting is not considered a threat to forest if managed within the principles of ESFM.</p>	<p>FPC considers that, given the nature of threats facing the forest and the information available, there is excessive attention given to timber production and the parts of the forest where timber production occurs and less attention given to threats faced by the forest in the conservation reserve system. There is an implied assumption in the audit and the FMP that reservation, in itself, is a sufficient action to ensure biological conservation. It is also inferred, by the level of attention given to it, that timber production represents a significant threat that requires further controls.</p>
7	1 (53)	The audit does not provide a measure of performance of other forest users (other than FPC) or the Department.	C	<p>The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.</p> <p>The audit reports on the performance of the agencies that are responsible for implementing actions under the FMP, this includes the Department and other proponents.</p> <p>Noted.</p>	<p>While a number of shortcomings in FPC operational performance are noted in the audit – and the FPC acknowledges that this level of accountability is appropriate for transparency and continuous improvement – there is no measure of the performance of other forest users, or DEC. There have been incidents where there have been breaches of guidelines and procedures by other parties, and by failing to identify them; the audit is not even-handed in its treatment of FPC in comparison to other forest users and managers.</p>
8	1 (53)	The implementation of the FMP and forest management is well administered.	E	Noted.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
9	1 (53)	At a time of restricted agency resources, recommendations in the audit should be subject to an independent analysis as to the cost/benefit/risk being addressed.	C	<p>Under section 19 of the <i>Conservation and Land Management Act 1984</i> (CALM Act), it is the function of the Conservation Commission to assess and audit the performance of the Department and the Forests Products Commission in carrying out and complying with the management plans.</p> <p>Under the FMP, the Conservation Commission is independent in its auditing function.</p> <p>Recommendations on climate change that go beyond what is required for the implementation of the FMP acknowledge the need for additional resources.</p>	<p>The FMP has added considerable cost to forest management, and in some cases, the measures provide, at best, a theoretical benefit. The process of the audit of the FMP should not only look at the achievement of the FMP's targets, but also their real cost. Despite a 60% reduction in the scale of timber production under the current FMP the actual cost of timber planning and management has increased very significantly.</p> <p>FPC contends that the additional actions proposed by the CC under the audit are neither necessary nor cost-effective methods of delivery of the desired outcomes. Prior to recommending on a range of actions which are not substantiated as being necessary, the EPA should require a more thorough examination of the cost and benefit of implementation of those measures.</p>
10	2 (53, 87)	Recommendations proposed by the Conservation Commission are neither necessary nor cost effective methods of delivering desired outcomes.	D	<p>The Conservation Commission considers that all recommendations made in the audit are necessary.</p> <p>The majority of the recommendations provided in the audit reiterate the need to implement actions to achieve conformity with the FMP.</p>	Refer response issue 9.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
16	2 (46, 87)	Recommendation for further resources for implementing the Plan are unrealistic.	D	<p>The Conservation Commission considered that it may be necessary for the Department, in consultation with the Conservation Commission to reconsider priorities and allocate resources accordingly.</p> <p>Given the resourcing constraints experienced in the implementation of the current plan, the Conservation Commission suggests that additional resources will be required for the preparation and implementation of the next forest management plan.</p>	Refer response issue 9.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
11	2 (23, 24)	There is a need for independent assessment of the implementation of the FMP, independent monitoring of activities and independent verification of facts and figures.	C	<p>Under section 19 of the CALM Act, it is the function of the Conservation Commission to assess and audit the performance of the Department and the Forests Products Commission in carrying out and complying with the management plans.</p> <p>The Conservation Commission undertakes independent audits to assist it in assessing the extent to which management of land to which the plan applies is undertaken in accordance with the plan.</p> <p>The mid-term audit will be reviewed by the Environmental Protection Authority.</p> <p>It should be noted that in November 2000 legislation was enacted to provide for the separation of the commercial timber production functions of the Department from its conservation functions. The <i>Forest Products Act 2000</i> established the Forest Products Commission, which replaced the Department of Conservation and Land Management, as the forestry agency responsible for commercial forest activities.</p>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
12	4 (35, 46, 53, 87)	The audit does not provide scientific or other evidence to support the arguments made by the Conservation Commission.	C	Views or arguments presented by the Conservation Commission are those of the Conservation Commission and are based on information that has been provided by the managing agencies.	Despite the failure to present any evidence in the audit that the measures prescribed in the FMP are inadequate or to identify a specific additional risk or threat it concludes that "a more strategic review of forest management under a changing climate is required." Despite its failure to describe the risks to be audit then identifies at great length the matters to be reviewed and the actions to be considered.
13	2 (78, 76)	The expertise of the Conservation Commission in assessing forestry and/or fire management is questioned.	F	Outside the scope of the audit. The establishment and functions of the Conservation Commission are determined by sections 18 and 19 of the CALM Act and the members are appointed by the Governor on the nomination of the Minister for the Environment.	N/A.
14	7 (74, 2, 3, 73, 80, 81, 83)	Generally agree with Conservation Commission's recommendations from the audit.	E	Noted.	Refer response issue 1.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
15	2 (35, 46)	The results from FORESTCHECK and the Kingston study have not been taken into account in the audit.	C	<p>Not required.</p> <p>The purpose of the audit was to address the extent to which management of land to which the plan applies has been undertaken in accordance with the plan and include consideration of the extent to which all key performance targets have been achieved.</p> <p>Where information from FORESTCHECK relates to an action it has been considered in the audit.</p> <p>Information on FORESTCHECK can be found at http://www.dec.wa.gov.au/science-and-research/landscape-research/forestcheck-index-page.html</p> <p>Where data from FORESTCHECK will improve future reporting on KPIs, the Department in consultation with the Conservation Commission will consider reviewing the relevant KPI protocols.</p>	<p>There is emerging evidence from Forestcheck that timber harvesting only results in a short term impact on species diversity, and therefore several of the theoretical measures introduced in the FMP must be brought into question. For example, removing unnecessary reserves, such as "fauna habitat zones" and "non-old -growth" mapped as "old-growth" would assist in improving the average quality of logs, and their value should be assessed as a matter of priority.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
17	1 (7)	Share the concern of the Conservation Commission with regard to multiple use outcomes expected from current forest management practices.	E	<p>The Conservation Commission's concern related to Objective 21 (Water). The Conservation Commission is of the view that the objective for water may be overly ambitious with regard to the desire to protect the ecological integrity and quality of streams, wetlands and their associated vegetation and increase the flow of water.</p>	<p>It is the FPC's view that the CC have not adequately considered the biological benefits to the forests, wetlands and streams and the associated aquatic biota of a program of active catchment management.</p> <p>Even if enhancement of water supply for human consumption is considered unreasonable enhanced stream flow for maintenance of biodiversity must remain an objective.</p> <p>It is a major concern that the CC has not adequately examined this major potential impact on the biological and economic value of the forest.</p> <p>The view that Objective 21 is overly ambitious is not supported for the following reasons:</p> <ul style="list-style-type: none"> - alternative water sources are less environmentally friendly; - abandoning all biological value in stream zones; - managing vegetation density has been demonstrated to have significant water benefits whilst also sustaining forest values. <p>The present state government has publicly announced that it will not provide financial support to the native forest timber industry.</p>
18	41 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 32,33)	Government should cease financially supporting the native forest timber industry.	F	<p>Outside the scope of the audit.</p> <p>The FMP provides for a native forest timber industry.</p>	<p>The present state government has publicly announced that it will not provide financial support to the native forest timber industry.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
19	63 (1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 24, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 71, 73, 74, 75, 80, 81, 83, 84)	The native forest timber industry is not ecologically sustainable or economically viable.	F	<p>Outside the scope of the audit.</p> <p>Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management.</p> <p>The plan has been assessed by the Environmental Protection Authority under the <i>Environmental Protection Act 1986</i> (EP Act).</p>	Although the native forest timber industry is currently suffering some economic difficulties, largely market driven, the settings on which it is based do provide for an economically viable industry.
20	3 (20, 23, 31)	Call for a moratorium on disturbance activities.	F	<p>Outside the scope of the audit.</p> <p>The FMP provides for multiple-use of State forest and timber reserves. State forest and timber reserves are reserved for the purposes of conservation, recreation, timber production on a sustained yield basis and water catchment protection.</p>	Agreed.
21	20 (1, 2, 3, 9, 12, 24, 29, 31, 36, 37, 43, 51, 72, 73, 74, 75, 80, 81, 83, 86)	Forest management is not ecologically sustainable.	G	<p>Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management.</p> <p>The plan has been assessed by the Environmental Protection Authority under the EP Act.</p>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
22	9 (2, 3, 24, 37, 73, 74, 80, 81, 83)	<p>The five principles of ecologically sustainable forest management are not being complied with.</p>	G	<p>Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management.</p> <p>Audit provides no evidence that the five principles of ESFM are not being complied with.</p>	Agreed.
23	3 (46, 53, 78)	<p>The audit gives excessive attention to timber production and less attention given to threats faced by conservation reserve system.</p> <p>The forest is being conservatively managed with respect to the reservation system (large number of areas where timber harvesting is not permitted).</p>	C	<p>The audit reflects the structure and required performance criteria of the FMP.</p>	<p>FPC considers that, given the nature of threats facing the forest and the information available, there is excessive attention given to timber production and the parts of the forest where timber production occurs and less attention given to threats faced by the forest in the conservation reserve system. There is an implied assumption in the audit and the FMP that reservation, in itself, is a sufficient action to ensure biological conservation.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
24	53 (1, 2, 3, 4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 31, 32, 33, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 72, 73, 74, 80, 81, 83)	The forest is being managed for production values and not for biodiversity, clean air and water, cultural heritage, tourism, recreation and carbon storage.	A	The forest is managed for a range of values, including productive capacity, biodiversity, soil and water, ecosystem health and vitality, natural and cultural values and socio-economic benefits. The audit provides information on each of the actions that guide the management of these values under the FMP. Under the CALM Act and the FMP, State forest and timber reserves are reserved and managed for the purposes of conservation, recreation, timber production on a sustained yield basis and water catchment protection.	Agreed.
25	11 (2, 3, 9, 25, 26, 32, 33, 73, 74, 80, 83)	Propose agroforestry as an alternative to native forest timber harvesting.	F	Outside the scope of the audit. The FMP provides for a native forest timber industry.	Agreed.
26	13 (2, 3, 9, 12, 37, 43, 70, 73, 74, 80, 81, 83, 84)	Propose plantations as an alternative to native forest timber industry.	F	Outside the scope of the audit. The FMP provides for a native forest timber industry.	Agreed.
27	1 (23)	Support the principles of ecologically sustainable forest management.	E	Noted.	Agreed.
	2 (2, 3, 23, 73, 74, 80)	Support implementing the precautionary principle.	E	Noted.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
Biological diversity					
28	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	<p>The sole response to fauna decline cannot be 'more research'.</p> <p>The Department should provide evidence that decline is not due to management actions.</p>	E	<p>Noted.</p> <p>The Conservation Commission expects that the responses for shortfalls relating to fauna give serious consideration to going beyond a call for further research and monitoring and, where practicable, the Conservation Commission expects the Department to provide a proposed management response. Where the Department has indicated that a shortfall is unrelated to management activities, the Conservation Commission expect that such a conclusion will be substantiated.</p>	N/A.
29	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 74, 73, 80, 81, 83)	Reports on fauna declines should be produced by qualified, experienced and independent people.	A	<p>As per the protocol for KPIs addressing biodiversity (which can be viewed at http://www.dec.wa.gov.au/forests/forest-management-planning/forest-management-plan-2004-2013/fmp-2004-2013-key-performance-indicators.html), the Department's Nature Conservation Division in consultation with Science Division and Regional Services Division, are responsible for providing information for these KPIs.</p> <p>The Conservation Commission acknowledges the qualifications and expertise of the Department's staff.</p>	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
30	14 (2, 3, 9, 12, 20, 31, 43, 68, 70, 73, 74, 80, 81, 83)	Concern that there is a lack of urgency in addressing species decline.	I	<p>The FMP provides a range of actions, measures and timeframes for addressing the protection of biodiversity.</p> <p>As per the protocols for KPIs addressing biodiversity, the Conservation Commission, in consultation with the Department, will develop a response to report findings for those species that have been moved to a higher category of threat. The Conservation Commission are considering the report on the brush-tailed phascogale and are waiting for reports on the three other species identified in the audit (woylie, red-tailed black cockatoo and the Battaling chuditch population).</p>	N/A.
31	6 (3, 29, 31, 37, 68, 86)	Concern for threatened species (flora and/or fauna) declines.	G	<p>The FMP provides a range of actions and measures for the protection of biodiversity.</p> <p>As per the protocols for KPIs addressing biodiversity, the Conservation Commission, in consultation with the Department, will develop a response to report findings for those species that have been moved to a higher category of threat. The Conservation Commission are considering the report on the brush-tailed phascogale and are waiting for the reports on the three other species identified in the audit (woylie, red-tailed black cockatoo and the Battaling chuditch population).</p>	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
32	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Concern for implementation of Fauna Distribution Information System (FDIS). Concern that measures to protect fauna do not trigger effective management responses.	D	<p>The Conservation Commission noted in the audit that it would work with the Forest Products Commission and the Department to address concerns about whether FDIS has the capacity to generate an effective management response.</p> <p>The Conservation Commission has determined, from the independent expert report and through consultation with the Department that FDIS, in principle, would lead to greatly enhanced decision making processes in the management of the forest and the protection of its nature conservation values. The Conservation Commission also considered that the effective implementation of FDIS is an operational matter for the Department to consider, and recommended that the points raised by the independent experts be considered in that process.</p>	Agreed.
33	1 (35)	Need a holistic approach to threatened species management.	G	<p>The FMP provides a range of actions and measures for the protection of biodiversity; including the formal and informal reserve system, provisions for diversity in vegetation structure and protection of specific habitat elements, fauna habitat zones and the FORESTCHECK monitoring program.</p> <p>Measures are implemented at three scales of management; whole of forest, landscape and operational.</p>	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
34	1 (75)	Pre-logging surveys should be required to generate baseline data collection for biodiversity information.	F	Outside the scope of the audit. Biodiversity information is collected via a number of research and monitoring programs including FORESTCHECK, pre-disturbance flora surveys and other species- or area-specific studies.	Agreed.
35	1 (70)	The Forest Products Commission should not be the sole custodian of the Fauna Distribution Information System (FDIS). Concern that old-growth forest is being logged.	A	Inaccurate. The Forest Products Commission is not a custodian of FDIS.	Agreed.
36	6 (2, 9, 21, 62, 71, 75)	Concern that old-growth forest is being logged. (agencies apply a restrictive definition of old-growth; "the number of stumps per hectare" was the only criterion used in WA to define old-growth. Forest with over two stumps per hectare is not classed as 'old-growth' regardless of the quality of the forest, or the size and age of the trees).	C	All old-growth forest is afforded protection under the FMP. The audit identified two incidents relating to old-growth forest. Neither incident resulted in the loss of old-growth area. The criteria for old-growth for inclusion in the Department's corporate database is: <i>Areas greater than two hectares of ecologically mature forest, where the overstorey is in a late mature to senescent growth stage, and where the effects of disturbance (e.g. dieback, timber production, grazing) are either absent or now negligible.</i>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
37	3 (21, 35, 75)	Concern about the process for identifying old growth.	C	<p>The requirements under the FMP are that proposed operational target areas must be checked against Departmental records for the presence of areas that meet the criteria for old-growth forest that have not been identified in the corporate database. The areas adjacent to any old-growth forest patches identified in the corporate database will be inspected in the field. If the boundaries are found to be more extensive than the database indicates, the true boundaries of the area that meets the criteria for old-growth forest reserve are to be identified and the Department's corporate database amended accordingly.</p> <p>In 2005 the Conservation Commission, in consultation with the Department and key stakeholders, produced and published "Assessment Criteria and Process for the Conservation Commission Review of Old-growth Amendments". The document includes the process for public nominations for review of potential old-growth forest areas on indicative timber harvest plans.</p>	<p>Since the inception of the FMP a significant area of "new" old growth has been identified through planning for timber harvesting and subsequently protected from timber harvesting disturbance.</p>
38	1 (53)	Remove areas of non old-growth forest previously mapped as old-growth from informal reserves.	F	<p>Outside the scope of the audit.</p>	<p>Since the inception of the FMP a significant area of "new" old growth has been identified and protected from timber harvesting disturbance. At the least an equivalent area of mapped old growth which is not old growth should be released from informal reservation and made available for timber harvesting.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
39	1 (75)	Concern that Forest Products Commission are cutting down trees that contain habitat for wildlife (hollows).		The FMP provides a range of actions and measures for the protection of biodiversity. Appendix 5 of the FMP and the Silvicultural guidelines outline habitat retention requirements.	Agreed.
40	2 (23, 51)	Protect and conserve Western Australia's native forests and woodlands.	G	Outside the scope of the audit. The plan implements the <i>Protecting our old-growth forests</i> policy for 30 new national parks and includes areas identified through the high conservation value study. Reservation targets for forest ecosystems are generally achieved and in a lot of cases well exceeded except for the ecosystems: Jarrah Rates tingle, Jarrah Red tingle, karri Rates tingle, Bullish and Yate and Darling Scarp. Protection of these ecosystems on private land is required to meet the targets.	Agreed.
41	7 (2, 3, 73, 74, 80, 81, 83)	Call for fauna habitat zones to be linked to create corridors.	G	Outside the scope of the audit. In determining the location of indicative fauna habitat zones, the Department has considered contiguous areas that provide enhanced linkage to other areas of lesser disturbed forest as preferable. The principal purpose of fauna habitat zones is to provide a strategy to meet the plan's objective of ensuring that biodiversity recovers between one rotation and the next. The fauna habitat zones fulfil this purpose by providing a sufficiently extensive network of areas excluded from timber harvesting.	As FHZ's impose significant constraints on timber resource availability the ecological benefits if any that they provide must be determined to provide informed decision making on their continued application or otherwise.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
42	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Support an increase in the size of fauna habitat zones to more than 200ha to provide additional protection for fauna values and biodiversity.	E	Noted. The Conservation Commission and the Department agree that the Guidelines for the Selection of Fauna Habitat Zones will address the size requirements for fauna habitat zones.	Refer response issue 41.
43	8 (2, 3, 73, 74, 75, 80, 81, 83)	Concern about the weaknesses in the location, design and effective ecological functions of fauna habitat zones.	F	Outside the scope of the audit. The principal purpose of fauna habitat zones is to provide a strategy to meet the plan's objective of ensuring that biodiversity recovers between one rotation and the next. The zones fulfil this purpose by providing a sufficiently extensive network of areas excluded from timber harvesting in the mid-term within State forest and timber reserves. The zones are intended to maintain both fauna populations within themselves and to provide a source for the recolonisation of nearby areas after timber harvesting.	Refer response issue 41.
44	2 (46, 53)	The Department to evaluate ecological benefits of fauna habitat zones (in light of data made available in the FORESTCHECK Progress Report 2007-2008).	F	Outside the scope of the audit.	Refer response issue 41.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
45	1 (75)	Area of forest in reserve is not sufficient.	F	<p>Outside the scope of the audit.</p> <p>The plan implements the <i>Protecting our old-growth forests</i> policy for 30 new national parks and includes areas identified through the high conservation value study. Reservation targets for forest ecosystems are generally achieved and in a lot of cases well exceeded except for the ecosystems: Jarrah Rates tingle, Jarrah Red tingle, karri Rates tingle, Bullish and Yate and Darling Scarp. Protection of these ecosystems on private land is required to meet the targets.</p> <p>The mid-term audit highlights the positive outcomes with respect to implementation of reserve proposals under the <i>Protecting our old-growth forests</i> policy.</p>	Agreed.
46	1 (70)	Support the review of the causes of delays in implementation of reserves.	E	Noted.	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
Productive capacity					
47	56 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 72, 73, 75, 85, 86)	All timber harvesting of native forest and woodlands should stop.	F	Outside the scope of the audit. The FMP provides for a native forest timber industry. Note: all areas mapped as jarrah woodland (including those that had been previously cut-over) have been set aside from timber production as informal reserves under the FMP.	Agreed.
48	12 (2, 3, 9, 25, 32, 33, 73, 74, 80, 81, 83, 84)	Phase out native forest timber harvesting (by end of plan).	F	Outside the scope of the audit.	Agreed.
49	12 (2, 3, 9, 32, 33, 70, 73, 74, 75, 80, 81, 83)	High conservation areas (Warrup, Coonan, Meribup) to be excluded from logging immediately.	F	Outside the scope of the audit. Areas considered to be of high conservation value were assessed during the development of the FMP. The outcome, implemented through the FMP, was that areas of forest ecosystems that met the criteria for high conservation value were recommended for addition to the conservation estate, with other areas remaining as State forest and available for timber harvesting. The report <i>Review of High Conservation Values in Western Australia's South-West Forests</i> is available on the Conservation Commission website.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
50	1 (88)	Low rainfall areas (as defined in the submission paper) to be excluded from logging immediately.	F	Outside the scope of the audit.	Agreed.
51	48 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	All logs should be counted towards the allowable cut (killed trees left standing, logs left on ground, piled on landings, firewood, sold or not).	A	Refer information for KPI 5 in the audit. All log products recovered and sold from State forest and timber reserves are tracked for accounting purposes in a computer database known as the Logging Operations Information System (LOIS). This includes log products from mining operations, road and infrastructure clearing. LOIS provides an accurate basis for monitoring sawlog removals but generally provides an underestimate of the total volume of non-sawlog products made available during harvesting if the material produced is not sold. The utilisation monitoring plots (used for reporting on KPI 11) can be used to provide a sample estimate of that portion of the non-sawlog resource made available but not sold or removed. The audit does not indicate that clearfelling of karri is unsustainable.	Agreed.
52	1 (75)	Clearfelling of karri is unsustainable.	A	Action 11.1 and KPI 5 in the audit provide information on the removal of karri sawlog and other bole volume products compared to the sustained yields.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
53	48 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	The allowable volume of karri other bole volume must not be increased.	I	<p>The audit indicates that there is a potential inconsistency between the plan's requirements for karri thinning and the allowed volumes of karri other bole volume.</p> <p>The Conservation Commission will consider the Supplemental advice provided by the Department and will report to the Environmental Protection Authority.</p>	The FPC supports the findings of the supplemental advice provided by DEC.
54	3 (35, 53, 87)	Support a review of the karri other bole volume.	E	Noted.	Refer response issue 53.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
55	11 (2, 3, 9, 12, 29, 36, 37, 43, 51, 70, 73)	The sustained yield under the FMP is not sustainable.	A	<p>The CALM Act requires that timber production in native forests be conducted on a sustained yield basis. The methodology and data used in the sustained yield calculations for the plan were independently reviewed by a panel of experts during the development of the FMP (April 2001 to June 2003; Ferguson et al 2001a, 2001b, 2003)¹.</p> <p>The Panel concluded (Ferguson et al 2001b, page 1): <i>The panel is satisfied that it has considered and addressed the issues repeatedly raised by members of the public and which are said to impact on the calculation of sustained yield. The Panel believes that, in principle, the simulation model uses appropriate data, assumptions and methods in calculating sustained yield.</i></p> <p>Action 11.1 and KPI 5in the audit provide information on sustained yields.</p>	Agreed.

¹ Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001a). *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 of Western Australia, Perth.

Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001b). Calculating the Sustained Yield for the Draft Forest Management Plan: A Preliminary Stage 2 Report. Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Ferguson, I., Adams, M., Bradshaw, J., Davey, S., McCormack, R. and Young, J. (2003). *Calculating Sustained Yield for the Forest Management Plan (2004-2013)*. Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
56	10 (35, 46)	Sustained yield for jarrah sawlogs should not be adjusted.	I	Noted. The Conservation Commission will consider the Supplemental advice provided by the Department and will report to the Environmental Protection Authority.	The FPC supports the findings of the supplemental advice provided by DEC.
57	8 (2, 3, 9, 12, 29, 43, 70, 73)	No confidence in the Department's data or modeling to estimate the likely yield of timber from our native forests.	F	Outside the scope of the audit. The Conservation Commission is satisfied with the Department's data modeling to estimate native forest sustained timber yields. The CALM Act requires that timber production in native forests be conducted on a sustained yield basis. The methodology and data used in the sustained yield calculations for the plan were independently reviewed by a panel of experts during the development of the FMP (April 2001 to June 2003; Ferguson et al 2001a, 2001b, 2003) ² . The Panel concluded (Ferguson et al 2001b, page 1): <i>The panel is satisfied that it has considered and addressed the issues repeatedly raised by members of the public and which are said to impact on the calculation of sustained yield. The Panel believes that, in principle, the simulation model uses appropriate data, assumptions and methods in calculating sustained yield.</i>	Agreed.

² Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001a). *Calculating Sustained Yield for the Forest Management Plan (2004-2013): A preliminary Review*. Report to the Conservation Commission of W.A. by the Independent Panel. Conservation Commission of Western Australia, Perth.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
58	7 (2, 3, 73, 74, 80, 81, 83)	Shortfalls identified in the Swan region indicate issues with: the sustained yield calculation assumptions; methodology of timber harvesting practices; and/or unsustainability of timber harvesting.	A	Factors giving rise to differences between realised and forecast jarrah sawlog yields during 2004-2007 are provided in the supplemental advice report prepared by the Department (available at www.conservation.wa.gov.au). These include: conservative assessment of sawlog volumes within trees at the first inventory measurement, growth in sawlog volume between the first inventory measurement and the second measurement, variation between modelled and actual treemarking and variation between the modelled and applied sawlog specifications.	The FPC supports the findings of the supplemental advice provided by DEC.

Ferguson, I.F., Adams, M., Bradshaw, J., Davey, S., McCormack, R., Young, J. (2001b). Calculating the Sustained Yield for the Draft Forest Management Plan: A Preliminary Stage 2 Report. Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Ferguson, I., Adams, M., Bradshaw, J., Davey, S., McCormack, R. and Young, J. (2005). *Calculating Sustained Yield for the Forest Management Plan (2004-2013)*. Report for the Conservation Commission of Western Australia by the Independent Panel. Conservation Commission of Western Australia, Perth.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
59	1 (70)	Successful regeneration of the understorey species (present before logging) should be a criterion for the effectiveness of regeneration.	A	<p>FORESTCHECK monitors understorey richness and abundance in the various silvicultural treatments of management jarrah forest (shelterwood, selective cut and gap release) and in uncut reference forest. FORESTCHECK also compares species richness, abundance and composition recorded within and between silvicultural treatment grids to those in uncut reference grids, and also compares results from plots over time. Data from FORESTCHECK can be viewed on the Department's website (www.dec.wa.gov.au).</p> <p>Successful regeneration of understorey species is a criterion for landing and snag track rehabilitation. Monitoring and success criteria for understorey regeneration are outlined in the silvicultural guidelines.</p>	<p>Forestcheck monitoring of harvested areas indicates that regeneration of understorey plants is generally successful across a range of silvicultural treatments and site types. Detailed assessment of understorey regeneration is not considered practical or cost effective on every harvested area, and this issue is best addressed by continuing with and, where possible expanding the scope of Forestcheck monitoring.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
60	10 (2, 3, 9, 12, 43, 66, 68, 70, 73, 84)	Native forest material must be excluded from energy production materials.	F	Outside the scope of the audit.	<p>Available markets for low grade forest residues are significantly constraining the ability to achieve required silvicultural outcomes following timber harvesting. Use of this material for energy production within the allowable yields provided by the FMP offers a real alternative, while also providing energy production from a renewable resource. A significant amount of forest residue material is currently burnt to waste in situ following timber harvesting operations which could otherwise be utilized. The use of low grade residues for energy also makes a contribution to reducing greenhouse gas emissions.</p> <p>On page 69 of the audit the CC states "The Conservation Commission considers the establishment of markets to facilitate the full utilisation of wood products from areas harvested should be a priority for the Forest Products Commission."</p>
61	7 (3, 23, 24, 29, 31, 37, 75)	Concern for damage to standing trees and understorey from machine harvesting.	C	<p>The FMP and silvicultural guidelines provide for an acceptable level of disturbance to standing trees and understorey during harvesting activities. Appendix 5 of the FMP and the silvicultural guidelines outline measures to reduce the impact of silvicultural operations on flora diversity and abundance.</p> <p>The audit provides information on compliance monitoring of silvicultural standards. With respect to damage to crop trees, the audit did not identify this as a significant issue.</p>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
62	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern that wildflower and seed picking is not monitored and it should be phased out.	A	The FMP provides for multiple-use of State forest and timber reserves. The Department's <i>Management of Commercial Harvesting of Protected Flora in Western Australia</i> outlines monitoring of the wildflower and seed picking industry. The Department also has an Operations manual for Management of the Flora Industry which covers policy, management, regional operations and research on the flora industry.	N/A.
63	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern that forest management (timber harvesting and burning) has adverse effects on apiculture.	G	While the audit did not identify that forest management is having an adverse effect on apiculture it is acknowledged that disturbance activities can have adverse effects on apiculture. The planning checklist for disturbance activities includes measures to identify and manage apiary sites.	Agreed.
64	8 (2, 3, 9, 12, 29, 43, 70, 73)	Apiary sites should be progressively removed from the conservation estate.	F	Outside the scope of the audit.	N/A.
65	1 (53)	Audit fails to identify area of forest requiring rehabilitation from mining.	F	Outside the scope of the audit. Reporting on areas requiring mining rehabilitation is not a requirement of the FMP.	This is an example of inconsistency in approach where FPC is required to report on its regeneration (etc) performance but other users have no similar obligations.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
66	8 (2, 3, 9, 12, 29, 43, 70, 73)	The figures for employment in each of native forest logging operations, processing and downstream manufacture should be made publicly available (KPI 13).	B	The protocol for KPI 13 is being developed. At the time of writing the audit efforts were made to address this KPI using information from the Australian Bureau of Statistics and the Australian Bureau of Agricultural and Resource Economics, however the information did not sufficiently address employment for native forest operations in Western Australia. Where information was available that addressed general timber industry employment statistics it did not cover the required reporting period.	Agreed.
67	1 (68)	Lack of guidelines for management of blackbutt.	A	The Jarrah silvicultural guidelines provide for the management of blackbutt.	Agreed.
68	1 (68)	Blackbutt should be included in old-growth forests.	A	Blackbutt is included old-growth forest if it meets the criteria. Blackbutt falls under the criteria for Jarrah forest.	Agreed.
69	1 (68)	There should be consistency between the FMP and the Forest Products Commission measurements of timber yields to avoid mistakes.	C	Refer to information on KPI 5 in the audit. Sustained yield is determined in units of volume and log deliveries are recorded in tones, therefore appropriate weight:volume conversion factors have been determined and are applied to the various products. The reconciliation of sustained yield and removals is undertaken on a volumetric basis.	Agreed.
Ecosystem health and vitality					
70	1 (72)	Section in audit dealing with ecosystem health is weak.	I	The audit reflects the structure and required performance criteria of the FMP.	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
71	2 (32, 33)	Concern with agencies inability to deal with increasing threats to forest ecological health.	G	<p>The scope of this issue is broad and difficult to address. The audit does not identify an inability to deal with increasing threats to forest ecological health.</p> <p>Objective 18 in the audit identifies findings with respect to weeds, pests and diseases.</p> <p>Objective 18: The Department maintains a coordinated approach to addressing the management of weeds, pests and diseases across land tenures and continues to implement appropriate management practices and control programs.</p> <p>The Department currently has an informal forest health monitoring system in place and forest health research is undertaken. Surveillance and mapping of <i>Phytophthora</i> dieback disease has been one of the longest running forest health projects. The Department is collaborating in research to investigate and monitor the cause of decline in tuart and wandoo forests and woodlands.</p>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
72	43 (4, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 84)	All burning in native forest and woodlands should stop.	F	Outside the scope of the audit.	The FPC supports DEC'S prescribed burning and fire management policy. Prescribed fire management is a legitimate land management tool employed to meet a number of protection and conservation objectives.
73	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	Biodiversity is not given adequate weight as an objective for fire management.	E	Noted.	Refer response issue 72.
74	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	Better management of prescribed burning.	C	The Conservation Commission supports the Department's management of prescribed burning. The Conservation Commission generally supports the thrust of the fire management policy. The Conservation Commission would like to see further refinement in the implementation of the policy.	Refer response issue 72.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
75	51 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73)	The principles of ESFM are being ignored in the prescribed burning program.	A	<p>The audit does not indicate that the principles of ecologically sustainable forest management are being ignored in the prescribed burning program.</p> <p>The Conservation Commission generally supports the thrust of the fire management policy. The Conservation Commission would like to see further refinement in the implementation of the policy.</p>	Refer response issue 72.
76	8 (2, 3, 9, 12, 29, 43, 70, 73)	Concern with the amount and frequency of burning in the conservation estate.	G	Outside the scope of the audit.	Refer response issue 72.
77	2 (46, 87)	Cannot agree with the conclusion that current fire management policy does not adequately account for biodiversity outcomes.	D	<p>The Conservation Commission generally supports the thrust of the fire management policy and is aware that there is evidence that biodiversity is being addressed in fire planning. The Conservation Commission would like to see further refinement in the implementation of the policy.</p> <p>The Conservation Commission would like to see a clear and demonstrated link between special biodiversity requirements and the details of individual fire prescriptions become a routine outcome of fire management planning.</p>	Refer response issue 72.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
78	2 (35, 76)	Concern that the approach to plan for biodiversity as a primary objective in prescribed burning is counterproductive and increases the risk to both biological and social values (fails to afford any priority to the protection of human lives).	C	The Conservation Commission has not recommended that biodiversity become the primary objective for fire management. The Conservation Commission is concerned that biodiversity is given inadequate weight as an objective for fire management and has not yet been convinced that a clear and demonstrated link between special biodiversity requirements and the details of individual fire prescriptions has become a routine outcome of fire management planning.	Refer response issue 72.
79	49 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 36, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	Agree that post-burn monitoring and review must become a routine outcome of prescribed burns.	E	Noted.	Refer response issue 72.
80	41 (3, 4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	Conservation Commission must be more involved in monitoring and auditing the fire Department's management and have the resources to do so.	I	The Conservation Commission is satisfied with its level of auditing under the FMP.	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION . ADDITIONAL RESPONSE
81	1 (76)	The Department's fire management should be independently audited.	F	<p>Outside the scope of the audit.</p> <p>The Conservation Commission has undertaken two independent audits of the Department's fire management; Master Burn Plan Assessment and Prescribed Burning. Reports are available on the Conservation Commission's website (www.conservation.wa.gov.au).</p> <p>A number of independent reviews on fire management have been published since 2004 including the Environmental Protection Authority's Fire Review Oct 2004 on the Swan, South West and Warren Regions.</p>	N/A.
82	1 (46)	Support recommendations that streamline the prescribed burn program.	E	Noted.	Refer response issue 72.
83	3 (35, 46, 76)	Do not support recommendations that hinder prescribed burn process.	E	Noted.	Refer response issue 72.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
84	8 (2, 3, 9, 12, 29, 43, 70, 73)	KPI for fire is not meaningful in addressing biodiversity conservation (flora, fauna, ecosystems and ecosystem processes).	C	<p>Refer to information on KPI 16 in the audit.</p> <p>The Department applies prescribed fire to achieve a 'time since fire' frequency distribution. This approach ensures a fire induced diversity of the vegetation across the landscape. Diversity in vegetation across the landscape ensures a diversity of habitats that facilitates diversity and persistence of the biota dependent on these habitats.</p> <p>The objective of KPI 16 is to assess achievement of targets in relation to the management of fire by providing information on the temporal diversity of 'time since fire' within each Landscape Conservation Unit.</p>	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
86	15 (2, 3, 9, 12, 29, 35, 36, 37, 43, 51, 68, 69, 70, 73, 86)	Concern for dieback issues.	E	<p>Noted.</p> <p>The Conservation Commission is aware that the issues surrounding <i>Phytophthora</i> dieback management requires a whole-of-government approach to be applied across all lands. The Conservation Commission is undertaking a performance assessment of <i>Phytophthora</i> dieback management on vested lands.</p> <p>The Department and the Forest Products Commission conduct disturbance activities with regard to the Management of <i>Phytophthora</i> and Disease Caused By It policy and in accordance with Volume 1 of <i>Phytophthora cinnamomi</i> and Disease Caused By It Guidelines.</p>	Agreed.
87	8 (2, 3, 9, 12, 29, 43, 70, 73)	Support Conservation Commission's recommendation that dieback requires a whole-of-government approach across all lands.	E	Noted.	Agreed.
88	1 (75)	Concern for salinity impacts from timber harvesting.	G	<p>Outside the scope of the audit.</p> <p>The impact of timber harvesting on salinity has been the subject of significant research and findings from this research has been included in current silvicultural guidelines.</p>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
89	2 (3, 29, 75)	Concern with tree health.	G	<p>The scope of this issue is broad and difficult to address. Implementation of actions relating to dieback have been addressed in the audit.</p> <p>Tree health is being addressed by a range of groups and organisations including: the Department, the Forest Products Commission, Centre for Phytophthora Science and Management, Tuart Health Research Group, Wandoo Recovery Group and the State Centre for Climate Change, Woodland & Forest Health.</p>	Agreed.
90	1 (75)	Concern with plantation wildings in native forest.	F	<p>This issue was not addressed in the audit.</p> <p>Operational.</p> <p>Noted.</p>	The FPC implements a program for the control of plantation wildings emanating from FPC managed plantations.
91	8 (2, 3, 9, 12, 29, 43, 70, 73)	There needs to be greatly increased funding and higher priority given to weed, pest and disease eradication and control (especially <i>Pythophthora</i> dieback).	I	<p>Refer to information on Action 18.4 in the audit.</p> <p>The Department continues to implement appropriate weed, pest and disease management practices and control programs.</p> <p>The Department's annual report provides details on funding and control programs implemented across Departmental-managed land, including land managed under the FMP.</p>	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
92	1 (68)	Research is inadequate to fully understand the effects of fire on the forest ecosystem.	F	<p>Outside the scope of the audit.</p> <p>A significant amount of research has been undertaken to address the effects of fire on the forest ecosystem. Fire and ecosystem health is a research priority under the Science Division's Landscape Conservation program. The range of research activities are listed and briefly described in the <i>Science Division's Research Activity report</i> which can be viewed online at the Department's website.</p>	Refer response issue 72.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
Soil and water					
93	7 (3, 23, 24, 29, 31, 37, 75)	Concern with machine harvesting impacts on soil.	D	<p>Noted.</p> <p>The Conservation Commission has received supplementary advice from the Forest Products Commission on the use of machine harvesting and soil disturbance. The Conservation Commission will consider this information in addressing the shortfall for KPI 21. The Forest Products Commission's report has been provided to the Environmental Protection Authority.</p> <p>The Conservation Commission notes that current management practices under the FMP to reduce unnecessary soil disturbance have evolved on the basis of detailed field observations and improved knowledge and research which has quantified some specific impacts of timber harvesting on the soils of the jarrah and karri forests. All harvesting operations are monitored for soil disturbance according to the requirements of the <i>Interim Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests</i> DEC SFM Manual No1 2007.</p>	<p>It is recognized that timber harvesting machinery can have significant impacts on soil properties. (refer Information Sheet 19/2009 Science Division, Department of Environment and Conservation).</p> <p>Greatest impacts occur where machine activity is highest such as on extraction tracks and landings. Concentrating machine activity onto as few extraction tracks as necessary to permit log extraction provides the most significant reduction in soil impacts.</p> <p>Well planned and managed harvesting operations can contain soil impacts to within acceptable limits.</p> <p>Supplemental advice on machine harvesting has been provided to the CC by FPC. (copy attached)</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
94	10 (2, 3, 9, 12, 23, 29, 37, 43, 70, 73)	The use of machine harvesters should be suspended until the environmental impacts are assessed.	1	The FMP and silvicultural guidelines provide for an acceptable level of disturbance during harvesting activities. Timber harvesting operations are monitored to assess levels of disturbance with the intention of addressing environmental impacts before they go beyond allowable limits. Outside the scope of the audit.	Agreed.
95	1 (46)	The current application of the Trafficability Index is inconsistent.	1		The implementation of very rigorous soil management requirements by DEC (of which the Trafficability Index is a component) has resulted in significant constraints on FPC operations as well as additional costs. The FPC continues to seek consistency of application of the soil management requirements from DEC as well as improvements to the soil management system.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
96	3 (3, 23, 29, 37)	Concern with increased machine access during moist soil conditions (with respect to increased spread of <i>Phytophthora</i> dieback).	E	Noted. Increased access was conditional on an increased requirement to conduct monitoring and surveillance. Access during moist soil conditions is depending on soil type and, with the exception of karri thinning operation, is now almost entirely focused on upland gravels and sands. The Conservation Commission considers that there is enough flexibility in the current moist soils approval system for the Department and the Forest Products Commission to work through the soil and hygiene management issue. The Department has put in place a process to improve the planning and approval of the soil and hygiene management issue. This process will be reviewed over the next two years.	Agreed.
97	9 (2, 3, 9, 12, 29, 43, 70, 73, 77)	Support the recommendation for a review of water production from forested areas.	E	Noted.	Refer response issue 17.
98	1 (53)	Do not support the view that Objective 21 may be overly ambitious.	E	Noted.	Refer response issue 17.
99	7 (2, 3, 9, 12, 43, 70, 73)	Increase stream buffers.	F	Outside the scope of the audit. Refer to information on Action 33.1 in the audit.	Agreed.
100	3 (36, 37, 51)	Support initiatives outlined in the Soil and water chapter of the audit report.	E	Noted.	refer response issue 17.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
Global carbon cycles					
101	17 (2, 3, 7, 9, 12, 31, 35, 36, 43, 51, 70, 73, 74, 77, 80, 81, 83)	Support the recommendation for an independent taskforce to assess forest management under a changing climate.	E	Noted.	FPC's view is that the review as suggested by the CC is unnecessary, and the measures that it suggests are not based on any evidence. The proposal by the audit fails to present any evidence to justify further extension of the conservative measures already in place in the FMP. It supports its proposal with comments such as "some sections of the community are of the view", "significant changes in climate change science and policy since 2004" and, of course "the precautionary principle." The commentary contains a clear bias against timber production and favouring approaches which increase reservation. The measures suggested by the audit do not indicate how they satisfy the precautionary principle as they do not of themselves decrease the climate change threat.
102	3 (53, 78, 87)	Does not support recommendation for a taskforce to address forest management under a changing climate.	E	Noted.	FPC does not support the concept of an independent task force. Refer response issue 101.
103	3 (46, 53, 87)	Support for a proper scientific study to amass information for preparation of next plan.	E	Noted.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
116	1 (7)	Supports the Conservation Commission's recommendations for a whole-of-government approach to setting up an independent task force and agrees that urgent responses need to be included within the 2013 scope of the current FMP (with respect to water supply).	E	The Conservation Commission notes that the issue of water supply would be addressed as part of the independent expert review (recommended as an outcome of the audit).	FPC does not support the concept of an independent task force. Refer response issue 101.
104	8 (2, 3, 7, 9, 12, 43, 70, 73)	Suggestions for taskforce representation; terms of reference.	F	Outside the scope of the audit.	FPC does not support the concept of an independent task force. Refer response issue 101.
105	39 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	Recommendations of the independent taskforce must include binding timelines and an understanding that there will be real consequences for non-compliance.	F	Outside the scope of the audit.	FPC does not support the concept of an independent task force. Refer response issue 101.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
106	1 (35)	Concerned that terms of reference for taskforce suggest that timber harvesting and prescribed burning present threats to the forest.	A	<p>The terms of reference do not suggest that timber harvesting and prescribed burning present threats to the forest.</p> <p>The Conservation Commission noted a concern for the health and vitality of the forest ecosystems due to the cumulative threats of weed and pest incursions, the continuing spread of dieback, disturbances cause by prescribed fire, wildfire and timber harvesting combined with the impacts of climate change.</p> <p>The reference to 'threats' may have been taken out of context. The Conservation Commission was referring to the threats of weed and pest incursions.</p> <p>The FMP has been assessed to meet ESFM principles and timber harvesting and burning are not considered threats to the forest if managed within the principles of ESFM.</p>	<p>FPC does not support the concept of an independent task force.</p> <p>Refer response issue 101.</p>
107	40 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68)	An immediate moratorium on all logging and burning needs to be put in place to protect all areas of the forest that are acknowledged as particularly vulnerable to the effects of climate change.	F	<p>The Conservation Commission is of the view that should the independent expert review (recommended as an outcome of the audit) identify issues requiring an immediate response to avoid future opportunities being lost, then these measures should be implemented from the end of 2009.</p>	<p>Outside the scope of the audit.</p> <p>FPC does not support the concept of an independent task force.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
108	49 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73, 88)	Logging in eastern jarrah forest should be stopped immediately.	F	The Conservation Commission has considered the need to change forest management practices in advance of the adoption of the next FMP. The Conservation Commission believes that should the independent expert review (recommended as part of the audit) identify issues requiring an immediate response to avoid future opportunities being lost, then these measures should be implemented from the end of 2009.	Outside the scope of the Audit. There is no evidence on which to base a cessation of timber harvesting in the eastern jarrah forest. FPC does not support the concept of an independent task force.
109	12 (2, 3, 9, 12, 43, 70, 73, 74, 75, 80, 81, 83)	Concern for regeneration success.	E	Noted.	In Table A18 page 163 of audit it indicates that all areas of jarrah forest sampled were adequately regenerated. FPC has also provided supplemental advice on regeneration in the eastern jarrah forest to the CC which does not suggest a need for concern (copy attached).
111	1 (77)	Supports Conservation Commission view that an urgent review of the quantity and quality of water use from forests under a drying climate is required.	E	Noted.	Refer response issue 17.
112	2 (7,77)	It is reasonable for forests to be managed to maintain or enhance water supply in a drying climate.	E	Noted.	Refer response issue 17.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
113	3 (36, 37, 51)	Water extraction and drying climate is detrimental to the forest.	G	<p>The scope of this issue is broad and difficult to address. The audit does not identify that water extraction is detrimental to the forest.</p> <p>In the audit findings the Conservation Commission noted its concern that the objective for water may be overly ambitious with regard to the desire to protect the ecological integrity and quality of streams, wetlands and their associated vegetation and increase the flow of water.</p>	Refer response issue 17.
114	1 (88)	Concerned that major changes in annual rainfall volumes and distribution have not been factored into past and current management.		The Department to provide response	N/A.
115	9 (2, 3, 9, 12, 43, 51, 70, 73, 88)	Forest management documents should be amended to reflect changed isohyets (isohyet information provided as part of the submission).		The Department to provide response	N/A.
117	1 (77)	Management of the northern Jarrah forest in a drying climate has not been given enough importance in the audit.	D	<p>Noted.</p> <p>The Conservation Commission notes that this issue would be addressed as part of the independent expert review (recommended as an outcome of the audit).</p>	<p>Outside the scope of the audit.</p> <p>FPC does not support the concept of an independent task force.</p>

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
118	39 (4, 5, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66)	The Conservation Commission has failed to make a single recommendation to immediately change any existing forest management practices.	I	The audit did not provide any evidence to suggest it would be necessary to immediately change any existing forest management practices. The Conservation Commission has, however, requested further information on a number of issues of concern.	N/A.
119	7 (2, 3, 9, 12, 43, 70, 73)	Conservation Commissions are not commensurate with the threats posed by climate change.	I	The Conservation Commission is of the view that the recommendations made in the audit are commensurate with the threats posed by climate change.	Refer response issue 1.
120	7 (2, 3, 9, 12, 43, 70, 73)	Audit does not address the contribution to greenhouse gas emissions from timber harvesting and burning.	F	Outside the scope of the audit.	Agreed.
121	58 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 31, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 68, 70, 73, 74, 75, 80, 81, 83, 86)	Carbon accounting for WA native forests should be undertaken (acknowledge carbon stores in our native forest).	I	Noted. The Department and the Forest Products Commission identified in the audit, that continued work on the impacts of climate change needs to be cognisant of the improved capacity to model carbon balance of forests at a regional level.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
122	8 (2, 3, 46, 73, 74, 80, 81, 83)	FMP acknowledges the importance of seeking to sustain the contribution of the forest to global carbon cycles but the Audit provides scant detail concerning operational applications of this important matter in the first five years of the plan.	A	The audit provides information on management actions under the FMP that seek to sustain the contribution of the forest to global carbon cycles including; increasing carbon accumulation in forests by rehabilitating degraded or harvested forest areas (e.g. Actions 10.3, 15.1, 15.3, 15.4, 28.1, 29.4); seeking to reduce the permanent loss of forests areas as a result of development and seeking the replacement of forest areas permanently lost to development (e.g. Actions 10.1, 28.1) and employing appropriate forest harvesting practices to protect vegetation and soil carbon (e.g. Actions 11.6, 20.1, 20.3, 20.4, 20.5).	Agreed.
123	47 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 29, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	The Conservation Commission recommended the Department give 'greater weight' to climate change whenever it makes management decisions but there is a lack of clarity about what 'greater weight' is or should mean.	C	The Conservation Commission identified in the audit that 'greater weight' would mean taking account of climate change in fauna habitat zone selection, influencing the priority setting for the implementation of recovery plans for threatened species and preferentially scheduling future timber harvesting operations in more resilient portions of State forest as far as is practicable.	There is no evidence on which to base the preferential scheduling of future timber harvesting operations in more resilient portions of state forest.
124	7 (2, 3, 9, 12, 43, 70, 73)	Audit reports that the Department began a draft climate-biodiversity strategy in 2004. It is unacceptable that the strategy has not been finalised.	F	Outside the scope of the audit.	N/A.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
125	1 (53)	Diversity of forest management is in itself a climate change risk mitigation strategy.	I	Noted.	It is FPC's belief that active forest management to assist in mitigation of climate change risk is far more appropriate than a do nothing strategy.
126	8 (2, 3, 9, 12, 19, 43, 70, 73)	Concern for no KPI relating to Global Carbon Cycles.	F	Outside the scope of the audit. The Conservation Commission acknowledges that no KPI was established for the global carbon cycle criterion. At the time of the development of the FMP, it was envisaged that detection of changes in the condition of the forest as a consequence of natural or management induced processes would be achieved through FORESTCHECK and the Montreal indicators of sustainability.	Agreed.
127	1 (23)	Lack of flexibility in the FMP to respond promptly to changing circumstances particularly climate change and dieback.	F	The FMP provides a range of mechanisms at three levels of scale which allow flexibility in forest management. The FMP includes provisions for adaptive management and review of guidelines and policies referred to in the plan if required (Objectives 33 and 34). Noted.	Agreed.
128	1 (24)	Emphasize the need to consider climate change in all decisions relating to the wellbeing of the forest.	I	Noted.	This includes making decisions that provide for active management of the climate change risk such as that related to reduced rainfall.
Natural and cultural heritage					
129	2 (34, 35)	Actions relating to Aboriginal heritage and/or natural heritage are being implemented.	E	Noted.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
130	1 (79)	Develop procedures that allow for consultation, identification, recording and protection of Aboriginal heritage sites.	C	Refer to information on Objective 24 and KPI 24 in the audit. The audit identifies the processes in place to consult, identify and protect Aboriginal sites in disturbance activities. The Department of Indigenous Affairs is responsible for recording and maintaining database on Aboriginal sites.	Agreed.
131	7 (2, 3, 73, 74, 80, 81, 83)	Inability to assess KPI 23 is a reflection of the low priority placed on cultural heritage in forests.	D	Cultural heritage is given a high priority for protection in disturbance activities. While information for KPI 23 was not available for the audit, the Department are currently addressing data capture for reporting on KPI 23 in 2010.	Agreed.
132	2 (35, 79)	Supports the endeavors of Aboriginal communities to enjoy economic benefits from native forests.	I	Noted.	N/A.
133	1 (79)	Consultation with South West Land and Sea Council and Traditional Owners should be more uniformly and consistently applied across all Regions. FMP has not fully protected non-Indigenous cultural heritage.	D	Noted.	FPC places a high priority on indigenous consultation with respect to operations for which it is responsible.
134	1 (3, 29)		F	Outside the scope of the audit. Cultural heritage is given a high priority for protection in disturbance activities.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
135	1 (79)	Lack of consultation with Traditional Owners during the implementation of the FMP.	I	Noted. Operational. The agencies note that there are some differences across Regions with respect to consultation of traditional owners however, the Department and the Forest Products Commission notify South West Aboriginal Land and Sea Council for all disturbance activities that have the potential to impact on Aboriginal values, and actions are often formally presented to South West Aboriginal Land and Sea Council. The notification and protection process often includes; field visits and site inspections with traditional owners and custodians with authority and knowledge relating to Aboriginal cultural heritage, Indigenous representatives on site during earthworks and incorporation of cultural heritage messages and themes in onsite information.	Agreed.
136	3 (36, 37, 51)	Supports findings in the Natural and cultural heritage chapter.	E	Noted.	Agreed.
Socio-economic benefits					
137	1 (46)	No clear socio-economic benefits are evident from the brief reporting on this section.	C	The audit reflects the structure and required performance criteria of the FMP. All actions and KPIs under the Socio-economic benefits criterion have been addressed in the audit.	Refer response issue 5.
138	1 (53)	Greater weight should be given to the social and economic value of forests and forest products.	F	Outside the scope of the audit.	Refer response issue 5.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
139	9 (2, 3, 29, 31, 73, 74, 80, 81, 83)	Concern that the health, diversity and productivity of the environment are not being maintained for future generations.	C	The audit does not indicate that values of the environment are not being maintained for future generations. Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management, including intergenerational equity.	Agreed.
140	1 (62)	Forests are important for tourism.	I	Noted.	N/A.
141	1 (31)	Impact of bauxite mining is only addressed briefly.	C	The audit reflects the structure and required performance criteria of the FMP.	This is an example of inconsistency in approach where FPC is required to report on impacts of its operations but other users have no similar obligations.
142	7 (2, 3, 73, 74, 80, 81, 83)	The poor pricing mechanisms allow the Forest Products Commission to sell native timber in a way that prevents the development of an independent (private) forestry industry.	F	Outside the scope of the audit. Pricing mechanisms are determined by Government.	All long rotation sawlog driven timber investments, including pine plantations, fail to attract private investment. There are very limited native forest timber resources in private forest. It would be many years before a private plantation base could be developed that could play a significant role in the industry.
143	3 (36, 37, 51)	Supports findings in the Socio-economic benefits chapter.	E	Noted.	Refer to response issue 5.
Plan implementation					
144	1 (77)	Agree with the need for more consistency in policy development in regard to silvicultural treatments, fire management and recreation.	E	Noted.	N/A.
145	2 (7, 78)	Support adaptive management in relation to water balance.	F	Noted.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
146	7 (2, 3, 73, 74, 80, 81, 83)	The audit report contains no evidence that Action 33.1 has been acted upon in the adaptive management process. Audit does not provide detailed information on research being undertaken by the Department's Science Division with regard to water quality, quantity, stream zones.	B	KPIs in the FMP relating to water quality and quantity (to be reported on in 2010) include KPI 19 Annual flow weighted mean salinity and the trend for streams in fully forested catchments, KPI 20 Percentage of water bodies (eg stream kilometers, lake hectares) with significant variance of biodiversity from the historic range of variability and KPI 22 Water production (streamflow of selected forested streams). The Department's Science Division undertake research in relation to water quality, quantity and stream zones. More information can be found at http://www.dec.wa.gov.au/science-and-research/index.html	Agreed.
147	24 (2, 3, 9, 12, 21, 23, 32, 33, 36, 37, 43, 51, 68, 69, 70, 73, 74, 75, 84, 85, 86, 80, 81, 83)	Concern about non-compliance.	D	Noted. Agencies treat instances of non-compliance seriously and systems and processes are in place to capture and correct incidents of non-compliance.	Agreed.
148	11 (2, 3, 9, 12, 20, 23, 29, 43, 70, 73, 75)	Concern about the lack of penalties for non-compliance.	D	Noted. The Conservation Commission will provide advice to the Minister for Environment concerning amendments to the CALM Act to create a statutory duty for the Conservation Commission to provide advice to the Minister for Environment, and for its tabling in Parliament, when substantial non-compliance with the FMP leading to serious environmental consequences appears likely.	There is no basis for these powers to be given to the CC and they are not supported. This effectively raises the CC to the status of a committee of parliament. There is no evidence presented that there exists any threat that would require this level of response. The CC already can bring these matters to the attention of their Minister.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
149	19 (2, 3, 9, 12, 23, 29, 31, 37, 43, 68, 70, 73, 74, 75, 79, 84, 80, 81, 83.)	Concern for outstanding guidelines – guidelines should be finalised (long delay to finalise guidelines).	D	Noted.	N/A.
150	9 (2, 3, 9, 12, 29, 37, 43, 70, 73)	Lack of resources is no excuse for delay in implementation requirements of FMP.	I	The Conservation Commission accepts that a greater level of resourcing is required to implement all actions under the FMP in their proposed timeframes. The Conservation Commission considers that it may be necessary for the Department, in consultation with the Conservation Commission to reconsider priorities and allocate resources accordingly.	The Foreword on page 6 of the FMP contains the following statement: “The Department and the Forest Products Commission are committed to the implementation of the plan, however, implementation of all the actions will depend to some extent on the provision of necessary funds, which are subject to budgetary and other constraints, as well as for the Department to address other priorities throughout the state.”
151	2 (68, 75)	Lack of monitoring and auditing in relation to timber harvesting activities.	C	Refer to information on Objective 32 in the audit. The audit identifies and reports on the monitoring and auditing activities that are required under the FMP (Objective 32). The Conservation Commission undertakes audits of activities relating to timber harvesting. The Department and the Forest Products Commission are subject to internal audits and officers undertake regular field monitoring of timber harvesting activities. The Forest Products Commission is also subject to external audits to maintain their Environmental Monitoring System and Australian Forestry Standard certification.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
152	46 (2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 22, 27, 28, 30, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 50, 52, 54, 55, 56, 57, 58, 59, 60, 61, 63, 65, 66, 70, 73)	Environmental Protection Authority to set binding and enforceable timelines on measures required by the FMP.	F	Outside the scope of the audit. Specific timeframes required under Ministerial conditions have been incorporated in the FMP. Indicative timeframes for the commencement and conclusion of Actions that do not have a specific timeframe are identified in Appendix 13 of the FMP.	Agreed.
153	10 (2, 3, 9, 12, 29, 43, 68, 70, 73, 75)	Many KPIs are not addressed.	C	Not all of the KPIs were required to be reported on as part of the audit. The KPIs have different reporting periods ranging from annual to every five years. KPI 13 was required to be reported on as part of the audit process, however, information relating to the KPI was not available for the reporting period (see response to issue 72). http://www.dec.wa.gov.au/forests/forest-management-planning/forest-management-plan-2004-2013/fmp-2004-2013-key-performance-indicators.html	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
154	1 (1)	KPIs under the FMP are inadequate for measuring ecological sustainability.	F	<p>Settings under the FMP were prepared in accordance with the CALM Act and have taken into account the principles of ecologically sustainable forest management. The plan, including the KPIs, has been assessed by the Environmental Protection Authority under the EP Act.</p> <p>It should be noted that KPIs are one of the tools used to measure sustainability. Information and reporting on ecological sustainability is also provided by FORESTCHECK, Western Australia's State of the Environment report and Australia's State of the Forest report.</p>	Agreed.
155	9 (23, 31, 32, 33, 35, 36, 43, 51, 72)	Implementation of the current FMP is not well resourced (this may contribute to suboptimal performance).	D	<p>Noted.</p> <p>Page 6 of FMP identifies the Department's and the Forest Products Commission's concern regarding the level of resourcing required to implement the plan at the time the plan was developed.</p> <p>"The Department and the Forest Products Commission are committed to the implementation of the plan, however, implementation of all the Actions will depend to some extent on the provision of necessary funds, which is subject to budgetary and other constraints, as well as for the Department to address other priorities throughout the State. Reports on implementation of the plan will make clear which Actions are not being progressed due to resource constraints."</p>	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
156	9 (2, 3, 21, 73, 74, 77, 80, 81, 83)	Supports greater cooperation between agencies (the Department, the Forest Products Commission, Conservation Commission), concern for lack of working arrangements.	E	Noted. The Department and Forest Products Commission have continued to operate according to draft working arrangements prepared in accordance with the Memorandum Of Understanding (MOU) signed in March 2001 by the then Executive Director of the Department of Conservation and Land Management and the General Manager of the Forest Products Commission. In 2007, temporary working arrangements for planning and authorisation of timber harvesting in native forests were signed by the Director General of the Department and the General Manager of the Forest Products Commission.	Agreed.
157	8 (2, 3, 29, 73, 74, 80, 81, 83)	Support for changes to legislative framework for the Conservation Commission to enforce compliance where there exists the risk of environmental or ecological damage.	E	Noted.	Refer response issue 148.
158	2 (53, 87)	Do not support changes to legislative framework for the Conservation Commission to enforce compliance where there exists the risk of environmental or ecological damage.	E	Noted.	Refer response issue 148.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
159	1 (53)	Do not support changes to legislative framework for the Department to enforce compliance where there exists the risk of environmental or ecological damage.	E	The Conservation Commission supports the Department in seeking appropriate powers under the CALM Act.	FPC does not support the extension of DEC's powers without a process that provides for natural justice being implemented. Equally the same standards and processes would need to be applied to environmental breaches by DEC and other forest users. There is no evidence presented as to the extent of the breaches that require additional enforcement powers or the environmental threat that is inherent. Refer response issue 148.
160	2 (3, 24)	The legislative framework for forest management is inadequate.	I	Noted. The Conservation Commission will provide advice to the Minister for Environment concerning amendments to the CALM Act to create a statutory duty for the Conservation Commission to provide advice to the Minister for Environment, and for its tabling in Parliament, when substantial non-compliance with the FMP leading to serious environmental consequences appears likely.	
161	11 (2, 3, 9, 12, 43, 70, 73, 74, 80, 81, 83)	Information on forest management and biodiversity conservation should be made publicly available.	C	The audit identifies a number of ways in which information on forest management and biodiversity conservation is made available to the public (Objective 35, KPI 29). In addition to this, information is also made available through FORESTCHECK reports, Western Australia's State of the Environment reports and Australia's State of the Forest reports.	Agreed.
162	12 (2, 3, 9, 12, 29, 43, 70, 73, 74, 80, 81, 83)	Concern about the transparency and reliability of the sustained yield calculation process.	B	Noted. The methodology and data used in the sustained yield calculations for the plan have been independently reviewed.	Agreed.

Comment No.	Number of submissions with the same theme	Comment	Criteria	Response	FOREST PRODUCTS COMMISSION ADDITIONAL RESPONSE
163	12 (2, 3, 9, 12, 43, 53, 70, 73, 74, 80, 81, 83)	Concern for lack of an EMS (Environmental Monitoring System).	D	Noted. The Conservation Commission will work with the Department to address this shortfall.	FPC supports DEC in developing an EMS as soon as possible to demonstrate sustainable forest management and support FPC's Australian Forestry Standard certification.
164	4 (3, 29, 68, 69)	Lack of community consultation with respect to forest management practices and guidelines.	D	The Conservation Commission undertook extensive public consultation during the development of the FMP. The FMP provides for ongoing community consultation with respect to forest management practices (eg community forest inspections, three year and annual timber harvest planning, the Department's Good Neighbour policy, public nomination process for potential old-growth) and with respect to input on guidelines. Guidelines are made available to the public for a period of four weeks for comment before they are sent to the Minister for Environment for approval. The audit identifies and reports on actions relating to community involvement (Objective 35).	Agreed.

Appendix A

Criteria and category for response

Issue requires a response if it relates to the audit and a response is required to:

- (a) correct an error of fact or inaccuracy
- (b) identify an omission of information
- (c) clarify audit content or audit process
- (d) address an issue with audit content
- (e) note that the comment supports or do not support the Conservation Commission's findings

Issue may not require a response if:

- (f) the issue is outside the scope of the audit, including if the issue relates to the framework and management principles of the FMP, or is in conflict with legislation or policy
- (g) the issue is too broad and unable to be addressed within the context of the audit
- (h) is unclear, or can not be validated
- (i) is a general statement or opinion

Appendix B

Forest Management Plan mid-term audit of performance | List of submissions

Submission number	Organisation	Submission number	Organisation
1	Individual	25	Individual
2	Individual	26	Individual
3	Individual	27	Individual***
4	Individual***	28	Individual***
5	Individual***	29	South-West Forest Defence Foundation
6	Individual***	30	Individual***
7	Water Corp	31	Individual
8	Individual***	32	Individual
9	Individual***	33	Individual
10	Individual***	34	Department of Indigenous Affairs
11	Individual***	35	Institute of Foresters Australia
12	Individual***	36	Leeuwin Environment
13	Individual***	37	Busselton Dunsborough Environment Centre
14	Individual***	38	Individual***
15	Individual***	39	Individual***
16	Individual***	40	Individual***
17	Individual***	41	Individual***
18	Individual***	42	Individual***
19	Individual	43	Individual
20	Individual	44	Individual***
21	Individual	45	Individual***
22	Individual***	46	Forest Industry Federation (WA)
23	Jarrahdale Heritage Society	47	Individual***
24	Individual	48	Individual***
49	Individual***	70	Joint submission: Conservation Council of WA, Wilderness Society of WA, Western Australia Forest Alliance
50	Individual***	71	Individual
51	Friends of the Earth Southwest WA	72	Individual
52	Individual***	73	Individual
53	Forest Products Commission	74	Bridgetown Greenbushes Friends of the Forest (BGFF)

Mid-term audit of performance report | Summary of issues from public submissions

Submission number	Organisation	Submission number	Organisation
54	Individual***	75	Universiteit Utrecht (Part 3 of BGFF but considered separately)
55	Individual***	76	The Bushfire Font Inc
56	Individual***	77	Department of Water
57	Individual***	78	Individual
58	Individual***	79	South West Aboriginal Land & Sea Council
59	Individual***	80	Individual
60	Individual***	81	Individual
61	Individual***	82	Global Warming Forest Action Group
62	Individual	83	Individual
63	Individual***	84	Individual
64	South West Environment Centre	85	Individual
65	Individual***	86	Individual
66	Individual***	87	Department of Environment and Conservation
67	Biomass Action Group	88	Denmark Environment Centre
68	Yabberup Environment Society		
69	Individual		

*** Proforma

Appendix 5

Further advice from the Conservation Commission on forecast and realised yields of jarrah and karri other bole volume production, and information from the FPC on the increasing use of machine harvesting and soil disturbance



Conservation Commission
of Western Australia



Forest Management Plan 2004-2013

Mid-term Audit of Performance Report

**Advice to the Environmental Protection Authority:
Realised and forecast yields of jarrah during 2004-2007.
Karri other bole volume production during 2004-2007.**

Executive Summary

The Conservation Commission has reviewed the Department of Environment and Conservation's (DEC) supplementary reports for the higher karri other bole volume production (KOBV) during 2004-2007 and the observed differences between the realised and forecast yields of jarrah during 2004-2007. This information was sought as part of the mid-term audit of the *Forest Management Plan 2004-2013* (FMP).

The Conservation Commission provides the following advice to the EPA for its consideration.

Realised and forecast yields of jarrah sawlog

The Conservation Commission acknowledges that overall for the three forest regions, the revised data indicates a close conformity between the realised and forecast sawlog volume. The Conservation Commission advises the EPA that, based on the supplementary advice it has received from DEC, it is not necessary to adjust the sustained yield for jarrah sawlogs at this point in time.

The Conservation Commission is, however, concerned with the clear trend of less volume being removed in the Swan Region relative to forecasts, and advises the EPA that KPI 11 should be amended so that reporting on realised and forecast jarrah sawlog yields is undertaken annually from 2010 onwards.

Karri other bole volume production

The Conservation Commission advises that from the evidence presented to it; the additional volumes of KOBV are largely the result of an expanded program of karri regrowth thinning, the Forest Products Commission (FPC) are operating in accordance with the silvicultural guidelines, there is no evidence of systematic over-thinning and operations have not resulted in an excessive yield of sawlogs.

The Conservation Commission presents three options to the EPA for consideration:

- Option 1. No adjustment to KOBV limits specified in the plan, continue harvesting as per silvicultural prescriptions, with a high likelihood of exceeding the upper limits of KOBV in the FMP over the 10 year period. This option may result in non-compliance with the FMP and achieves appropriate outcomes for future sawlog production.
- Option 2. No adjustment to KOBV limits specified in the plan, scale back harvesting and do not exceed the limits of KOBV in the FMP over the 10 year period. This option results in compliance with the FMP but will have negative commercial impacts for FPC and may have a negative impact on the health and vitality of the forest over the long term.
- Option 3. Adjust the KOBV limits specified in the plan to reflect current and expected production. This option would require a revision of the KOBV limits and an amendment to Table 4 of the FMP, along with public consultation as required under the *Conservation and Land Management Act 1984*.

Background

An outcome of the FMP mid-term audit of performance, was that the Conservation Commission requested DEC and the FPC to provide a detailed analysis for the shortfall of the realised and forecast yields of jarrah sawlog and of the causes for the greater volumes of KOBV being produced.

The Conservation Commission was concerned that information provided in the FMP mid-term audit report did not go far enough to clearly explain causes for the observed differences and as such, felt that they could not make an informed response based on the data presented.

DEC, in consultation with FPC, have provided the Conservation Commission with two supplemental advice reports; *Supplemental advice to the Conservation Commission concerning the reasons for differences between the realised and forecast yields of jarrah sawlog during 2004-2007* and *Supplemental advice to the Conservation Commission concerning the causes for the higher levels of karri other bole volume production during 2004-2007*.

The following report is the Conservation Commission's advice to the EPA on realised and forecast yields of jarrah sawlog and KOBV production based on the information that has been provided in the FMP mid-term audit of performance and the supplemental advice supplied by DEC.

Realised and forecast yields of jarrah sawlog

The Conservation Commission notes that there is a discrepancy between the data presented in the mid-term audit report and the supplemental advice report with respect to the overall average realised jarrah sawlog yield. Data presented in the mid-term audit report suggested an average shortfall of 15 percent in the volume of jarrah sawlog realised from harvest operations compared to forecast yields. This figure was found to be inaccurate and revised analyses indicate that the average realised volume is 9 percent more jarrah sawlog volume compared to forecast yields. The Conservation Commission has based its advice on the data presented in the supplemental advice report.

The Conservation Commission acknowledges that overall, for the three forest regions, data indicates a close conformity between the realised and forecast sawlog volume. The Conservation Commission believes that based on the data presented in the supplementary advice, it is not necessary to adjust the sustained yield for jarrah sawlogs at this point in time.

However the Conservation Commission is concerned with the clear trend of less volume being removed in the Swan Region relative to forecasts.

DEC has identified the following factors as contributing to the lower yields:

1. A high proportion of the sawlogs made available in the Swan Region are of marginal size and quality relative to other regions.
2. The forest available for harvesting has generally been cut over several times and within the regrowth landscape the trees having larger sawlogs are dispersed at a low frequency. Accessing all available areas within a coupe can be dependent on the availability of sufficient non-sawlog markets. This means that the larger sawlogs are more likely not to be harvested in the Swan Region relative to other regions.

3. A component of the sawlog volume is available in trees of candidate size for retention as habitat or crop trees, such that any conservative 'over-marking' of such trees will retain a higher percentage of jarrah sawlog.

DEC has indicated that management actions could address some of the factors contributing to the lower yields (relating to points 2 and 3 listed above). This includes improved application of treemarking by FPC to avoid retaining sawlog in crop or habitat trees beyond limits specified in silviculture guidelines and an increase in FPC's capacity to commercially remove non-sawlog material within stands so as to more closely achieve desired silvicultural outcomes. FPC have advised the Conservation Commission that they are working towards improving timber utilisation and improved silvicultural practices.

DEC also indicates, however, that where a lower yield has been realised because there has been a shift in the size and quality of sawlogs acceptable to some parts of the sawmilling sector, that yield will not be recovered by management actions unless there is improvement in the underlying economic viability of accessing and processing those logs. In addition, where the silviculture prescription 'selective cut' has been applied rather than release regeneration (gap creation) DEC indicates there will be a reduction in future growth that may impact beyond the next 50 years.

The improvement in realised yields is therefore based on a number of probabilities. To improve utilisation and increase the realised jarrah sawlog volume in the Swan, the FPC needs to facilitate the development and or access to markets for lower-grade timber. The Conservation Commission noted in the FMP mid-term audit that it considers that this should be a priority for the FPC so as to increase the economic viability of harvesting in areas of marginal size and quality. The FPC also needs to improve application of some aspects of the silvicultural prescriptions.

Bearing in mind the difficulty FPC have had in securing markets for lower-grade products in the past, the Conservation Commission has also considered a revision of the sustained yields to address the shortfalls observed in the Swan Region. DEC has indicated that an important consideration in the timing of a revision of the sustained yield is the status of information and data necessary to comprehensively update the sustained yield. DEC has indicated that at present the refinement and update of forest inventory, stratification and growth datasets has been scheduled, subject to available resources, to coincide with the processes for the preparation of the next forest management plan.

With this information in mind, the Conservation Commission provides the following advice to the EPA:

1. The Conservation Commission believes it is not necessary to adjust the sustained yield for jarrah sawlogs.
2. KPI 11 should be amended such that the reporting on realised and forecast jarrah sawlog yields is undertaken annually. This will allow the agencies to better monitor the trend for shortfall in the Swan Region and to identify the requirement for any further improvements.

The Conservation Commission will request that DEC make the refinement and update of forest inventory, stratification and growth datasets a high priority to better reflect productive capacity of the forest in the Swan Region and to ensure that the level of required data is available in 2012 for preparation of the next forest management plan. The Conservation Commission will also ask DEC and FPC to provide progress reports to verify that management actions are having a positive impact on the yield of jarrah sawlog in the Swan Region.

Karri other bole volume production

The FMP mid term audit reported that the annual and cumulative volume of KOBV removed during 2004 to 2007 exceeded the upper limit specified in the FMP of 117,000 cubic metres (m³). The volumes removed ranged from 23 per cent to 46 per cent higher than the limits allowed under the FMP.

DEC and FPC indicated that the primary contributing factor to the higher level of KOBV produced was due to a higher proportion of karri stems than forecast in the regrowth stands. The forecast yield regimes assumed that as site quality declined marri regrowth stems would comprise an increasing proportion of the total first thinning yield. The actual proportion of marri volume realised within the stands thinned to 2007 has been much lower than modelled, and the higher realised proportion of karri has resulted in the higher yields of KOBV.

Other factors that have contributed to the higher volumes of KOBV, but to a lesser degree, include:

- A higher area of two-tiered karri forest cut over between 2004 and 2007 than older regrowth stands, where two-tiered forest produces a higher quantity of KOBV than older regrowth stands;
- A larger proportion of higher site quality areas which produced higher volumes of KOBV;
- An increase to the minimum acceptable size of karri sawlogs from first thinnings leading to the smallest sawlog size being recorded and removed as KOBV;
- Some wood sourced from the crowns of felled trees in the two-tiered stands has been recorded in the level of KOBV, rather than recorded separately; and
- An unqualified proportion of regrowth marri stems thinned in the regrowth karri operations are included as karri in the KOBV statistics.

The information provided in the supplemental report suggests that, based on the KOBV data from 2004 to 2007 and the characteristics of areas due to be harvested during 2008 to 2013, the volume of karri other bole logs produced will continue to exceed the FMP upper limit of 117,000m³ per annum.

The issue for the Conservation Commission is that under Action 11.1 of the FMP the average annual yield of logs, calculated over the 10 year life of the plan, shall not exceed the maximum volumes stipulated in the plan.

The Conservation Commission has considered a number of factors in addressing this issue;

1. Are FPC and DEC complying with the intent of the FMP and the prescriptions of the silvicultural guidelines with respect to karri harvesting? and
2. What are the implications for the health and vitality (inclusive of biodiversity and productive capacity) of the karri regrowth forest in the short term (until the end of the plan) and the longer term (beyond the term of the current plan) if:
 - a) The current silvicultural prescriptions continue to be applied and areas proposed to be harvested are made available as planned; or
 - b) regrowth thinning operations are scaled back to meet the FMP upper limit of 117,000m³.

With regard to point 1: DEC has a responsibility to ensure that FPC operations are conducted in accordance with the silvicultural guidelines. There is no evidence, from the information presented to the Conservation Commission, that FPC are operating outside the guidelines or the intent of the FMP, or that systematic over-thinning is occurring. Monitoring

indicates that the stands are being thinned to the target basal areas specified in the silvicultural specifications.

The FMP provides for an expanded program of karri regrowth thinning up to a level that would not impact on the sawlog sustained yield. FPC has indicated that the additional volumes that have been generated from the expanded program of thinning have been sourced from operations that are consistent with DEC's silvicultural guidelines and have not resulted in an excessive yield of sawlogs.

In terms of the areas cut over, DEC has indicated that there has been a higher than anticipated area of two tiered forest cut over in 2004 to 2007 due to a short term deferral of older regrowth stands (that require refinements to forest stratification to more accurately define operational boundaries). The two-tiered stands realise a higher proportion of KOBV per unit of sawlog compared to the harvest of older regrowth. The Conservation Commission has been advised that this is of no consequence over the life of the plan as there will be a corresponding reduction in the area of two-tiered forests harvested during 2009-2013 (and conversely an increase in the area of older regrowth stands harvested).

The area of regrowth karri that has been thinned to December 2007 was higher than the area scheduled to be harvested but is within the overall average for the ten year timeframe of the FMP. The area of regrowth karri thinned between 2004 and 2007 was 4,180ha, compared to an expected 3,555ha but provision had been made for an overall total of up to 1,260ha per annum.

The Conservation Commission considers, that based on the information DEC has presented, DEC and FPC are complying with the intent of the FMP and the prescriptions of the silvicultural guidelines with respect to karri harvesting.

With regard to point 2(a): From the information presented to the Conservation Commission, there is no evidence that the health or vitality of the forest is currently being compromised due the higher KOBV production. If, as DEC has determined, the higher KOBVs are a product of higher site quality and lower proportion of marri regrowth present in stands thinned to date, then the Conservation Commission believes that there should be no negative environmental impact in the short term if FPC continue to harvest in regrowth areas as per the harvest plan and in accordance with the silvicultural guidelines.

With regard to point 2(b): The Conservation Commission have been advised that there would be a number of implications if the area of regrowth karri forest thinned each year is reduced to meet the FMP upper limit of 117,000m³.

Over the short term this includes the potential for delay in the reintroduction of prescribed fire into the younger regrowth stands and the commercial implications for FPC who have developed a market for the KOBV product.

In the longer term there may be an impact on future sustained yield of karri sawlogs due to silvicultural prescriptions not being carried out as intended and potentially adverse outcomes on future stand productivity under a drier climate including, the increased probability for natural tree deaths through the stand 'self-thinning' and the increased probability for susceptibility to pests and diseases.

The Conservation Commission considers that the health and vitality of the karri regrowth forest could be impacted in the long term if karri regrowth thinning is scaled back to meet the FMP upper limit of 117,000m³.

The Conservation Commission believes that there are three options available for the EPA to consider:

- Option 1. No adjustment to KOBV limits specified in the plan, continue harvesting as per silvicultural prescriptions, with a high likelihood of exceeding the FMP upper limit over the 10 year period. This option may result in non-compliance with the FMP and achieves appropriate outcomes for future sawlog production.
- Option 2. No adjustment to KOBV limits specified in the plan, scale back harvesting to ensure that volumes do not exceed the FMP upper limit. This option results in compliance with the FMP but will have negative commercial impacts for FPC and may have a negative impact on the health and vitality of the forest over the long term.
- Option 3. Adjust the KOBV limits specified in the FMP. This option would require a revision of the KOBV yield and an amendment to Table 4 of the FMP, along with public consultation as required under the *Conservation and Land Management Act 1984*.



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RECEIVED

13 JUL 2009

CONSERVATION COMMISSION OF WA

G 13/07/2009

1. JB

2. JR

3. P.

Dear John

FOREST MANAGEMENT PLAN 2004-2013

Please find enclosed the additional advice that you had sought in the Midterm Audit in relation to KPI 21.

Yours sincerely



Gavin Butcher
EXECUTIVE MANAGER OPERATIONS

7 July 2009

Enc.

Copy: Dr Geoff Stoneman, Acting Director, Sustainable Forest Management
Department of Environment and Conservation (DEC), Cnr Hackett Drive
and Australia II Drive, CRAWLEY 6009

Forest Management Plan (FMP) 2004-2013

Mid- term audit report

The Forest Products Commission (FPC) response to the Conservation Commission (CC) regarding concerns that the increased use of machine harvesting for timber production will lead to further shortfalls in the area of soil disturbance.

Summary

Machine harvesters have been in use in the south west of Western Australia (WA) for approximately 20 years.

They have a number of advantages over manual tree felling, the most important being the additional safety provided for the operator. They also can have drawbacks if operators are not well trained and harvest operations not well planned, for example contributing to adverse soil disturbance levels.

The data contributing to the report against Key Performance Indicator (KPI) 21 suggests that the position of extraction tracks is the greatest contributor to adverse soil disturbance outcomes. Machine harvesting can exacerbate the potential for this to occur if the machine harvesting and subsequent log extraction is not well planned.

Where harvest cells are narrow or irregular in shape it is likely that the soil disturbance thresholds will be exceeded. This is likely to occur with or without machine harvesting due to the configuration of extraction tracks required to access the harvest cells. In these circumstances the guiding principle should be that the harvesting operation is well planned and managed to minimise soil disturbance rather than remaining within definitive limits.

The FPC is also of the view that the data contributing to the report against KPI 21 shows a trend of continuous improvement during the period 2004 to 2008. This reflects the importance and priority FPC has placed on the achievement of acceptable soil disturbance outcomes.

FPC concludes that the broader benefits of using machines in harvesting significantly outweigh any potential risks in soil management. The overall reduction in soil damage has occurred at a time when there is a high level of use of machine harvesters.

Introduction

The purpose of KPI 21 is to report on the success or otherwise of the implementation of the FMP in achieving its targets with respect to soil disturbance levels as a result of timber harvesting.

Soil disturbance monitoring undertaken by the Department of Environment and Conservation (DEC) and reported in KPI 21 suggest that soil disturbance levels associated with timber harvesting operations have exceeded allowable limits, in

some instances, in each year of the first four years of the FMP. All instances were associated with the use of machine harvesting. The assumption is drawn from this that there is a heightened risk of soil disturbance levels continuing to exceed allowable limits with the continued use of machine harvesting.

Background

Following a worldwide trend in the application of mechanised harvesting, machine harvesters were introduced into native forest harvesting operations in south west WA in the late 1980's. Initially their use was restricted to regrowth karri thinning operations but subsequently as machine design advanced they began to be used in the mature forests. Today their use has become common practice with approximately 25 machine harvesters deployed by harvesting contractors in native forest timber harvesting operations in WA's south west.

The annual area of native forest harvested in the south west of WA each year has averaged approximately 9,600 hectares for the past four years. This includes jarrah, karri, karri regrowth thinning operations and wandoo forest. The majority of this area has been machine harvested.

All harvesting operations are monitored for soil disturbance according to the requirements of the 'Interim Manual of Procedures for the Management of Soils Associated with Timber Harvesting in Native Forests', DEC SFM Manual No.1 2007. Both FPC and the DEC are required to undertake soil surveys to assess the level of soil disturbance. KPI 21 has reported only against soil surveys undertaken by the DEC. KPI 21 states that FPC data was not considered, *"primarily because monitoring is conducted prior to completion of operations and does not represent the final level of disturbance for a feller's block."* Of note is that FPC survey results tend to record lower soil disturbance levels than DEC surveys for the same harvest cells. This is no doubt partly due to the statement above however it is also a consequence of assessed soil disturbance levels being a judgment rather than a precise measure.

Importantly as stated in the KPI 21 report *"the data are not a random or unbiased sample of operations. Surveillance and monitoring undertaken by the Department are carried out in a risk management framework and often focused on sites that are at the highest risk of exceeding disturbance limits."*

Also importantly although KPI 21 indicates all instances where allowable soil disturbance was exceeded were for machine harvested areas it does not follow that all machine harvested areas incurred excessive soil disturbance. Thus properly managed machine harvesting operations are capable of remaining within allowable soil disturbance limits.

KPI 21 also makes the observation that problems with soil disturbance were often associated with either new machine operators or Supervisors. This again is an important element highlighting the need for well trained and motivated harvesting contractor personnel with a clear understanding of the desired soil outcomes associated with timber harvesting operations.

Review of Data Supporting KPI 21

In order to determine any trends which may have lead to the reported soil disturbance limits being exceeded, the data supporting Tables A25, A26, A27 and A28 in the KPI 21 report has been reviewed. This included seeking copies of original

soil survey booking sheets and any documented comments from the DEC staff undertaking the surveys. Results of the review are summarised overleaf in Table 1.

Table 1 Data on which KPI 21 is based

YEAR	HARVEST CELL	RISK PERIOD	HARVEST TYPE	DISTURBANCE %		COMMENTS
				D2	D3	
2005	Lowden 01 Cell 7	MH	JARRAH	11.4	4.8	
	Torrens 4 Cell 4	MH	JARRAH	18.8		snig pattern following harvester felling pattern
	Torrens 4 Cell 7	MH	JARRAH	12.9		small cell, better use of snig layout
	Torrens 4 Cell 6	MH	JARRAH	11.4		skidder using harvester tracks not approved pattern
	Torrens 4 Cell 10	M	JARRAH		3.8	multiple primary extraction tracks
	Windsor 5 Cell 5	M	JARRAH	18	3.1	snig pattern ok small cell big volume
	Windsor 5 Cell 6	M	JARRAH		8.8	snig pattern ok small cell/small volume
	Torrens 4 Cell 11	M	JARRAH	10.9		3 primary extraction tracks off landing
	Windsor 5 Cell 27	L	JARRAH	10.1		narrow cell
	Torrens 4 Cell 14	M	JARRAH	10.2	3.4	multiple extraction tracks off landing
	Torrens 4 Cell 16	M	JARRAH	9.3		snig pattern following harvester felling pattern
	Torrens 4 Cell 22	M	JARRAH		3.8	multiple extraction tracks off landing
	2006	Torrens 4 Cell 21	L	JARRAH	8.8	6.6
Torrens 4 Cell 25		L	JARRAH	14.6		better results better layout of snig pattern ET1 not surveyed
Clinton 1 Cell 1		L	JARRAH	13.2		better use of herring bonesnig pattern
Lang 4a 21		L	JARRAH		8.4	% related to damage observed versus snig pattern layout
Lang 4a 23		L	JARRAH		3.6	inappropriate snig pattern used
Clinton 1 Cell 2		L	JARRAH	10.9		better use of herring bone snig pattern
Clinton 1 Cell 8		L	JARRAH	11.8		better use of herring bone snig pattern
Clinton 1 Cell 12		L	JARRAH	24.3		multiple ET's
Clinton 1 Cell 14		L	JARRAH	9.9		snig pattern ok
2007	HADFIELD 0305 12b	H	JARRAH	10.7	4.5	
	Wearne 5 Cell 12	MH	JARRAH		2.7	survey only 1424 points
	Wilson 1 Cell 29	M	JARRAH		2.1	survey only 1343 points
	Wilson 1 Cell 35	L	JARRAH	11.3	5	
	Wilson 1 Cell 30	L	JARRAH	14.2	5.4	
2008	Yabberup 307 Cell 2	L	JARRAH	18.3	4	
	Amphion Cell 13	L	JARRAH	8.8	2.3	survey only 1414 points
	Sutton 7 Cell 6		K CLEARFELL		2.7	survey only 1121 points, narrow cell
	Nairn 3 Cell 1		K THIN		2.4	survey only 1170 points, narrow cell
	Randall Cell 4	L	JARRAH		2.3	survey only 1108 points
	Balmoral Cell 3	L	JARRAH	11.9	4.2	

Note: Blank boxes indicate soil disturbance level was within limits

Table 2 Summary of trends (excludes incomplete survey data)

YEAR	FOLLOWING HARVESTER PATTERN	EXTRACTION TRACKS	SMALL NARROW CELLS	OTHER	TOTAL CELLS
2005	3	4	4	1	12
2006		9			9
2007		3			3
2008		2			2

From Table 1 for 2005 there were 12 separate harvest cells contributing to the data set. All were significantly over the allowable soil disturbance limits. The reasons for 7 of these cells exceeding allowable limits were avoidable, 3 following the machine harvester pattern and 4 having multiple extraction tracks. 4 others were small narrow cells which are difficult to manage within soil disturbance limits. For the remaining cell there was no information on which to judge the reason for exceeding the limits, however KPI 21 page 85 of the Mid Term Audit Report indicates that all moderate (D2) and severe disturbance (D3) exceeding allowable limits was due to extraction tracks.

It should also be noted that the way the data was presented in Table A25, 3 harvest cells contributed twice. These were Lowden 01 cell 7, Windsor 5 cell 5 and Torrens 4 cell 14 contributing to both D2 and D3 level disturbance percentages.

For 2006, 9 separate harvest cells contributed to the data set. From the information available, following the harvester pattern was not a contributing factor however multiple extraction tracks remained a concern with 4 cells observed to have this attribute. For the remaining 5 cells it appeared that extraction track patterns were generally better however again these contributed sufficient D2 and D3 soil disturbance to exceed allowable limits.

For 2007, 5 harvest cells contribute to the data set. Of these however 2 are only marginally above the allowable limits for D3 soil disturbance. The data for these 2 cells is also based on limited soil surveys of less than 1,500 assessed points. Removing these incomplete 2 cells on the basis of inadequate data leaves 3 harvest cells exceeding allowable limits. Soil disturbance limits exceeding the allowable limits in the remaining 3 cells was related to the extraction track network.

It should also be noted that the way the data was presented in Table A27, 1 harvest cell contributes twice. This was Wilson 01 cell 30, contributing to both D2 and D3 level disturbance percentages

For 2008, 6 harvest cells contribute to the data set. Of these 6 harvest cells 4 soil surveys fall short of the requirement of 2,500 point surveys and 3 fall short of the minimum requirement of 1,250 point survey. These 4 harvest cells have been recorded as only marginally exceeding the allowable soil disturbance limits. Removing these incomplete 4 cells on the basis of inadequate data leaves 2 harvest cells exceeding allowable limits (It should be noted however that 2 of the 4 harvest cells had a narrow configuration and in those an extended survey may not have changed the observed outcome). Soil disturbance limits exceeding the allowable limits in the remaining 2 cells was related to the extraction track network.

It should also be noted that the way the data was presented in Table A28, 1 harvest cell contributes twice. This was Amphion cell 13, contributing to both D2 and D3 level disturbance percentages.

In summary although the data has some weaknesses the trend for the four years from 2005 to 2008 is that where reported soil disturbance limits exceeded allowable limits it was due to extraction track management rather than machine harvesting. Well planned and managed extraction following machine harvesting can reduce the occurrence of soil disturbance exceeding the allowable limits.

The potential occurrence of soil disturbance limits being exceeded can not be removed entirely as, as indicated in KPI 21 there are circumstances where it is not physically possible to stay within the allowable limits due to harvest cell configuration, size or slope. The application of machine harvesting in these circumstances has little if any influence on this outcome. In these circumstances the guiding principle should be that the harvesting operation is well planned and managed to minimise soil disturbance rather than remaining within definitive limits.

An important trend to note in the above data (refer Table 2), removing those harvest cells that have an incomplete survey associated with them is a trend of continuous improvement, with the number of harvest cells reported annually by the DEC as exceeding the allowable soil disturbance limits reducing from 12 harvest cells in 2005 to 9 in 2006 to 3 in 2007 and 2 on 2008. Although this trend may be contributed to by a decreased level of monitoring and reporting by the DEC over time, it is the FPC's view that it does reflect the real increase in focus and attention that is placed on soil management outcomes by the FPC.

Discussion

The main reason for the wide use of machine harvesters is that they are capable of higher production rates as compared to hand fallers and as a consequence have comparatively low unit costs of production. They are also able to control tree fall and so place trees to avoid damage to standing retained trees. Their ability to bunch logs into heaps without the need for skidding machines to travel to every stump to extract logs also reduces the area of the harvest coupe at risk of compaction and provides for more efficient extraction of logs to roadside landings (rubber tyred skidders have approximately double the ground pressure of machine harvesters).

Probably the most important outcome of the use of machine harvesting systems is greatly increased operator safety and comfort and reduced risk of acute injury. In the four decades leading up to the mid 1980's the incidence of injury to tree fellers in WA was relatively high with an average fatality rate of one death per year. The last fatality of a tree feller in WA occurred in 1995.

Operator cabins on harvesting machines are constructed to Falling Object Protection Standards (FOPS) providing protection to the operator from falling limbs and trees. In one incident in 1997 a marri tree fell on the cabin of a machine harvester crushing the cabin to half its original size without serious injury to the operator. Conservation and Land Management (CALM) staff who supervised the harvesting operation at the time were convinced the feller would have been killed had he been using a chainsaw instead of operating a machine harvester. There have been further examples of the value of cabin protection since.

There are downsides to machine harvesters if used poorly impacting issues including damage to retained trees, log utilization and the potential to contribute to unacceptable soil disturbance due to the skewing of tracks as the machine is maneuvered through the forest. All of these downsides can equally apply to the use of handfallers if not well managed. For example excessive soil disturbance through scrub rolling prior to handfelling operations can contribute to unacceptable soil disturbance outcomes. Handfallers tend to leave higher stumps than machine falling impacting on log utilization.

Machine harvesters initially developed from earth moving excavators fitted with customized tree felling heads. As a consequence of this they were not ideally suited to all situations. For example large machine harvesters with a tail swing outside of the excavator track base have the potential to cause unacceptable damage to retained trees. Customised machine harvesting equipment is now available such as zero tail swing machines which negate the above concern. It is likely that over time as older machines are replaced by harvesting contractors with more modern equipment environmental outcomes will continue to improve.

While machine harvesters used in association with skidders can result in some excessive soil disturbance, the major determinant of damage is through the management of the coupe. At present the overall trend appears to be a reduction. There are many reasons why machine harvesting could be considered as the superior method of felling trees, although there is not definitive evidence to demonstrate either case.

From the survey data the overall scale of excessive soil disturbance cannot be considered a major issue. The proportion of the harvest area identified in these risk-based surveys is less than 0.15% being excessively disturbed. It is highly questionable whether the biological or productive values of the forest suffer any real effect from this minor level of impact. Given the number of significant threats facing the biological, economic and social value of the forest, soil disturbance appears to be less important and warrants no additional attention above that currently in place.