

Submission to the Senate Standing Committee on Environment and Communications inquiry into the Tasmanian Wilderness World Heritage Area

Introduction

The work undertaken by the IVG is directly relevant to the Committee's Inquiry as the IVG examined, and reported on claims of world heritage values for forest areas proposed for protection by conservation groups. The IVG's work lead subsequently to a negotiated agreement between the signatories to the TFA, and was used by the Commonwealth Department of the Environment to prepare a submission by the Australian Government for a minor boundary extension to the existing Tasmanian Wilderness World heritage Area and later passed by the World Heritage Committee in June 2013.

Background.

The Independent Verification Group (IVG) was established under Clause 20 of the Intergovernmental Agreement, and its primary task was to verify the conservation claims by Environment Non Government Organisations (ENGOS) of native forests nominated under the Tasmanian Forests Intergovernmental Agreement (TFIGA) and their compatibility with sustainable wood supply requirements for industry. A copy of the Terms of Reference for the IVG is at Appendix 1.

The IVG was chaired by Professor Jonathon West, and its six members were appointed for their independence and their extensive expertise in forestry, forest ecology, conservation reserves, forest modelling and geology. The members of the Independent Verification Group were:

- Chair Professor Jonathan West
- Dr Robert (Bob) Smith
- Dr Michael Lockwood
- Professor Brendan Mackey
- Professor Mark Burgman
- Professor Ross Large

A short resume on each member is on the Department of the Environments website.

The IVG spent approximately five months verifying claims about conservation values and wood supply, and met as a group on five occasions including several joint meetings with the Signatories Reference Group.

Three reports were provided to the Commonwealth and Tasmanian governments during the IVG process, an initial report in September 2011 by the Chair and two subsequent progress reports on 1 December and 31 December 2011.

The IVG submitted a draft of its report on 29 February 2012 to the Intergovernmental Taskforce, comprised of Commonwealth and State officials. A number of substantive comments and technical matters were constructively raised in response to the draft report. A response to the substantive matters raised was attached to the IVG's final Capstone Report.

A final Capstone Report was provided to Signatories and both governments in March 2012. A copy of this report is at Appendix 2. For brevity I haven't included the Appendices to the Capstone Report, but they are available from the Department of the Environment website.

All these reports are publicly available on the Department of the Environment website.

In addition the Chair of the IVG provided a report to governments in March 2012. This report is held by the Department of the Environment, and is not available online.

The initial report responded to Clause 3 of the Tasmanian Forest Agreement Independent Verification Group Terms of Reference.

Subsequently the IVG commenced its detailed verification work through the development of work plans, and where necessary, to commission additional research and services from outside parties. It was apparent early on that there was a high level of interest from Signatories in both meeting with the IVG and providing comment on its draft work plans and methodologies.

Each IVG member had responsibility for the development of a work plan, and final copies of these are available on the Department of the Environment's website.

These plans and the member for the IVG responsible for their development are:

- community and economic evaluation (Dr Bob Smith)
- forest conservation (Professor Brendan Mackey)
- geology and mineralogy (Professor Ross Large)
- social, management and engagement (Dr Michael Lockwood)
- wood supply (Professor Mark Burgman).

Each work plan involved a description of the methodology to be employed, source data, and the projects to be undertaken, some of which have linkages with other projects both within each work plan and also with projects in other work plans. Some projects were dependent on other projects being completed first before they could commence. Other projects such as on wood supply, were dependent on data and modelling from Forestry Tasmania.

Based on the methodologies outlined in the work plans, each member prepared a technical report, and where appropriate, these technical reports are accompanied by other commissioned reports. These technical reports are thus a mix of IVG member written and commissioned reports. Each technical report contains an overarching analysis by the responsible IVG member.

The interaction with the Signatories Reference Group was excellent. They were closely engaged in the detail of methodologies proposed by members of the IVG to verify the various conservation and industry claims. In particular the work plans of Professor Mark Burgman, Professor Brendan Mackey, and Dr Bob Smith attracted much constructive and robust comment, and some work plans went through more than 10 iterations.

In relation to the Forest Conservation Work Plan prepared by Professor Mackey, peer reviews were also sought from three reviewers on the proposed methodology. The reviewers also provided comment on the subsequent technical report prepared by Professor Mackey. The peer reviews are on the Department of the Environment website.

The level of interest in the IVG's work extended well beyond the Signatories Reference Group and the list of stakeholders listed in the IVG's terms of reference. In particular there was a lot of interest and submissions from many local groups. The IVG met with a diverse range of stakeholders including many industry bodies, companies, unions, specialty timber groups, government agencies, beekeepers, and local organisations.

The IVG considered all the relevant material supplied to it from a range of groups and agencies and also as necessary commissioned additional work. It also had access to relevant layers of government held data and other information.

All the commissioned reports were made publicly available in the form supplied to the IVG consistent with the IVG's commitment to a transparent process, and allowed signatories and others to see the work that contributed to the member's technical reports. The commissioned reports contain a lot of valuable references to other work which allow an understanding of the assessments.

In terms of the commissioned reports, these were undertaken on a contractual basis with leading researchers and organisations and produced new or updated data or information which in some cases went to fellow researchers. For example, the heritage report relied on a number of other commissioned reports such as on rainforest and old growth forest.

The IVG spent approximately \$900,000 on commissioned research and data acquisition of which approximately 60% was for industry related work and 40% on conservation related work.

The commissioned research work was undertaken free from direction from the IVG and free from cross over politics or vetoing between industry and conservation interests. All projects were approved by the Commonwealth Government's Department of the Environment.

The Technical Reports and commissioned reports are available from the Department of the Environment website.

The reports most relevant to the Committees terms of reference is the technical report prepared by Professor Mackey, and some of the contributing commissioned reports, and in particular the commissioned report on heritage values.

Summary

- A lot of research effort was undertaken by the IVG over a 5 month period, and was based on the best data, science and information available.
- The process of undertaking the additional research and verification of industry and conservation claims was done without political interference, or cross sector interference in project design or delivery.
- The process for preparing the IVG's final report was transparent with all the work plans, commissioned reports, and maps being made publicly available.
- Signatories and both the State and Commonwealth governments were briefed progressively on the IVG's work and on its ultimate findings. In addition they had access to drafts of the IVG's reports and provided input through the process.
- The IVG work formed the basis for subsequent negotiations between signatories leading to a final agreement, which led to a number of implementation steps including the nomination of additional areas for the World Heritage list.

Appendix 1

Tasmanian Forest Agreement Independent Verification Group

Terms of Reference

Note: These terms of reference identify the tasks and outputs needed from the Independent Verification process to meet the requirements of the relevant clauses of the Intergovernmental Agreement, but do not attempt to predetermine the design of the Independent Verification process or the methodology to be used by the Independent Verification Group.

As noted in paragraphs 2 and 3 of the terms of reference, the design and implementation of an independent and transparent assessment and verification process is one of the first and most important tasks for the Group. The Group is also required to seek the prior agreement of the Signatories to the process (including the underlying assessment methodologies) and to accept its results.

Introduction

The Premier of Tasmania and the Prime Minister jointly signed the Tasmanian Forests Intergovernmental Agreement (IGA) on 7 August 2011 in response to the community-led Tasmanian Forests Statement of Principles.

The intent of these terms of reference is to give effect to key elements of the Intergovernmental Agreement, including clauses 19 and 20 of the Agreement which provide for the establishment of an Independent Verification Group of experts jointly nominated by both Governments, but independent of both Governments and all other stakeholders, and led by Professor Jonathan West of the University of Tasmania. For clarity, the references to clauses included in brackets in the terms of reference below are to assist in understanding the links to the Intergovernmental Agreement, but are not intended to be exclusive.

The Group will provide advice to the Prime Minister and the Tasmanian Premier by 31 December 2011 on the results of this independent verification process to be undertaken in accordance with this terms of reference jointly agreed by the Governments.

Terms of Reference

The Independent Verification Group is to:

1. Where harvesting work has already commenced in coupes within the 430 000 hectares of native forest identified in Attachment A to the Intergovernmental Agreement, provide advice to the Governments and Signatories before 22 August 2011 on the list of coupes where harvesting work is occurring and on a process for quickly determining practical rescheduling options (clause 26).

2. In consultation with the Signatories, design and implement an independent and transparent verification process to assess and verify stakeholder claims relating to sustainable timber supply requirements (including at the regional level), available native forest and plantation volumes in both the short and longer term, and areas, conservation values and boundaries of reserves from within the ENGO-nominated 572 000 hectares (clauses 20 and 28). In making its assessments, the Group will have access to and use the best available data (including data on demand and usage), including that held by Forestry Tasmania and others.
3. As part of this process, the Independent Verification Group is required to seek the agreement of the Signatories on the process (including the underlying methodology for assessing the matters set out in paragraph 2 above) for conducting the independent verification and their agreement to accept the results. The Chair is to inform the Intergovernmental Taskforce by 10 September 2011 of the process and whether the Signatories have agreed to it and to accept the results. (clause 20)
4. Put in place appropriate arrangements for ongoing consultation (clause 20) with governments (through the Intergovernmental Taskforce), Signatory organisations (through the Reference Group of Signatory representatives), experts and other stakeholders (including, but not limited to, the stakeholders listed at Attachment A). The Intergovernmental Taskforce and Reference Group of Signatories for these purposes are as defined in the Intergovernmental Agreement.
5. Assess and provide advice about stakeholder claims relating to conservation values, areas and boundaries of potential reserves from within the ENGO-nominated 572 000 hectares of High Conservation Value native forest. (clauses 20 and 28)
6. Assess and provide advice on whether at least 155 000 cubic metres per year of high-quality sawlogs, 265 000 cubic metres of peeler billets, and an appropriate supply of specialty timber noting that the industry claim is 12 500 cubic metres, (clause 17) can be sustainably supplied from outside the areas identified in paragraph 5 above over both the short and longer terms, taking into account existing wood supply requirements, contracts and usage, potential voluntary exits and availability of suitable plantation wood supply as noted in clauses 23 and 24 of the IGA, respectively.
7. If it is determined that the guaranteed wood supply (including at the regional level) cannot be supplied from outside the areas identified in paragraph 5 above:
 - a. provide advice on how much and what elements of the guaranteed wood supply cannot be met from outside the areas identified in paragraph 5 above; ; and
 - b. advise how much and what elements of the guaranteed wood supply would therefore need to be met from within the areas identified in paragraph 5 above.
8. Consult with signatories to seek agreement on an agreed option(s) to minimise impacts on conservation values if harvesting is deemed necessary under paragraph 7 above to meet guaranteed wood supply from within the areas identified in paragraph 5 above.
9. Submit a draft report to the governments, through the Intergovernmental Taskforce before 1 December 2011, on the results of the verification process including:
 - a. the conservation values contained in areas, and the boundaries of potential reserves, from within the ENGO-nominated 572 000 hectares of High Conservation Value native forest (clause 20)
 - b. sustainable wood supply requirements (including demand and usage at the regional level) (clause 17 and 20)
 - c. available native forest and plantation volumes in both the short and longer terms (clause 20)

- d. how much and what elements, if any, of the guaranteed wood supply would need to be met from within the areas identified in paragraph 5 above
 - e. the details of any agreement with signatories under paragraph 8 above on options to minimise impacts on conservation values if harvesting is deemed necessary to meet guaranteed wood supply from within the areas identified in paragraph 5 above
 - f. advice on known potential economic development opportunities and the conservation values in the areas identified in 5 above to inform government decisions on appropriate land tenure (clause 29)
 - g. any further legislative requirements that will assist the durability of the Intergovernmental Agreement and be needed to underpin guaranteed industry supply, conservation outcomes and the transition plan required for the successful delivery of the supply and protection commitments in the IGA (clauses 10, 19 and 37).
10. Submit a final report to the Prime Minister and the Premier on or before 31 December 2011, on the results of the verification process as per the draft report above, and taking into consideration any feedback supplied by governments through the Intergovernmental Taskforce.

In accordance with clause 21 of the IGA, the Commonwealth Government will provide funding to support the verification process. Both governments will ensure timely access to all relevant data, including that held by Forestry Tasmania, to the Independent Verification Group.

Membership of the Independent Verification Group

The Group will be led by Professor Jonathan West.

Other relevant independent experts, including with expertise in geology/mineralogy, will be jointly appointed by both governments, taking into account advice from Professor West following consultation with the Reference Group of Signatories. 4

Final report on the work of the

Independent Verification Group

for the Tasmanian Forests
Intergovernmental Agreement

Capstone report

Introduction

The Independent Verification Group (IVG) was established under Clause 20 of the Intergovernmental Agreement, and its primary task is to verify the high conservation values of native forests nominated under the Tasmanian Forests Intergovernmental Agreement (TFIGA) and their compatibility with sustainable wood supply requirements for industry. A copy of the TFIGA is at Appendix 1 and the Terms of Reference for the IVG are at Appendix 2.

The IVG was chaired by Professor Jonathon West, and its six members were appointed for their independence and their extensive expertise in forestry, forest ecology, conservation reserves, forest modelling and geology. The members of the Independent Verification Group are:

- Chair Professor Jonathan West
- Dr Robert (Bob) Smith
- Dr Michael Lockwood
- Professor Brendan Mackey
- Professor Mark Burgman
- Professor Ross Large

A short resume on each member is at Appendix 3.

The IVG spent approximately five months verifying claims about conservation values and wood supply, and met as a group on five occasions including several joint meetings with the Signatories Reference Group. Three reports have been provided to governments during the IVG process, an initial report in September 2011 by the Chair and two subsequent progress reports on 1 December and 31 December 2011.

The initial report responded to Clause 3 of the Tasmanian Forest Agreement Independent Verification Group Terms of Reference. The terms of reference for this advice are to:

“As part of this process, the Independent Verification Group is required to seek the agreement of the Signatories on the process (including the underlying methodology for assessing the matters set out in paragraph 2 above) for conducting the independent verification and their agreement to accept the results. The Chair is to inform the Intergovernmental Taskforce by 10 September 2011 of the process and whether the Signatories have agreed to it and to accept the results (Clause 20).”

A copy of this report provided in September 2011 is at Appendix 4.

Subsequently the IVG commenced its detailed verification work through the development of work plans and where necessary to commission additional research and services from outside parties. It was apparent early on that there was a high level of interest in both meeting with the IVG and providing comment on its draft work plans and methodologies.

The areas of the IVG's work of most interest to the Signatories Reference Group was the draft methodologies developed to implement the work plans, and in particular methodologies relating to the wood supply, economic, and some work plans went through more than 10 iterations.

The level of interest in the IVGs work extended well beyond the Signatories Reference Group and the list of stakeholders listed in the IVGs terms of reference. In particular there was a lot of interest and submissions from many local groups. The IVG met with a diverse range of stakeholders including many industry bodies, companies, unions, specialty timber groups, government agencies, beekeepers, and local organisations.

The interaction with the Signatories Reference Group has been excellent. They have been closely engaged in the detail of methodologies proposed by members of the IVG to verify the various conservation and industry claims. In particular the work plans of Professor Mark Burgman, Professor Brendan Mackey, and Dr Bob Smith attracted much constructive comment.

The IVG has considered all the relevant material supplied to it from a range of groups and agencies and commissioned work. It has also had access to necessary layers of government held data and other information. Most agencies were quite willing to assist the IVG, however in some instances, delays in accessing data from government agencies in a timely manner affected some of the IVG's work.

Each IVG member has had responsibility for the development of a work plan, and final copies of these are at Appendix 5. Based on the methodologies outlined in the work plans, each member has prepared a technical report, and where appropriate, these technical reports are accompanied by other commissioned reports. These technical reports are thus a mix of IVG written and commissioned reports, each of which contains an overarching analysis by the responsible IVG member.

All the commissioned reports are made available in the form supplied to the IVG consistent with the IVGs commitment to a transparent process, and will allow signatories and others to see the work that has contributed to the members reports. The reports contain a lot of valuable references to other work which will further allow an understanding of the assessments.

The Technical Reports are separately appended to this report.

Members' reports

Introduction

There are five substantial technical reports and appendixes. These technical reports are a mix of IVG written and commissioned reports, each of which contains an overarching analysis by the responsible IVG member.

Following is a short summary extracted from each of these reports

Review of wood supply scenarios

Professor Mark Burgman and Dr Andrew Robinson produced a report titled *Review of Tasmanian Forest Estate Wood Supply Scenarios* a summary of which follows.

The complete technical report is appended to this IVG final report.

Executive summary

Overall, the review of Forestry Tasmania's data management, inventory, growth and yield systems showed they were adequate for the task of assessing existing timber supply plans and a range of alternative future scenarios. The most important change from previously published assessments was the incorporation of a range of 'headroom' values to accommodate existing and future forest practices and operational constraints. This report uses headroom values from 10-40%, depending on the scenario, to encompass uncertainties about future forest management practices.

Broadly, the analyses show that if no new reserves are established, minimum Intergovernmental Agreement (IGA) wood supply guarantees for high quality sawlog supply (155,000 m³/yr) can be met from native forests until 2030 if headroom values are 30% or less. However, total demand including contracted sawmills (163,000 m³/yr) and regional ('country') sawmills (up to 25,000 m³/yr) cannot be met, even if headroom allowances are as low as 20%. Native forests alone cannot satisfy wood supply guarantees for peeler billets under any headroom assumptions. The results of this scenario illustrate that significant volumes will have to be sourced from plantations and / or private land if current demand is to be satisfied. Other examples in the body of the report reinforce this general conclusion.

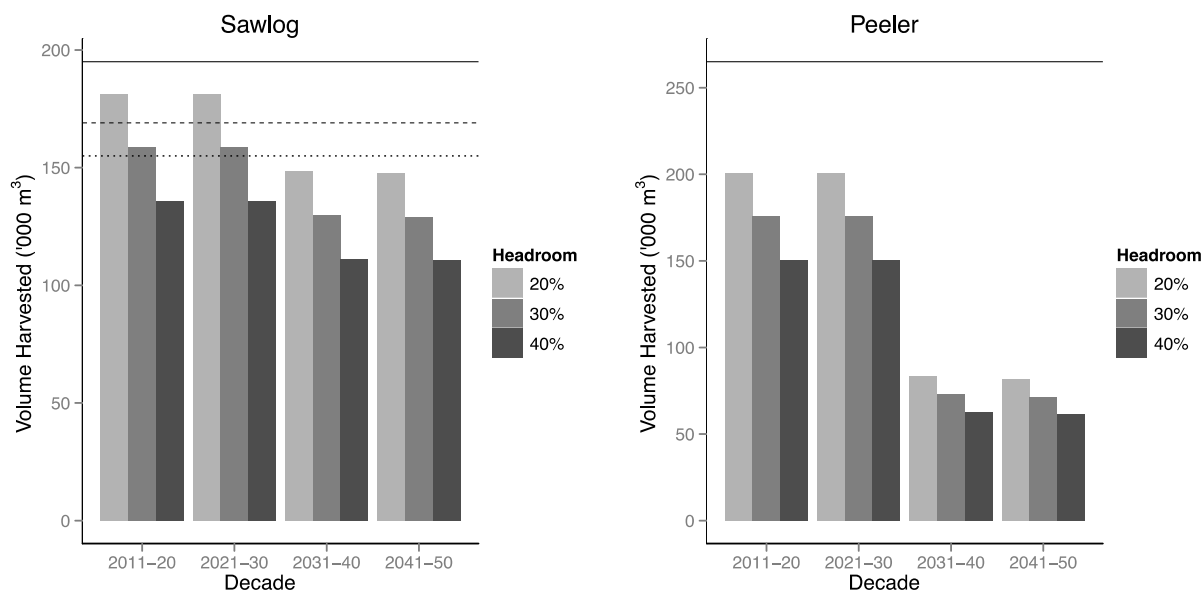


Figure 12 Maximum yield of High Quality Sawlog and Peeler Billets from public native forests if no new reserves are created. Dotted line: minimum sawlog commitment in the IGA. Dashed Line: Total Contracted Volumes. Solid Line: All Demand, including regional ('country') sawmills. These figures ignore potential supply of peeler billets from public plantations and private land.

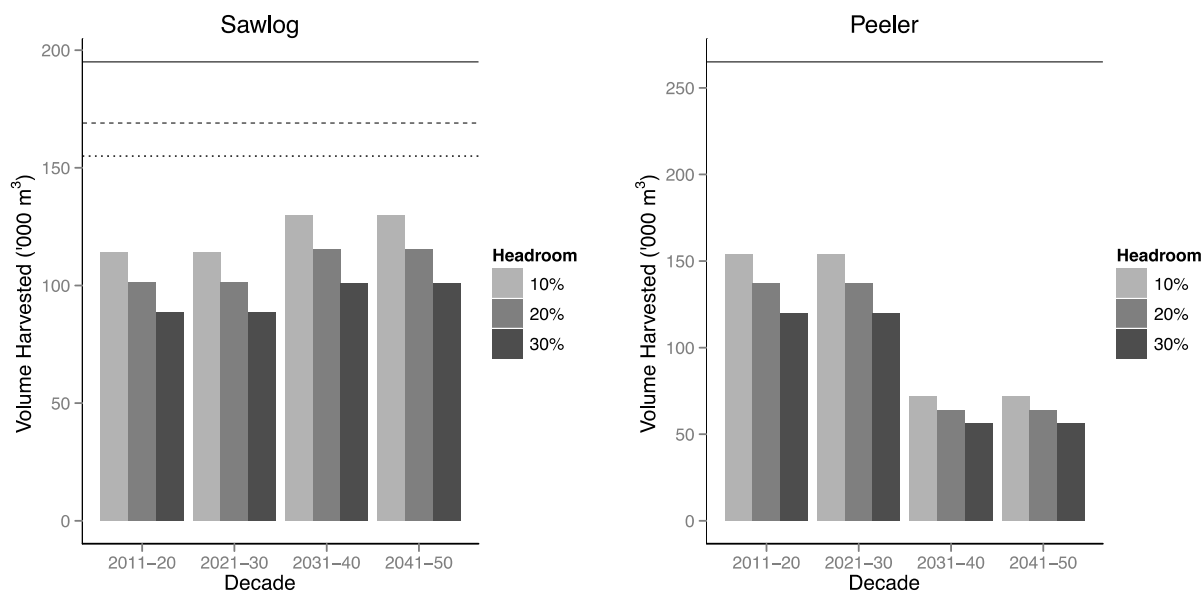


Figure 14 Maximum yield of High Quality Sawlog and Peeler Billets from public native forests if new reserves are created. Dotted line: minimum sawlog commitment in the IGA. Dashed Line: Total Contracted Volumes. Solid Line: All Demand, including regional ('country') sawmills.

In scenarios that include 572,000 ha of new, high conservation value forest reserves, shortfalls in the production of sawlogs and peeler billets from public native forests over the next 20 years are more substantial. If existing plantation resources contribute and new reserves are established, there is still a significant shortfall in sawlog and peeler supply over the next 20 years. Significant investments in new plantations and enabling technologies to process plantation sawlog and peeler material will be necessary to reconcile constraints after that period. Alternatively, supply will decline or the supply area will increase (i.e., reserve area will decrease). Transition plans should account for the time and budget necessary to develop appropriate plantation resources. A fuller analysis of risks and constraints of plantation grown material as a substitute for native forest material for sawlog and peeler billets is presented in Appendix 2.

The report presents estimates of the wood volumes that could be supplied from native forests, without any new reserves, over a 100 year period. Assuming 30% headroom, the sustainable sawlog yield is estimated to be approximately 137,000 m³ per year. The sustainable peeler yield is estimated to be 88,000 m³ per year. These sustainable yields are much less than the wood supply guarantees in the IGA. Contracted peeler and sawlog harvests cannot be sustained from native forest alone. The existing *Regional Forest Agreements* (RFAs) and *Tasmanian Community Forest Agreement* (TCFA) were designed to be sustained from both native forests and plantations.

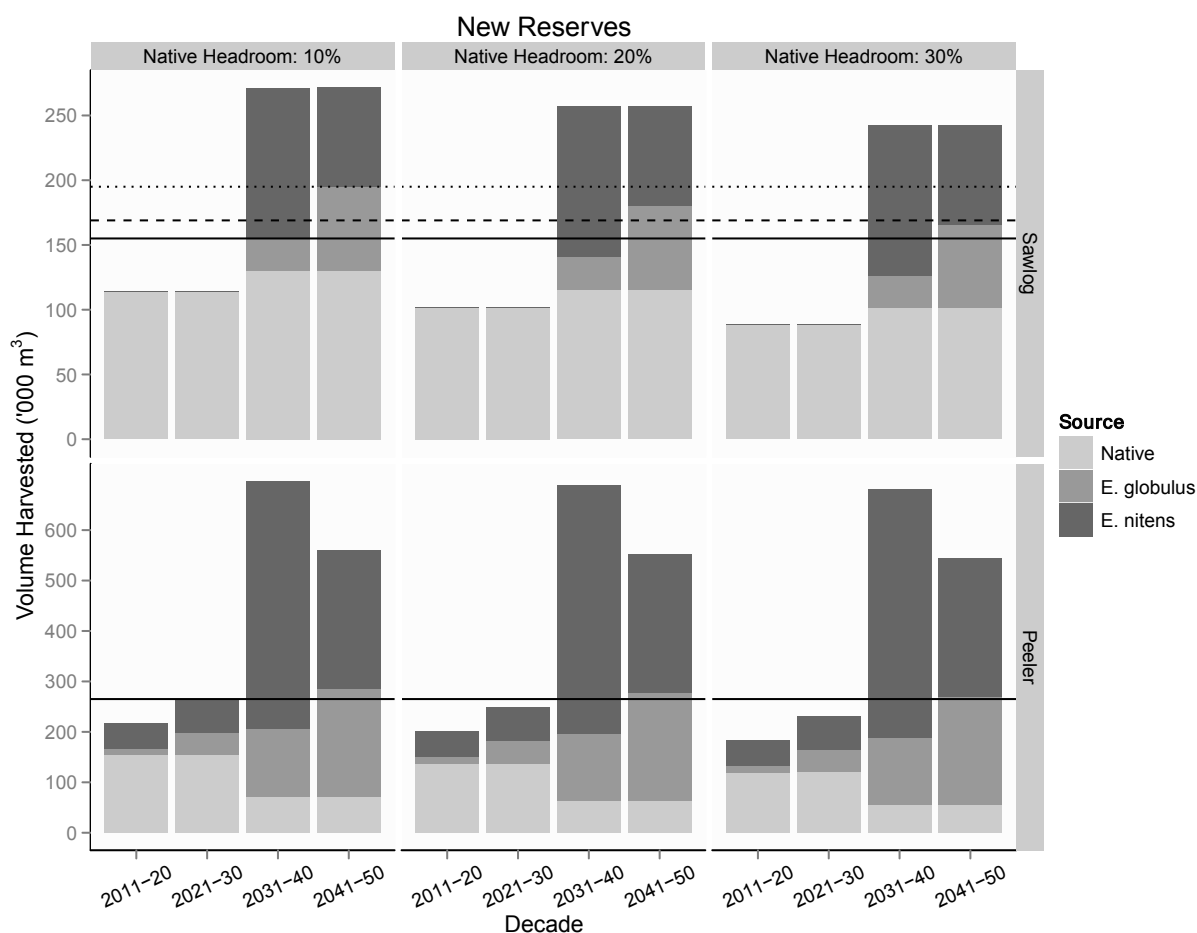


Figure 18 Potential supply of sawlogs and peeler billets from both native forests and public plantations, if they are appropriately managed with 572,000 of new reserves. Plantation supply of sawlogs and peeler billets from *E. globulus* plantations is generally seen to be less problematic than supply from *E. nitens* plantations.

Socio-economic work

Dr Bob Smith produced a report titled Socio-Economic Work Stream Relevant to Tasmanian Forest Intergovernmental Agreement (IGA) a summary of which follows.

The complete technical report is appended to this IVG final report.

Executive summary

Background

The work of the Socio-Economic Group is designed to assist decision makers in their deliberations for Stream Two (Protecting High Conservation Forests and ensuring sustainable wood supply) and Stream Three (Economic diversification) of IGA (Clause 8).

The purpose of this Report is to outline the status of work being undertaken for the socio-economic streams and detail some indicative impacts on jobs from changes to log availability to industry. At time of writing specific reservation/wood availability were still being negotiated. In this context the report is considered interim.

Work progress

The Jobs and Investment Changes Model has been developed and tested to generate predictions of changes in direct forest industry jobs and industry structures for a specified mix of conservation and log supply outcomes. The Model incorporates an assessment, based on survey data from forest industry firms, of the probability of firms successfully managing changes to regional log supply and the resulting impacts on jobs at regional level, and value of production and mill expenditure at local government area level.

With the purpose of estimating the flow-on impacts in regional economies generated by changes in wood availability to industry a literature review to identify an appropriate multipliers considered applicable to Tasmanian timber industry was completed. A project to construct a Tasmanian forest industry focussed input/output model has been commissioned.

Work was undertaken to verify the log supply contracts managed by Forestry Tasmania. Forestry Tasmania uses a mixture of short (1-5 years) and long term contracts (greater than 5 years) to supply eucalypt and specialty timber species to the Tasmanian forest industry.

In the context of the IGA contractual obligations of Forestry Tasmania include;

1. Ten long term contracts for the supply of 163,000 m³ per year of Category 1 & 3 sawlogs (high quality sawlogs) to 2027. (These contracts are relevant to Clause 17 of IGA “(wood supply) at least 155,000 m³ per year of high quality sawlogs.)
2. Two contracts for the supply of 265,000 m³ per year of peeler billets to 2021-2022 with an option for buyer for 5 year extension. (These contracts are relevant to wording in Clause 17 of IGA “(wood supply) of 265,000 cubic metres per year of peeler billets”).
3. Twenty-three long-term contracts (to 2016) for a log volume 19,230 m³ per year for specialty timbers. Log supply for two of the contracts are subject to availability. (These contracts are relevant to wording in Clause 17 of IGA “A speciality timber supply, noting the industry claim is 12,500 cubic metres per year, subject to verification”).
4. Long-term log supply contracts (2016-2027) for supply of other native wood products. These contracts cover other sawlogs, veneer, pulpwood, and pole and bridge timbers. In addition to the above contracted volumes Forestry Tasmania has traditionally supplied, subject to availability, a

variety of log grades through short-term contracts, including logs to regional sawmillers. (These contracts are relevant to wording in Clause 18 of IGA “Contracts for native wood that are in existence at the time of Agreement will be honoured”).

The treatment of specialty species timbers in Jobs and Investment Changes Model is at an aggregated level. The Model, at current stage of development, does not capture at sufficient detail the complex supply chain structures and varied products produced (required) to service markets. In addition there are considerable uncertainties as to the levels of sustainable supply for specialty timber (both in aggregate and by species) which can be generated for various conservation/reservation scenarios and associated harvesting and utilisation structures. Only limited modelling has been undertaken and consequently there are considerable uncertainties associated with future supply levels.

In recognition of economic, heritage and social significance of Tasmania’s special species timber industries, a targeted Project addressing the specific interests and requirements for various sectors using specialty timbers (eg veneer, boat building, furniture, crafts) is being implemented

It is relevant to note that the commissioned forest industries focussed input/output analysis together with the firm specific secondary processing data currently being collected to populate the Jobs and Investment Changes Model will assist in predicting impacts on various sub-sectors for specialties species timber industry (processing, design and product production and retail) for various levels of supply.

The Progress Report outlines the works program being completed to finalise the socio-economic projects.

Indicative results

For demonstration purposes indicative results for direct primary processing and contractor jobs supported from predicted wood supply scenarios (1 & 2) analysed in “Review of Forest Estate Scenarios” (Burgman and Robinson, Draft February 2012) were generated. Scenario 1 is built around maximum yield from the current native forest estate. Scenario 2 is built around maximum yield from public native forests with additional reservation of 572,000 ha compared to current land use allocations for public lands.

The impact of transitioning the forest industry to wood flows predicted by Scenarios 1 and 2 in terms of direct jobs in primary processing and contracting was assessed against a Baseline for the Tasmanian forest industries as at February 2012. The analysis also included a direct comparison of transitioning to Scenario 2 utilising Scenario 1 as the baseline.

The indicative analysis indicates that there would be substantial job losses associated with the transitioning of the native forest industry from its current wood supply levels to levels to achieve the land use allocations and wood flows specified by Scenarios 1 and 2. Impacts for wood flows and jobs are generated by region. Changes to gross value of production, mill expenditures and estimates of flow-on impacts in regions were calculated but not included in Progress Report.

Forest conservation

Professor Brendan Mackey produced a report titled *Summary report of Conservation Values* a summary of which follows.

The complete technical report is appended to this IVG final report.

Executive summary

Introduction

This summary document provides a broad overview of information considered relevant to the brief. Whilst we have diligently endeavoured to ensure that the best available data and methods have been employed and that the results are accurate, we cannot warrant that the material is free of error due to, among other things, the limited time available to prepare this report. Consequently, the advice contained herein is provided on the basis that myself and the Independent Verification Group will not be liable for any error or omission, in contract, tort or otherwise. However, should any error or omission be notified, the Independent Verification Group will use their best endeavours to make the necessary corrections.

The environmental non-government organisations (ENGOS) who are signatories to the Tasmanian Forest Agreement have proposed that an additional 572,000 ha of public forests be legislatively protected as secure conservation reserves, that is, moved from multiple use forests (and some other tenures) into secure legislated protected areas, assigned the highest possible IUCN category I – IV of conservation tenure, and managed by the Tasmanian Parks & Wildlife service. The ENGOS claims about the conservation values of these forests that warrant their protection are detailed in the report entitled “Tasmania’s Native Forests: Places for Protection. A background on the ENGO identified high conservation value reserve areas, August 2012” published by The Australian Conservation Foundation, Environment Australia (The Conservation Council) and The Wilderness Society (hereafter, the ENGO report). The 572,000 ha of the proposed ENGO forest reserves (hereafter, ENGO forest) is distributed across 270 discrete forest areas which are mapped in a Geographic Information System (GIS) as “polygons” with a unique identification number. The location of these ENGO forest polygons is shown in Figure 1. Also shown in this figure are the boundaries of the current Natural Reserve System (NRS) which includes non-forest land.

The Independent Verification Group (IVG) for the Tasmanian Forest Agreement was tasked with evaluating the ENGO claims regarding the conservation values of the proposed 572,000ha of new formal forest reserves. A conservation work plan (Mackey 2012) was developed which specified the conservation values at stake, the public policy basis to these values, and the methods by which the evaluations will be undertaken. The work plan was implemented with the assistance of a team of experts who were contracted to undertake specific analyses. The Technical Reports for these analyses are listed as a set of Appendices at the end of this report. These reports will be made publicly available via the internet. This report summarises the main findings and conclusions from implementation of the conservation work plan. In each section, a brief summary is provided of the ENGO claims, the definitions and approaches employed, the key evidence generated, and the main conclusions reached regarding their validity.

Details of the approaches, including data and methods, used to assess the conservation values of the ENGO forests are provided in the conservation work plan and the Technical Reports. However, some comment on the methodology is warranted here. The IVG have interpreted that the intent of the ENGO claim is for the ENGO forest to be included in the NRS. Therefore, the overarching approach taken by the IVG was to assess the additional benefits to the NRS of the ENGO forest. “Benefit” was defined in terms of ten conservation values: (i) Representation of forest biodiversity; (ii) Habitat for listed threatened species; (iii) Refugia; (iv) Old-growth; (v) Wilderness; (vi) Heritage; (vii) Connectivity; (viii) Restoration; (ix) Ecosystem services and (x) Unique features. These values encompass the claims made by the ENGOS but are grounded here on Australian Government forest, biodiversity and environmental conservation commitments as articulated in international law

(Convention on Biological Diversity, World Heritage Convention), Commonwealth law and national policy statements.

In an attempt to summarize the conservation values of the ENGO forest, the ENGO report evaluated forest areas according to a so-called High Conservation Value (HCV) score of between 0 and 29. The HCV score evaluation was presented as a set of histograms comparing, among other things, the difference between the ENGO forest and (what under the ENGO proposal would be) the remaining wood production forest. This approach of collapsing all the conservation values into a single index has some heuristic value for the purpose of communicating what is a complex story. However, this approach was not used by the IVG primarily for three reasons. First, the different forest conservation values are not fungible, i.e. they cannot be reduced to a common numerary; unlike the market value of different minerals or wood products. Second, the HCV approach requires that each conservation value is assigned a weight indicating its relative importance. However, this is a subjective process and the assigned weightings do not necessarily have an objective basis in conservation science. Third, calculation of an HCV was not necessary for the IVG to fulfil its terms of reference as the IVG's primary task was to determine the validity of the claims made by the ENGO report regarding the specific conservation values of ENGO forest.

An important set of NRS assessment criteria is the CAR triptych of "Comprehensiveness, Adequacy and Representativeness". Here, Comprehensiveness and Representativeness are dealt with under the conservation value called "Representation of forest biodiversity", while Adequacy is addressed through the other values; e.g. habitat for threatened species. For some of the conservation values, maps are provided which show the change in their protected status when the ENGO forest is added to the current NRS. Therefore, we are able to provide some information about which of the 270 ENGO forest polygons improve the NRS, and for those that do an estimate of their relative contribution to the NRS in terms of the set of ten conservation values. Note that the conservation value called "Heritage" refers to established and potential World Heritage and Natural Heritage values of the ENGO forest. We have also assumed that if a forest area has potential World Heritage or National Heritage values it therefore has conservation value that warrants inclusion in the NRS.

It is important to note that the IVG's terms of reference restricted analysis of conservation values to forest on public lands. Therefore, no results are presented here which relate to the conservation values of forest on private land. This is an important caveat because for some conservation values it could be that forest on private land may be as important or in some cases more important than forest on public land. This is likely to be the case for Comprehensiveness and Representativeness with respect to certain forest ecosystem types and for certain priority species. A second caveat is that the IVG's terms of reference required its analysis to be focussed on validating the ENGO claims with respect to their 572,000 ha of proposed forest reserves (hereafter, the ENGO forest). Therefore, the IVG did not undertake a systematic conservation planning exercise using an optimisation tool such as "Marxan". In the absence of an optimization analysis, for some of the conservation values it was not possible to comment as to whether the same conservation outcomes could be achieved with a smaller total forest area, whether a different set or spatial configuration of forest areas would give a better result, or whether there are other forest areas on public land that might deliver better conservation outcomes. However, for other conservation values, it appears there are few if any alternatives given the legacy of land use and forest management history. Many of the IVG analyses enable the ENGO forest polygons to be ranked in terms of their relative conservation importance. Furthermore, the Heritage assessment criteria required consideration of issues of integrity as they relate to, among other things, spatial configuration, ecological condition, connectivity and regional context.

The availability of appropriate data is always a limiting factor in conservation evaluations. For example, mapping of core fauna habitat at a scale commensurate with land management requires, among other things, detailed knowledge of the species life history including home range and mobility, the specific habitat resources it requires for food, shelter and reproduction, an understanding of meta-population dynamics, and geo-spatial information about the current location of the required habitat resources. Furthermore, to distinguish potential from extant distributions requires a combination of comprehensive reconnaissance surveys and long term monitoring. Such data are unavailable for the overwhelming majority of wildlife species in Tasmania. Therefore, the IVG has drawn upon the best available data and methods, subject to the further limitation that the availability of data is determined by the data custodians.

In addition to the results presented in this report, a useful by-product of the IVG work is that a new conservation values information database has been generated for Tasmanian public forests. Much of this information is spatially based and stored as layers in a Geographic Information System. This information can be used to answer specific questions about the conservation values of these forests that may arise in ongoing discussions under the Tasmanian Forest Agreement. For example, the IVG is preparing spread sheets which summarize the specific conservation values and assigned ratings for each of the 270 ENGO forest polygons. This will enable questions to be answered such as which polygons did not register against any of the identified conservation values or which polygons contribute most to a given suite of conservation values. Please also note that for various logistical reasons it has not proved possible to reproduce some figures (maps in particular) at a resolution that enables all relevant details to be legible. Therefore the IVG will also be making the figures contained in this report available at a high resolution.

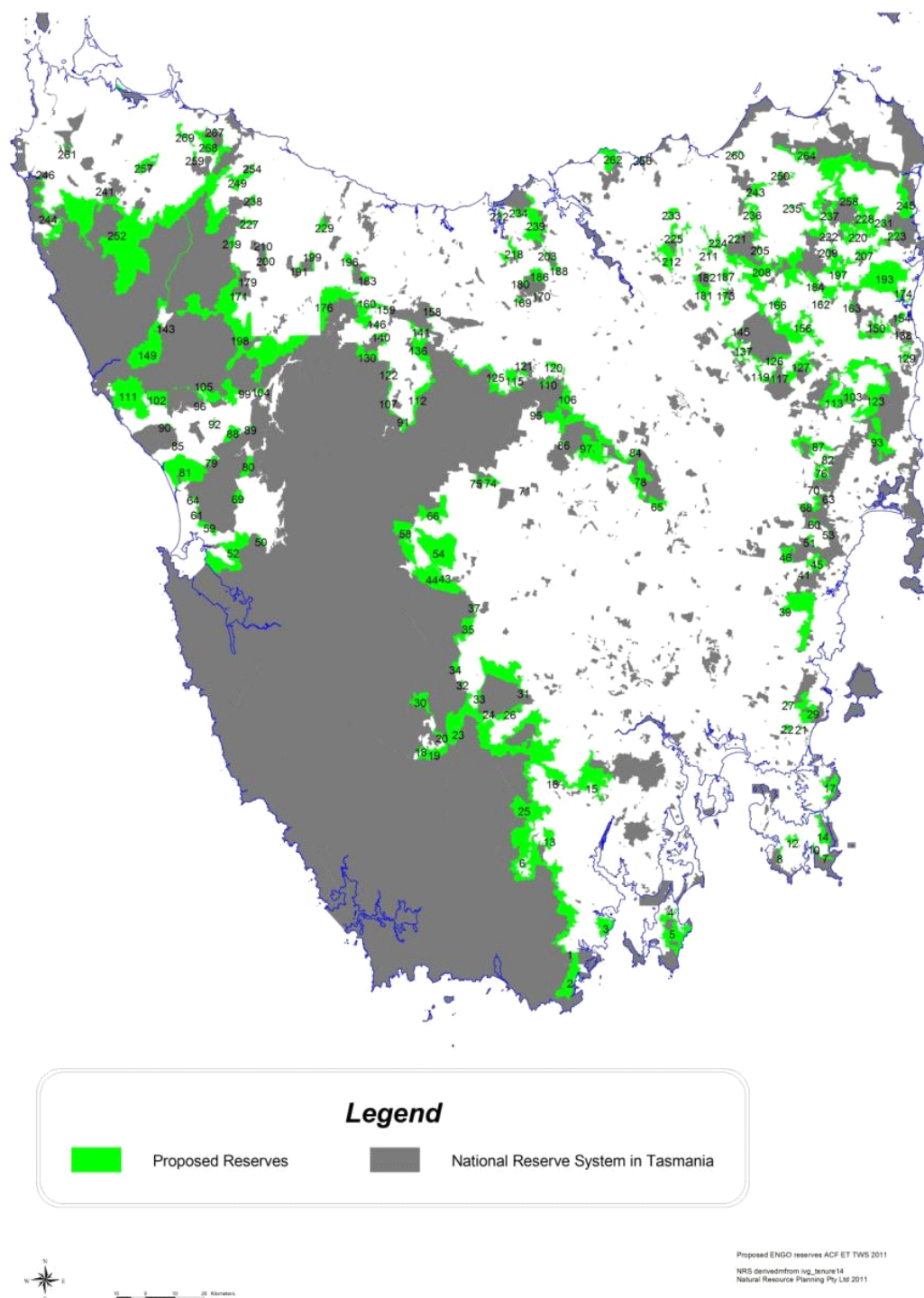


Figure 1 The National Reserve System (NRS), and the 572,000 ha of forests proposed for protection by the Environmental NGOs who are signatories to the Tasmanian Forest Agreement.

Summary of main conclusions

- In general, the ENGO report's claims regarding the conservation values of their proposed new forest reserves (i.e. the ENGO forest) are largely substantiated. The 572,000 ha comprises 270 spatially discrete areas or polygons. One or more of the set of 10 conservation values was identified to be present in most of these polygons. A spread sheet is in preparation which will provide information about the specific conservation values and other characteristics of each ENGO forest polygon.
- Parcels of land within some of the polygons require further investigation to confirm their conservation status. There are around 28,000 ha where field inspection is required to validate their land cover as the IVG analyses suggest they are not native forest. However, their inclusion in a reserve is still feasible contingent on other factors such as their landscape context for restoration, connectivity, or boundary integrity. There is a further 8,317 ha which represents a possible boundary discrepancy revealed by very fine scale satellite imagery that warrants similar field inspection.
- The contribution of the ENGO forest to the reservation of Comprehensiveness and Representativeness was found to be measurable and important. The results of the comprehensiveness analyses revealed that (a) the number of forest ecosystems whose current area in the NRS is <15% is 86, <17% is 93, and <25% is 124; and (a) the number of forest ecosystems whose area in the NRS with the addition of ENGO forests is <15% will be 42; <17% will be 51; and <25% will be 80. These three percentages equate with the RFA target (15%), the CBD Aichi target (17%), and the lower limit of the scientifically based range (25%). This means that addition of the ENGO forest to the NRS results in an improvement in Comprehensiveness of around 17%. Addition of the ENGO forest also improved the representativeness of the NRS in terms of reserving both (i) more productive forest areas and (ii) the number of vascular plant species found within each forest ecosystem type. The additional contribution of the ENGO forest to the reservation of drought refugia and fire refugia was by comparison relatively minor.
- Relatively substantial and significant gains were revealed regarding the contribution of the ENGO forest to protecting conservation values associated with: the habitat of many threatened listed and priority plant and animal species; evolutionary refugia; old growth; World Heritage and National Heritage; the ecosystem service of carbon storage; connectivity for key species and adaptation capacity to climate change; and unique features associated with Tasmanian eucalypts.
- The ENGO forests would improve the NRS status of all major EPBC listed groups including crustacean (vulnerable), fish (endangered) and invertebrates (critically endangered, endangered, and vulnerable). The ENGO forests would increase the NRS reservation of 16 listed species by at least 25% and 40 species by at least 5%.
- The ENGO forests make a contribution to the protection of the core and known ranges of most major groups of priority fauna, including terrestrial mammals, crustaceans, fish and invertebrates listed under the Environment Protection and Conservation Act as nationally endangered & vulnerable. The ENGO forests improve the protection of the core range of two Tasmanian listed endangered bird species by an average of 10% (grey goshawk 15% and azure kingfisher 8%). The azure kingfisher is also nationally listed as endangered. The nationally and state endangered swift parrot has 9% of its core range and 2% of its northwest breeding area in ENGO forests, with its north and west potential range (5%) and south-eastern potential range (10%) within the ENGO forest. Three species of birds that are priority forest species have core (swift parrot & masked owl) or known ranges (forty-spotted pardalote) that intersect with the ENGO forest.
- Over half of the proposed reserves are ranked high priority for improving the reservation status and connectivity for Tasmanian devils, spotted-tailed quolls and eastern quolls and for a composite of all three species occurring in sympatry. The ENGO forest in the northeast of Tasmania and along the Eastern Tiers would greatly improve reservation/protection status and connectivity for the sympatric carnivore guild. There is also potential to greatly improve connectivity and population protection in the southern forests/Derwent Valley. The native

carnivore habitat analysis was more comprehensive than that undertaken for the priority fauna modelling. For example, knowledge regarding connectivity was integrated into the analysis. Consequently, a high level of certainty can be attached to the conclusions drawn about the contribution of the ENGO forests to the reservation of these species.

- The ENGO forest would contribute strongly to the reservation of priority crayfish: an additional 10% to the reservation of the known range of the giant freshwater crayfish; Scottsdale burrowing crayfish (34% improvement); Mt Arthur burrowing crayfish (15% improvement); and Central north burrowing crayfish (3% improvement).
- For terrestrial invertebrate species the proposed ENGO reserves would protect >40% of additional habitat for 10 species (7 rare land-snails and 3 vulnerable stag beetles). Stag beetles as a group have considerable improvement in the protection of their known range in ENGO proposed reserves. For example, Bornemissza's stag beetle (e) has 69% of its known range in ENGO proposed reserves, Vandershoor's stag beetle (v) and Simson's stag beetle (v) both have >40% of their known range in ENGO proposed reserves.
- The ENGO forest substantially improves the reservation of a range of priority flora species (62 vascular flora species). Three ENGO forest polygons are rated as "extremely high", seven reserves as "very high", 17 forest polygons as "high" and 11 polygons as "medium" contribution for priority flora. The ten highest ranked ENGO forest polygons would make an outstanding contribution to the National Reserve System of Australia and will help to address deficiencies in the representation of threatened flora in the reserve system. ENGO forest polygon 123 in Tasmania's east is outstanding in its high threatened flora values, capturing important populations of 12 priority threatened flora species. An additional 60 of the proposed ENGO forest polygons would make a substantial contribution at the State and/or bioregional levels. Two nationally listed species have 100% of their known distribution protected in ENGO forest polygons, and ten species have more than 40% improvement in their status (including three nationally listed).
- It is clear that a small number of the ENGO forest polygons in western Tasmania would make a significant contribution to protecting paleo-endemic plants. Western Tasmania is a genuine global hotspot for plant paleo-endemics. Also identified were a significant number of ancient or relictual faunal groups which are described as globally significant within the area proposed for formal World Heritage Assessment. The analysis for these species also illustrates ancient, faunal 'breaks' or biogeographic demarcations still evident and operating in Tasmania.
- The analyses support the ENGO claim that their proposed additions to the NRS will protect a substantial proportion of extant old growth/mature forest. The area that would be protected (232, 286 ha) would enable the Tasmanian Government to meet its old growth protection goal. The 270 polygons that comprise the ENGO forest differ in the contribution they make to this target as the percentage area which is old growth/mature varies from <15 to >90% which presumably reflects some combination of natural variability and land use history.
- Forest wilderness issues warrant further consideration, especially in areas adjoining the TWWHA and the Tarkine. While the lack of data prevents further detailed comment on these issues, it will be important to assess the current extent of and potential to restore forested wilderness in areas which warrant formal assessment for World Heritage listing.
- The claims relating to all of the 270 ENGO proposed reserves were verified and assessed either individually or in ecologically meaningful clusters against World or National Heritage criteria. While the IVG heritage report (Technical Report 5A) used the National and World Heritage criteria set out in the EPBC Act it does not constitute a formal heritage assessment as provided under processes established under the EPBC Act and World Heritage Convention, respectively.

The heritage report provides detailed documentation on the results for each cluster of ENGO proposed reserves and draws firm conclusions as to the heritage significance of ENGO proposed reserves where the data is strong enough to do so. Technical Reports 5B and 5C provide analysis and information drawn on in 5A in relation to the heritage significance of the tall eucalypt forests. Information and

analysis provided in Technical Reports 2A, 2B, 3A, 3B, 3C, 3D, 7A, and 9A has not been fully integrated into the heritage report but in all cases add to the heritage significance of particular ENGO polygons or clusters of polygons.

In many cases heritage value is inextricably linked to boundary and reserve design issues. These issues, which are, in the case of World Heritage, linked to conditions of integrity, are addressed in detail in the heritage report. The combined significance of existing formal reserves and contiguous ENGO proposed reserves is highlighted in several places in the report (often a case of the 'sum of the parts being greater than the whole'). Boundary issues for the TWWHA have been a matter of public and scientific contention since inscription in 1982 and extension in 1989, and confirmed by a number of findings and reports by IUCN and the World Heritage Committee over many years.

The current TWWHA boundary in many places lacks ecological integrity or is deficient from a management perspective, and creates an artificial barrier to natural ecological interactions. Also, the existing boundaries detract from the integrity of the TWWHA by not encapsulating the distribution of natural attributes that contribute to existing World Heritage values. There have been a number of minor changes to the boundary since inscription in 1989, which have helped in some small ways, e.g. with some inlier issues, none have solved the fundamental problems relating to adjacent areas of likely heritage significance. Technical Report 5A proposes a number of revisions to the boundary of the TWWHA to resolve the integrity issues and lessen the management challenges

The main conclusions from the heritage report were:

- The majority of ENGO proposed reserves meet one or more National or World Heritage criteria, and formal national or international heritage assessment is warranted for most of the ENGO clusters.
- The assessed natural heritage value of many ENGO proposed reserves is significantly dependent on their relationship with existing formal reserves. They not only have values in their own right, but combined with existing reserves, significantly improve the viability and ecological integrity of these existing reserves.
- It is apparent that beyond the ENGO proposed reserves, state forest land in Tasmania has been extensively logged and/or converted to plantation with the result that much of their natural heritage values have been destroyed or severely degraded. The ENGO proposed reserves have been found to mainly encapsulate most of the remaining intact forest. It follows that the ENGO proposed reserves represent the last chance to address and protect many natural heritage values on forested public land.
- Many of the ENGO proposed reserves have the potential to protect cultural heritage values in addition to their natural heritage values. Where this information was available it has been identified and included in the assessment but this report focused primarily on verifying natural heritage values.
- Many of the ENGO proposed reserves in the North East and East Coast of the state were recognized as being significant for their habitat connectivity and many existing formal reserves are also critically important to that connectivity.
- A separate IVG Technical Report also identified the global significance of a connected area of tall eucalypt forests, albeit involving some restoration, which would add a major new dimension to the TWWHA. The small area of tall eucalypt forest within the TWWHA is currently acknowledged as contributing to criteria (vii) and (ix). New research and analysis leads to the conclusion that not only do the tall eucalypt forests readily satisfy criterion (vii), (ix) and (x), it is highly likely that these forests also satisfy criterion (viii).
- The area known as the Tarkine was assessed to have values that meet National Heritage criteria and are very likely to meet World Heritage criteria. It would, if included in the existing TWWHA,

add a major new component to that inscribed property, by recognizing and protecting the largest area of cool temperate rainforest in the southern hemisphere. As found elsewhere with a number of other ENGO clusters, the existing adjacent or nearby formal reserves, when combined with the ENGO Tarkine cluster make a major contribution to the overall heritage value and significance of the area known as the Tarkine. In terms of formal World Heritage assessment, the Tarkine cluster, because of its likely values in common with the TWWHA, would best be considered as an extension of the Tasmanian Wilderness World Heritage Area, especially given the likely connectivity between the two, rather than as a stand-alone heritage area.

- Southern Forests (Cockle Creek to Upper Derwent) - a substantial proportion of the ENGO proposed reserves adjoining and adjacent to the eastern boundary of the Tasmanian Wilderness World Heritage Area (TWWHA) were found to have important conservation values. Many of these values were derived from the area's tall eucalypt forests but a significant number of areas have other important heritage attributes including karst, caves, Aboriginal sites and glacial features. Given their adjacency, these important attributes would add to the values and integrity of the TWWHA.
- West Coast (between TWWHA and the west coast, south of Pieman River) – a cluster of ENGO proposed reserves in this region were identified as having values that met National and World Heritage criteria, and which should also be considered in the context of the TWWHA in a formal heritage assessment.
- Northern TWWHA (Great Western Tiers, Central Plateau, Mole Creek Karst, Mersey, Cradle Mountain) – Many of the ENGO proposed reserves adjoining or adjacent to the northern boundary of the TWWHA were identified to have significant conservation values with respect to National and World Heritage criteria. Many of the proposed ENGO proposed reserves were assessed to make important contributions to the existing values and/or integrity of the TWWHA and to meet World Heritage criteria. The ENGO proposed reserves in the Mole Creek karst region were also assessed to meet World Heritage criteria.
- North Coast ENGO proposed reserves - a series of ENGO-proposed reserves along the north coast and not associated with the Tarkine, TWWHA or the North East clusters were separately assessed. Although most contained significant conservation values of state significance, none were considered to meet World Heritage criteria. Several clusters were assessed to meet National Heritage criteria.
- North East cluster - the combination of all the existing formal reserves and the ENGO proposed reserves here is that it is potentially a single protected area with a high degree of connectivity between component parts. The north-east of Tasmania demonstrated biodiversity and genetic differences when compared with western Tasmania which suggests a long-standing separation of the respective biotas—the 'two Tasmanias'. This evolutionary separation contributed to the assessment that the North East-East Coast cluster meets National Heritage criteria.
- Several other ENGO polygon clusters were assessed as being likely to meet National Heritage criteria in Wellington Range, Bruny Island and Tasman—Forestier Peninsula.

Carbon & freshwater ecosystem service values

No results were available at the time of writing this report for the freshwater ecosystem service value. However the results of some complementary analyses illustrate the potential benefits of the ENGO forests to reservation of freshwater ecosystem values.

Creation of the ENGO reserves has the potential to make a 'significant and quick' contribution to reducing Australia's greenhouse gas emissions. Using a method derived from Australia's proposed FM reference level accounting framework, it is estimated that, if the ENGO reserves are created, Tasmania's multiple use public native forests will generate FM credits equal to: (a) between 7.4% and 8.7% of Australia's cumulative abatement task over the period 2013-2020 if Australia has a 5%

emission reduction target for 2020; and (b) between 2.5% and 2.9% of Australia's cumulative abatement task over the period 2021-2030 if Australia has an 80% emission reduction target for 2050 period 2021-2030 if Australia has an 80% emission reduction target for 2050.

Provided certain pre-conditions are satisfied, the creation of the ENGO reserves could be declared an eligible offsets project under the CFI. On the assumption that this occurs, and that Australia accounts for FM in the post-2012 era, it is estimated that the project could generate:

- (a) 1.90 (1.66-2.12) Mt CO₂-e yr⁻¹ of Kyoto ACCUs over the period 2013-2020; and
- (b) 2.01 (1.88-2.19) Mt CO₂-e yr⁻¹ of Kyoto ACCUs

over the period 2021-2030. The Kyoto ACCUs that are issued in relation to the ENGO proposed reserves will effectively be 'carved out' of the larger pool of FM credits associated with Tasmania's public native production forests. Both the Kyoto ACCUs and the FM credits are likely to have a market value. The Kyoto ACCUs could be sold into domestic and international compliance markets. The FM credits remaining after the deduction of the Kyoto ACCUs could be used to facilitate a 1:1 increase in carbon unit sales under the *Clean Energy Act 2011* (Cth) (CE Act) or sold into international compliance markets.

Connectivity

Several of the analyses identified connectivity as important to achieving long-term ecological protection and resilience. Connectivity is considered particularly important to: (i) meeting the needs of carnivores and species with extensive range; (ii) assisting species naturally adapt to climate change; (iii) enhancing landscape biological scale permeability and associated natural process including dispersal and meta-population dynamics; and (iv) improving overall ecological integrity particularly in relation to the integrity of the National Reserve System boundaries. The ENGOs, in selecting their proposed forest reserves, had obviously given attention to connectivity in terms of improving the integrity of the existing reserve system.

Restoration

A number of areas were identified in some detail that would benefit from ecological restoration and in particular restoration of wilderness values. It was noted that in some areas even though there has been extensive disturbance from logging and conversion activities, where the area was assessed by the IVG as meeting World Heritage criteria (e.g. the Styx Valley) a long-term view should be taken of the benefits of active management to assist ecological recovery.

Unique features

Analyses revealed some of the unique features associated with Tasmania's eucalypt forests. A significant number of Tasmania's Giant trees would receive protection in the ENGO forests and areas important for past and future evolution would receive improved levels of protection

Complementary analyses (CA) 1 & 2

CA1- Knowledge gap analysis

The ENGO document and supporting evidence were read carefully and assessed against a set of criteria which addressed the veracity of the claims made in the documentation. The documents vary in their detail and degree of persuasion but are generally of a high standard, with cogent arguments supported at least in part by modern conservation theory and practice. However, some documentation

is rather dated and overlooks newly available evidence and conservation insights. A number of critical gaps in available conservation knowledge that could impact the potential values of ENGO forest areas were identified. Nevertheless, in most cases new information reinforces the biodiversity values previously collated. Additional information was identified which strengthened the benefits of protection for a significant number of ENGO forest polygons.

CA2 Off-reserve impacts review

The IVG review of off-reserve impacts noted shortcomings in forest management outside reserves for biodiversity conservation and concluded that off-reserve management in Tasmania is poorly coordinated, opportunistic, beset with on-going compromises, and under resourced in terms of management funds and research needed to make good decisions. The conservation outcomes mediated through the Forest Practices Code as administered by the Forest Practices Authority are mixed and sometimes controversial. Off-reserve management also needs to respond to new research which is uncovering extraordinary biodiversity riches in Tasmania, including at the genetic level. The latter is yielding new insights into the history of the biota and offers guidance for conservation planning for the future. Contrary to the National Forest Policy, complementary off-reserve management has not been advanced since the RFA was signed in 1998. Rather available forest management statistics support the conclusion that industrial logging has intensified since 1998. As a consequence, achieving nature conservation objectives is even more reliant on the formal reserve system because, among other things, habitat quality in many areas is likely to have declined. In this context it is worth noting that the priority fauna analysis did not consider extant habitat quality

Social values and reserves

Dr Michael Lockwood and Mr Sean Cadman produced a report titled *Social Values and Considerations for Effective Reserve Establishment and Management* a summary of which follows.

The complete technical report is appended to this IVG final report

Executive summary

This report is a contribution from the Independent Verification Group (IVG) to processes arising from the Tasmanian Forests Intergovernmental Agreement between the Commonwealth of Australia and the State of Tasmania. *Term of Reference 5* requires the IVG to “Assess and provide advice about stakeholder claims relating to conservation values, areas and boundaries of potential reserves from within the ENGO-nominated 572,000¹ hectares of High Conservation Value native forest”.

The ENGO report on high conservation value areas included consideration of “social, cultural and spiritual importance to local, national and/or international communities”; and “forest areas that contribute to good reserve design”. In this report we provide advice on the social values of the ENGO potential reserve areas and assess the claims regarding these values made by the ENGOs. In the context of informing reserve boundary decisions, we also provide advice on some of the potential impediments to effective reserve establishment and management and assess the extent to which these impediments are evident in the ENGO proposed areas.

¹In the IGA and IVG documentation, the ENGO reserve proposals are specified as covering 572,000 ha. However, adjustments to the boundaries to remove anomalies in the original mapping reduced the area to 563,683 ha.

The analysis indicates that at least 20% of ENGO proposed reserve areas are of high social value, and much of the balance is at least of medium social value. This finding is consistent with the claims made in ACF, ET and TWS (2011). Importantly, the social values associated with conservation of Tasmanian State Forests are underestimated in this report, as the data on which our analysis is based are deficient in terms of spatial resolution, input from stakeholders, and currency. Nonetheless, areas of high social value are particularly evident in the proposed ENGO reserve areas near Adamson's Peak, Upper Florentine and to the north of Mouth Field, south of Clarence Lagoon, south of Laughing Jack Lagoon, south of the Rapid and Sumac confluence, between the Frankland and Arthur Rivers, the northern fall of the Great Western Tiers, east of the Blue Tier, south of St Helens, and south of Ben Lomond.

We recommend that, to assist ongoing land use and management decisions, further work be done to identify the nature and distribution of social values across Tasmanian public lands.

Impediments to effective reserve establishment and potentially problematic tenure considerations are evident in 12 of the 270 ENGO proposed reserve areas (14,353 ha of 563,683 ha, 2.5%). Furthermore, decisions to establish reserves in the north east of the State need to take into account future challenges for reserve managers associated with matters such as fire protection arising from their adjacency to plantations and post 1960 logging regeneration.

Potential impediments to effective reserve management, including leases and licenses, water and energy infrastructure, road networks and apiculture sites, were assessed within each of the proposed ENGO reserve areas. The areas where these internal encumbrances within the proposed reserves are of most significance are west of Upper Blessington, south of Targa, east of Port Sorrell, north of Millers Bluff, west of Tullah, east of Williamsford, west of Renison Bell and west of the West Coast Range. These considerations indicate that careful planning and negotiation between governance authorities, as well as significant resourcing, will be necessary to minimise the difficulties faced by the agency charged with managing any new reserves established over these areas.

We recommend that, before finalisation of reserve boundaries, further analyses be done on the potential impact of adjacent land uses, non-reserve in-holdings and encumbrances, and that inclusive and open discussions be held regarding reserve category, type and governance.

Minerals prospectivity

Professor Ross Large and Dr Andrew McNeil produced a report titled *Mineral Prospectivity Assessment Proposed Reserve Areas* summary of which follows.

The complete technical report is appended to this IVG final report.

Executive summary

The mineral potential of the 572,000 hectare reserve areas nominated by the Tasmanian Forests Intergovernmental Agreement was assessed in the context of the overall mineral potential of the State, taking into account all available geoscientific and mineral deposit data.

This assessment indicates that 45% of the nominated reserve area has low to moderate mineral potential, 22% has high mineral potential and 33% has very high mineral potential.

It is recommended that the 55% of high to very high mineral potential reserves be given a land tenure classification that enables mineral exploration and mining in the future.

The current mining operations and leases in Tasmania cover 0.8% of the total land surface of the state. It is anticipated that new discoveries in the high potential reserve areas are unlikely to add more than another 0.1% of surface area, making a total of less than 1.0% of Tasmania used for mining purposes.

Consultation with stakeholders

Engagement from stakeholders in the work of the IVG took up a substantial amount of the IVG's time. There was a high level of interest in both meeting the IVG and providing comment on its draft work plans and methodologies. The areas of the IVG's work of most interest to the Signatories Reference Group was the draft methodologies developed to implement the work plans, and in particular methodologies relating to the wood supply, economic and forest conservation work plans.

The Chair and members of the IVG and Technical Working Group met with a diverse range of stakeholders including many industry bodies, companies, unions, specialty timber groups, government agencies, beekeepers, and local groups.

The level of interest extended well beyond the Signatories Reference Group and the list of stakeholders listed in the IVG Terms of Reference. In particular there were many local groups who sought meetings and providing valuable material including reports, data, maps, and photographs.

Some of the material received was outside the scope of the IVGs Terms of Reference or were bound by confidentiality, and therefore didn't allow consideration. Examples include alternative reserve proposals, private land issues, and industry regulation or restructure matters.

Other work conducted under the Intergovernmental Agreement has also attracted interest including matters more appropriately addressed by governments such as community development, employment, land access, private land and the future of various industry sectors.

Data sources

Many sources of data were used in the projects outlined in the five work plans and technical reports.

Some of the data layers were obtained under strict conditions pertaining solely to the work of the IVG. Access to some of the IVG information and derived data layers would potentially involve the agreement of the data providers such as Forestry Tasmania, DPIPW, Forest Practices Authority and commercial and private suppliers.

Appendix 6 is provided as an example of the many layers of data that were utilized in the development of the Technical Reports. The example provides a summary of the many data inputs used in the conservation reports. The other Technical Reports similarly used many layers of data.

The accessing of data for the IVG was a slow process. Most government agencies were quite willing to assist the IVG, but in some instances, accessing data from government agencies in a timely manner has unfortunately delayed the IVG's work.

In regard to the ENGOS proposed reserves the IVG used an agreed boundary provided to it under agreement from the ENGOS. In terms of the ENGOS proposal for 572,000 ha of reserves the IVG decided to break the area into a series of 270 polygons each with a unique identifier. The size of each polygon varies considerably, and an indication of this can be seen in the table at Appendix 7 and map at Appendix 8

The data set of polygons were then used for the assessment work across the Technical Reports.

Some of the maps available online have been produced by the IVG to allow users to examine outputs at a higher resolution than possible in an A4 document.

These maps have been produced from data supplied by consultants and are therefore not in all cases identical reproductions of maps appearing in the conservation reports. The IVG has not changed data outputs as supplied. In some cases output data were not accessible. In these cases high resolution maps were not created.

The attribution of source data for the derived outputs has been shown.

All maps use projection MGA 55 GDA 94

Shape files for some of the products can be made available where copyright and confidentiality issues allow.

List of Appendixes

- Appendix 1** Tasmanian Forests Intergovernmental Agreement (TFIGA).
- Appendix 2** Independent Verification Group Terms of Reference.
- Appendix 3** Short resume on each IVG member.
- Appendix 4** Report of September 2011.
- Appendix 5** IVG Work plans
- Appendix 6** Example of the many layers of data that were utilized in the development of the Technical Reports
- Appendix 7** Polygons and their size for the ENGO 572,00ha proposed reserves
- Appendix 8** Map showing the polygons

IVG Response to general comments from the Intergovernmental Taskforce

The Independent Verification Group submitted a draft of its report on 29 February 2012 to the Intergovernmental Taskforce. A number of substantive comments and technical matters were constructively raised in response to the draft report.

A summary of the substantive comments and the IVG follows.

The Tasmanian Government has suggested that the IVG needs to assess which areas of the proposed ENGO reserves are of 'High Conservation Value' and the Federal Government has requested more information to assist prioritization of areas for reservation.

The IVG assessment has been undertaken in line with its Terms of Reference, which required the IVG to:

“In consultation with the Signatories, design and implement an independent and transparent verification process to assess and verify stakeholder claims relating to sustainable timber supply requirements (including at the regional level), available native forest and plantation volumes in both the short and longer term, and areas, conservation values and boundaries of reserves from within the ENGO-nominated 572,000 hectares (Clauses 20 and 28)”.

Further, the 5th Term of Reference states that the IVG will “Assess and provide advice about stakeholder claims relating to conservation values, areas and boundaries of potential reserves from within the ENGO-nominated 572,000 hectares of High Conservation Value native forest. (Clauses 20 and 28) “.

It appears that the term HCV was intended by ENGO's and the signatories to the 'Statement of Principles', to identify areas that they consider warrant formal reservation. The IGA defines 'High Conservation Value Forests' as “those forest areas identified as High Conservation Value by the Signatories to the Statement of Principles.” The Statement of Principles itself does not define HCV but it uses the word in several contexts that make it clear **it refers to specific conservation reserve proposals rather than a particular methodology or set of criteria.**

A full discussion of the approach taken by the IVG is contained in the revised Conservation Work Plan, which unfortunately was unable to be distributed with the earlier Conservation report.

Very briefly the term High Conservation Value (HCV) was proving confusing and not scientifically helpful for assessing ENGO claims. HCV is not a term used in any relevant government policy document or widely used in conservation science literature. HCV is a term that only has currency in some forest management contexts to identify areas in production forests that should not be logged.

The concept was not designed to help assess areas for formal reservation.

The conservation values claimed by ENGO's in support of reserving the proposed areas were assessed by the IVG to determine whether they exist and if they do, whether they warrant or are best protected through formal reservation.

When assessing the areas proposed for reservation the IVG needed to assess what conservation values they possess and whether any values identified through the verification process are consistent with principles and approaches commonly taken into account when considering areas for formal reservation in Australia today. The work plan has enabled the IVG to assess whether and the extent to

which the proposed ENGO reserves would, *inter alia*, add to CAR objectives, contribute to resilience in the face of climate change, contribute to the long term survival of healthy populations of species and/or contribute to the protection of World Heritage and National Heritage Values.

An important feature of the IVG approach has been to ensure the values are transparent and not hidden in a black box before stakeholders have a chance to see the results of the verification work and decide whether they would like further assistance from the IVG with prioritisation.

Moreover, overall conservation value is not dependent on ranking relative to other values. Conservation value is determined by applying criteria specific to the qualities or phenomenon of interest based on evidence and where possible measurable indicators.

It is also important to note that it is clear from the IVG verification process that ENGO's have developed their proposals based on protecting areas with relatively low levels of disturbance, achieving connectivity between existing reserves and/or improving the viability/integrity of existing reserves, including the Tasmanian Wilderness World Heritage Area. It is also clear that in terms of achieving these goals it appears that few alternative options exist given the very high level of disturbance and fragmentation outside the proposed ENGO reserves (see figure 15 in the summary report)

It is certainly the case that improvements in 'Comprehensiveness' and 'Representativeness' could be achieved in a number of different ways as relative disturbance, while still important for these values, is not as critical as it is for ensuring improvements in 'Adequacy' of the NRS.

It is also important to note that if reserve 'optimization' had been the goal of the IVG, the IVG assessments would need to have included private forests.

A spreadsheet will be available of every value found by the IVG to be present (or not present where no values were found) for each of the 270 ENGO polygons, which will assist governments and stakeholders with prioritisation and negotiation.

Inconsistencies between Reports 9A and 10 relating to impacts on biodiversity of off reserve management

The Tasmanian Government has expressed concern about the views expressed in report 9A relating to the impacts on biodiversity of current forest management.

Report 9A was prepared as part of a wide brief to examine the documentation provided by ENGO's to support their conservation claims; to examine gaps in ENGO material and scientific knowledge; and to examine the impacts on biodiversity of current approaches to off reserve management.

Report 10 was provided under agreement with the Forest Practices Authority to assist the work of the IVG.

As all the projects undertaken for the IVG were undertaken concurrently there was no time for the contractor preparing report 9A to see or comment on report 10.

There is no doubt the report has been amended to reflect this, that the Forest Practices Code plays an important role in ameliorating forestry impacts and helping to maintain forest biodiversity. Whether the code is sufficient for this purpose is, however a matter of current public debate.

The conclusions of report 10 that 'the effectiveness studies done are generally small-scale and targeted and do not consider the larger, cumulative and additive impact of forestry and other land-use activities at the landscape scale and that to assess the landscape-scale impact it is important to do

species trend monitoring...’ The FPA itself notes that none of the forestry management practices have been comprehensively assessed.

The IVG considers that report 9A is not an attack on the FPA (rather it compliments the integrity of many FPA officers) but rather questions the efficacy of current prescriptions and FPA authority vis a vis for instance, Forestry Tasmania. It is noted that the recommendations from the Review of the Biodiversity Provisions of the Forest Practices Code conducted in 2009 have yet to be implemented. Some of the recommendations from this review relate to many of the issues identified in report 9A, including inter-agency responsibilities and legislative frameworks, the need for landscape-scale approaches to biodiversity conservation to be adopted, the need to better protect hollow-bearing trees, etc. Critically the report notes that the current code “lacks any explicit statement about specific biodiversity objectives and outcomes” and are thus not helpful for planning and operational requirements. The panel recommended a suite of changes to the Forest Practices Code, which I understand are yet to be implemented by the Tasmanian government.

Perhaps of more concern is the evident intensification of logging and conversion which has occurred since the RFA was signed, which has no doubt contributed to the current challenges re wood supply and which has also compromised conservation options outside the ENGO proposed reserves.

A range of details comments have been largely incorporated into the IVG members technical reports.