



*Inquiry on the Progress with
Implementation of the Tasmanian
Regional Forest Agreement (1997)*

Background Report

April 2002

Resource Planning and Development Commission

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Foreword

The Resource Planning and Development Commission has received a direction under the *Public Land (Administration and Forests) Act 1991* to conduct an Inquiry and report on progress with the implementation of the Tasmanian Regional Forest Agreement (1997) (RFA).

In July 2001, the Commonwealth and Tasmanian Governments entered into a Scoping Agreement to conduct the five year review of progress with the implementation of the RFA. Both Governments recognised that effective community involvement was a vital part of the establishment of the RFA and consequently, it was considered appropriate that the Commission conduct this Inquiry. The Review of Progress with the implementation of the RFA is to be undertaken in a manner that:

- is open, transparent and equitable;
- provides appropriate opportunities for communication with and input from the community;
- is consistent with other forest reporting requirements; and
- is scientifically based and reliant on agreed data as required by the RFA.

The Commission inquiry process involves the publication of reports at various stages of the Inquiry. These reports include background information, proposed recommendations, developed following a review of public representations and hearings and final recommendations following further public representations and hearings.

In this instance, the background report has been developed from the two documents prepared in accordance with the Scoping Agreement, explicitly:

- the Report on Progress with Implementation of the Regional Forest Agreement 1997 – 2002; and
- the 2000 Report on Sustainability Indicators for Tasmanian Forests (in accordance with the provisions of clause 91 of the RFA) 1996 – 2001.

This is appropriate given that the Terms of Reference requires that they be taken into account.

In addition the Background Report includes a summary of the first 5 years of the Tasmanian RFA.

It should be noted that this Inquiry by the Commission is not to be considered an opportunity to revisit the provisions of the RFA, but is more in the nature of an audit into its implementation to date.



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Tasmanian Regional Forest Agreement

THIS AGREEMENT is made on the 8th day of November 1997

BETWEEN

THE STATE OF TASMANIA, ("the State"); and

THE COMMONWEALTH OF AUSTRALIA ("the Commonwealth").

Recitals

WHEREAS:

- A. The State and the Commonwealth have agreed to establish a framework for the management and use of Tasmanian forests which seeks to implement effective conservation, forest management, forest industry practices and in particular:
- provide certainty for conservation of environment and heritage values through the establishment of a CAR Reserve System; and
 - provide for the ecologically sustainable management and use of forests in Tasmania; and
 - provide for future growth and development of Tasmanian Industries associated with forests and timber products; and
 - assist with the development of forest-based tourism and recreational opportunities based on Tasmania's environmental advantages; and
 - provide for certainty of resource access to the forest industry; and
 - provide for certainty of resource access to the mining industry; and
 - remove relevant controls in relation to application of the *Export Controls Act 1982* (Cwth); and
 - introduce a range of new or enhanced initiatives to assist with forest based development; and
 - encourage the development of forest based research; and
 - encourage significant employment opportunities and investment throughout Tasmania.
- B. To this end, the State and the Commonwealth have entered into this Regional Forest Agreement, as that expression is defined in the *Export Control (Hardwood Wood Chips) (1996) Regulations* (Cwth), in relation to the Tasmania Region, being the whole of the State of Tasmania.
- C. This Agreement has been made having regard to studies and projects carried out in relation to all of the following matters relevant to the Tasmania Region -
- (a) environmental values, including old growth, wilderness, endangered species, national estate values and world heritage values;
 - (b) indigenous heritage values;
 - (c) economic values of forested areas and forest industries;
 - (d) social values (including community needs);
 - (e) principles of ecologically sustainable management.



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- D. This Agreement is divided into Parts. Part 1 applies to the whole Agreement. Part 2 is not intended to create legally binding relations. Part 3 is intended to create legally binding relations. The Attachments are not intended to create legally binding relations except to the extent that this is necessary to give effect to Part 3.

NOW IT IS AGREED as follows:

PART 1

Interpretation

1. This Agreement is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3.

Definitions and General Provisions

2. In this Agreement unless the contrary intention appears:

“Agreement” means all parts of this Agreement between the Commonwealth and the State and includes the Attachments to this Agreement;

“ANZECC” means the Australian and New Zealand Environment and Conservation Council;

“Biodiversity” means biodiversity as defined in the JANIS Report;

“CAR Reserve System” means areas under any of the following categories of land tenure – Formal Reserves including Dedicated Reserves, Informal Reserves and other areas on Public Land which have CAR values protected by prescription, and parts of the Private Forest Estate where the CAR values are protected under secure management arrangement by agreement with private landholders. This reserve system is based on the principles of comprehensiveness, adequacy and representativeness, as described in the JANIS Report;

“CAR Values” means the conservation values as described by the JANIS Reserve Criteria embodied in the CAR Reserve System;

“Commission” means the Australian Heritage Commission established by the *Australian Heritage Commission Act 1975* (Cwth);

“Commonwealth/Tasmanian Joint Study of National Estate in Tasmania” means the report published as: Tasmania-Commonwealth Regional Forest Agreement-National Estate report, Background Report Part H, Tasmanian Public Land Use Commission, February 1997;

“Competition Principles” means principles as described in the Compendium of National Competition Policy Agreements, January 1997, National Competition Council;

“Condition and Description Statements” means statements approved by the Commission regarding the condition and description of a place forming part of the National Estate;

“CRA” means the Comprehensive Regional Assessment process carried out by the Commonwealth and the State pursuant to Attachment 1 of the RFA Scoping Agreement;



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“Dedicated Reserve” means a Formal Reserve equivalent to IUCN Protected Area Management Categories I, II, III, or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994). In Tasmania, Dedicated Reserves comprise the following reserves as described in Attachment 7: national parks, state reserves, game reserves, nature reserves, historic sites and forest reserves not subject to the *Minerals Resources Development Act 1995* (Tas.);

“Deferred Forest Land” means land specified in the Register of Deferred Forest Land;

“DELM” means the Tasmanian Department of Environment and Land Management;

“Earth” means any rock, stone, quartz, clay, sand and gravel and the alluvial or residual of any rock, stone, quartz, clay, sand, soil and gravel;

“Ecologically Sustainable Forest Management” or **“ESFM”** means forest management and use in accordance with the specific objectives and policies for ecologically sustainable development as detailed in the NFPS;

“Endangered Forest Community” means a community listed as endangered in the Tasmania-Commonwealth Regional Forest Agreement Environment & Heritage Report Vol. I, Table 2.8, Background Report Part C, Tasmanian Public Land Use Commission, Nov. 1996, as amended from time to time in accordance with this Agreement;

“Environment and Heritage Values” means values assessed pursuant to Attachment 1 of the RFA Scoping Agreement;

“Forest” or **“forest”** means an area of land carrying a Forest Community, or a plantation of one or more tree species established for timber production;

“Forest Botany Manual” means a manual publishing information and management prescriptions relevant to flora conservation for a nature conservation region in Tasmania, to meet the requirements of the *Forest Practices Code*;

“Forest Community” means any of the 50 forest communities identified in Attachment 6 of this Agreement.

“Forest Estate” means all Forest growing on Public Land or Private Land;

“Forest Management Planning Process” means the statutory process under the *Forestry Act 1920* (Tas.) for the preparation of forest management plans;

“Forest Management Plans” means the forest management plans prepared pursuant to the *Forestry Act 1920* (Tas.);

“Forest Management Systems” means the State’s suite of legislation, policies, codes, plans and management practices as described in the Tasmania-Commonwealth Regional Forest Agreement Background Report Part E: Assessment of Ecologically Sustainable Forest Management Systems and Processes: Independent Expert Advisory Group – Preliminary Report published by the Tasmanian Public Land Use Commission November 1996;

“Forest Practices System” means the system established pursuant to the objective set out in Schedule 7 to the *Forest Practices Act 1985* (Tas.);

“Forest Products” means all live and dead trees, ferns or shrubs or parts thereof;



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“Forestry Operations” means –

- (a) the planting of trees; or
- (b) the managing of trees before they are harvested; or
- (c) the harvesting of Forest Products

for commercial purposes and includes any related land clearing, land preparation and burning-off, and transport operations;

“Formal Reserve” means a reserve equivalent to IUCN Protected Area Management Categories I, II, III, IV, or VI as defined by the IUCN Commission for National Parks and Protected Areas (1994). The status of Formal Reserves is secure, requiring action by the Tasmanian Parliament for dedication or revocation. Formal Reserves in Tasmania, comprise Dedicated Reserves, and the following reserves as described in Attachment 7: managed natural areas/regional reserves, conservation areas, nature recreation areas and forest reserves subject to the *Mineral Resources Development Act 1995* (Tas.);

“FPB” means the Tasmanian Forest Practices Board;

“High Quality Wilderness” means an area larger than 8000 hectares having National Wilderness Inventory (NWI) ratings 12 or larger, estimated by the methodology used in the NWI (Leslie and Maslen 1995);

“Informal Reserve” means a reserve other than a Forest Reserve as described in Attachment 7 on State Forest comprising an area identified as a Protection Zone under the Management Decision Classification System or other administrative reserve on Public Land which is managed to protect CAR values;

“Integrated Catchment Management” means a coordinated and integrated approach to management planning using catchments as the basic planning area;

“Intensive Forest Management” means the establishment of plantation forest or the thinning of regrowth forest;

“IBRA Region” means one of the eight IBRA regions within Tasmania described in the report titled Interim Biogeographic Regionalisation for Australia (1995);

“IUCN” means the International Union for the Conservation of Nature and Natural Resources;

“ISO 14000 Series” means AS/NZS ISO 14000 series, Environmental Management Systems, Standards Australia, 1996;

“JANIS Report” means the report published by the Joint ANZECC/MCFFA National Forests Policy Statement Implementation Sub-committee in June 1997 titled ‘Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia’;

“JANIS Reserve Criteria” means the criteria as described in the JANIS report which provide guidelines for the reservation of biodiversity, old growth forest and wilderness, taking account of reserve design and management and social and economic considerations;

“Listing Statement” means a listing statement made under s.22 of the *Threatened Species Protection Act 1995* (Tas.);



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“Management Decision Classification System” means a map-based zoning system used by Forestry Tasmania for the classification of State Forest and which is described in the Tasmanian-Commonwealth Regional Forest Agreement Background report Part E: Assessment of Ecologically Sustainable Forest Management Systems and Processes: Independent Expert Advisory Group – Preliminary Report published by the Tasmanian Public Land Use Commission, November 1996;

“Management Prescriptions Database” means the database described in the Tasmanian-Commonwealth Regional Forest Agreement Supplement to Environment & Heritage Report Vol VI: Processes and guidelines for determining the conservation requirements for priority flora and fauna species in the Tasmanian comprehensive regional assessment, Tasmanian Public Land Use Commission, April 1997;

“Mineral” means any metallic mineral, non-metallic mineral, industrial mineral, inorganic substance, coal, gas, oil, geothermal substance, atomic substances and matter forming part of the crust of the earth, other than

- (a) the subsoil;
- (b) the layer of soil sustaining vegetation;
- (c) rock, crushed stone, gravel, sand or clay produced on private land for the private use of the owner;
- (d) mineral water;

“Mining” means any operation or work carried out to obtain Minerals;

“Mining Operations” means

- (a) any operations or work of a commercial nature carried out on a mining lease with a view to obtaining or treating Minerals ; or
- (b) where a valid exploration or retention licence is held, any operations or work in the area covered by that licence for the purpose of exploring for Minerals or evaluating the potential for Mining;

“Mining Product” means any Mineral or Earth obtained by Mining;

“MCFFA” means the Ministerial Council on Forestry, Fisheries and Aquaculture;

“Montreal Process Implementation Group” means the Montreal Process Implementation Group established by the Commonwealth and all State and Territory Governments;

“National Estate” means those places as defined under s.4 of the *Australian Heritage Commission Act 1975* (Cwth);

“National Estate Values” means values attributed by the Australian Heritage Commission to the National Estate;

“NFPS” means the National Forest Policy Statement 1992 endorsed by the Commonwealth and all State and Territory Governments;

“National Greenhouse Response Strategy” means the national strategy endorsed by the Commonwealth and all State and Territory Governments in 1992;

“National Recovery Plan” means a recovery plan made under Part 3 of the *Endangered Species Protection Act 1992* (Cwth);



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“National Reserve System” means the reserve system as outlined in the National Strategy for Conservation of Australia’s Biological Diversity;

“Native Forest” or **“Native Forest Estate”** means an area carrying a Forest Community;

“Old Growth forest” means old growth forest as defined in the JANIS Report;

“Parties” means the State of Tasmania and the Commonwealth of Australia;

“Party” means a Party to this Agreement;

“Priority Species” means those Tasmanian forest associated species listed in the schedule of the *Endangered Species Protection Act 1992* (Cwth) or the *Threatened Species Protection Act 1995* (Tas.) or in Attachment 2 of this Agreement;

“Private Forest Estate” means all Forest growing on Private Land;

“PFT” means Private Forests Tasmania;

“Private Land” means all lands in Tasmania, other than Public Land and land owned or leased by the Commonwealth;

“Public Forest Estate” means all Forest growing on Public Land;

“Public Land” means land as defined in Section 4 of the *Public Land (Administration and Forests) Act 1991* (Tas.) and land owned or leased by the Commonwealth which is identified in Attachment 6 of this Agreement;

“Recovery Plan” means a recovery plan made under section 25 of the *Threatened Species Protection Act 1995* (Tas.) or a recovery plan made under Part 3 of the *Endangered Species Protection Act 1992* (Cwth);

“Regional Forest Agreement” means a Regional Forest Agreement within the meaning of the Export Control (Hardwood Wood Chips) (1996) Regulations (Cwth);

“Register of Deferred Forest Lands” means the register maintained by Forestry Tasmania in accordance with section 17A of the *Forestry Act 1920* (Tas.);

“Register of Multiple Use Forest Land” means the register maintained by Forestry Tasmania in accordance with section 17 of the *Forestry Act 1920* (Tas.);

“Register of the National Estate” means the register of the same name kept pursuant to the *Australian Heritage Commission Act 1975* (Cwth);

“Response to Disturbance Database” means the database maintained by the DELM recording life history and response to disturbance attributes for flora and fauna species;

“RFA Forests – Employment and Industries Development Strategy” means the Strategy of the same name specified in Attachment 12;

“RFA Scoping Agreement” means the Scoping Agreement for a Tasmanian Regional Forest Agreement between the Commonwealth of Australia and the State of Tasmania signed on 16 January 1996;

“State Forest” means land described in Section 4B(1) of the *Forestry Act 1920* (Tas.);

“State Recovery Plan” means a recovery plan made under section 25 of the *Threatened Species Protection Act 1995* (Tas.);



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“Statement of Significance” means a statement of significance approved of by the Commission for a place which forms part of the National Estate;

“Sustainability Indicators” means qualitative or quantitative measures, at the regional (sub-national) level developed to assess the criteria for sustainable forest management;

“Tasmania Region” means the whole of the State of Tasmania;

“TFFIC” means the Tasmanian Forests and Forest Industry Council;

“TFFIS” means the Tasmanian Forests and Forest Industry Strategy (Sept. 1990);

“Tasmanian State of the Forest Report” means the report provided to the Tasmanian Minister for Forests as required by Section 59D of the *Forestry Act 1920* (Tas.);

“Threat Abatement Plan” means a threat abatement plan made under Part 3 of the *Endangered Species Protection Act 1992* (Cwth);

“Threatened Fauna Manual” means a manual publishing map based information on known localities and potential habitat which may contain fauna listed under the *Threatened Species Protection Act 1995* (Tas.), produced to meet the requirements of the Forest Practices Code;

“Threatened Species Database” means the database maintained by the DELM recording known locations on all land tenures, conservation status and management prescriptions for species listed under the *Threatened Species Protection Act 1995* (Tas.);

“Warra Case Study” means the case study of the Warra Long Term Ecological Research site established and conducted by Forestry Tasmania;

“Wild Rivers” means a river of natural origin, in which the biological, hydrological and geomorphological processes of river flow, and intimately linked parts of its catchment, have not been significantly altered by modern or colonial society. Wild rivers may include permanent, seasonal or underground water courses. Wild rivers in Tasmania have been agreed as part of the national Wild Rivers project;

“World Heritage Report” means the Tasmania-Commonwealth Regional Forest Agreement Background Report Part I: World Heritage Report: Record of the Tasmanian World Heritage Expert Panel meeting and a Preliminary analysis of the forest and mineral resources in areas identified by the panel (June 1997) and published by the Tasmanian Public Land Use Commission in conjunction with the Commonwealth Forests Taskforce;

“World Heritage Committee” means the UNESCO World Heritage Committee;

“World Heritage Nomination” means the submission by the Commonwealth of a nominated area to the World Heritage Committee for assessment as a World Heritage area.

3. In this Agreement unless the contrary intention appears:
 - (a) a reference to a clause or Attachment is a reference to a clause or Attachment to this Agreement and a reference to this Agreement includes a reference to an Attachment;
 - (b) a reference to this Agreement or another instrument is a reference to this Agreement or that other instrument as amended or varied from time to time;
 - (c) a reference to a statute or ordinance includes any consolidations, amendments, re-enactments or replacements thereof and also includes regulations and other instruments made under them;



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- (d) a reference to a code or other instrument includes any consolidations or amendments thereof;
- (e) a word importing the singular includes the plural and vice versa a word importing a gender includes each other gender and a reference to a person includes an individual, firm, body corporate, association (whether incorporated or not), government, governmental or semi-governmental body, local authority or agency;
- (f) a reference to an act, matter or thing includes the whole or any part of that act, matter or thing and a reference to a group of acts, matters, things or persons includes each act, matter, thing or person in that group;
- (g) where any terms and conditions are added to an Attachment of this Agreement it is agreed that those terms and conditions will form part of this Agreement;
- (h) headings are inserted for convenience and do not affect the interpretation of this Agreement.

Regional Forest Agreement

- 4. This is a Regional Forest Agreement which applies to the Tasmania Region.
- 5. The Agreement is for the purpose of providing long-term stability of forests and forest industries.
- 6. The Parties note that export controls on wood sourced from plantations in Tasmania have been removed. The Commonwealth confirms that by the Parties entering this Agreement the export of hardwood woodchips or other unprocessed wood sourced in Tasmania will not be subject to any export controls.

Duration and Extension of Agreement

- 7. This Agreement will commence on the date of its execution, and subject to its terms remain in force for twenty years.
- 8. The process for extending the duration of this Agreement will be agreed by the Parties as part of the third 5 yearly review specified in clause 45.

Cooperation and Response to Requests

- 9. The Parties agree to work cooperatively to address any matters raised in writing by either of them relating to the interpretation or implementation of this Agreement and undertake to respond to any request within 45 days of its receipt.

Dispute Resolution

- 10. The Parties agree that if a dispute arises between the Parties it must be resolved expeditiously in accordance with the provisions of this clauses 11 to 15.
- 11. When a dispute arises, a Party may serve a notice on the other specifying:
 - (a) the nature and substance of the matter or issue in dispute;
 - (b) that it is a dispute to be resolved in accordance with this clauses 11 to 15.
- 12. Within 7 days of the notice under clause 11 being served the Parties must attempt to settle the dispute and, in default of settlement, appoint a mediator to conduct a mediation concerning the matter or issue in dispute.



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13. If the dispute is not settled under clause 12 and the Parties fail to appoint a mediator, either of them may request the President of the Law Council of Australia, or the equivalent officer of such body as in future may have the functions of the Law Council of Australia, to nominate a mediator to conduct the mediation.
14. The costs of a mediator appointed under this clauses 12 or 13 are to be shared equally between the Parties.
15. Each of the Parties agrees to use its best endeavours to resolve the dispute through mediation.

Notices

16. Any notice or other communication to be given or made pursuant to this Agreement shall be in writing and addressed as the case may be as follows:

THE STATE

The Secretary
Department of Premier and Cabinet
Level 7, 15 Murray Street
HOBART TAS 7000

Facsimile Number (03) 62232243

THE COMMONWEALTH

The Secretary
Department of the Prime Minister and Cabinet
3-5 National Circuit
BARTON ACT 2600

Facsimile Number (02) 62715414

17. Any notice or other communication shall be deemed to have been duly served:
 - in the case of hand delivery, when delivered;
 - if sent by prepaid post, on the third ordinary business day after the date of posting;
 - if sent by facsimile transmission and provided that the sending facsimile machine produces a printout of the time, date and uninterrupted transmission record of the sending of the notice, upon completion of the transmission, if such completion is within ordinary business hours in the place where the recipient's facsimile machine is located, but, if not, then at 9:00 am on the next ordinary business day in such place
 - if any other mode of service is agreed in writing between the Parties, when that agreement specifies.

PART 2

18. This Part is not intended to create legally binding relations and provisions in Part 1 in so far as they relate to Part 2 are also not binding.

Basis of Agreement – National Forest Policy Statement (NFPS)

19. The Parties confirm their commitment to fulfilling the goals, objectives and implementation of the NFPS by:
 - developing and implementing ecologically sustainable forest management and use; and
 - establishing a CAR Reserve System; and



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- facilitating the development of an internationally competitive wood production and wood products industry; and
 - promoting the conservation and management of the Private Forest Estate.
20. The Commonwealth accepts the principles of the TFFIS except to the extent that they are inconsistent with this Agreement or the NFPS.

Relationship to Previous Forest Agreements

21. This Agreement replaces the following intergovernmental forest agreements and understandings:
- the Interim Forest Agreement for Tasmania (1996); and
 - the Statement of Intent (1995); and
 - the Heads of Agreement (1988); and
 - the Memorandum of Understanding (1986).

Introduction of Legislation

22. The Commonwealth undertakes to use its best endeavours to secure the enactment of legislation which includes provisions to the effect that where a Regional Forest Agreement is in force:
- (a) no controls may be imposed under the *Export Control Act 1982* (Cwth), or under any legislation enacted by the Commonwealth Parliament for a similar purpose, upon the export from the region in respect of which the Agreement was made of woodchips or unprocessed wood; and
 - (b) the following Commonwealth legislative provisions do not apply to Forestry Operations on land which under the Agreement may be used for such operations
 - (i) the *Australian Heritage Commission Act 1975*, s.30;
 - (ii) the *Environment Protection (Impact of Proposals) Act 1974*, s.11;
 - (iii) the Administrative Procedures approved under s.6 of the *Environment Protection (Impact of Proposals) Act 1974*;
 - (iv) the *World Heritage Properties Conservation Act 1983*, s.6;
 - [(v) Tas considering]
 - (c) the Commonwealth may only terminate that Regional Forest Agreement:
 - (i) by consent; or
 - (ii) on the ground of a fundamental breach by the State of the spirit of the Agreement, by 30 days' notice in writing following the full observance by the Commonwealth of the dispute resolution procedures for which the Agreement provides; or
 - (iii) by 90 days notice in writing on the ground that circumstances have arisen which, under the Agreement, otherwise entitle the Commonwealth to terminate the agreement unless the State has rectified the situation prior to the end of the 90 day period.



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23. The Commonwealth undertakes to:

- (a) prepare a policy outline of such legislation, and circulate that outline to all States which have regions covered by the Export Control (Hardwood Wood Chips) (1996) Regulations (Cwth), by 31 December 1997; and
- (b) thereupon consult with the State and such other States in relation to the legislation; and
- (c) introduce such legislation into the Parliament of the Commonwealth by 30 June 1998.

Action to Establish and Manage Reserves

24. The State undertakes to

- (a) manage the areas in the CAR Reserve System identified in Attachment 6, with the exception of Commonwealth owned or leased land, on the basis outlined in that Attachment and in accordance with the relevant objectives set out in Attachment 7; and
- (b) where any new reserves are to be of a category specified in Attachment 7 which category is provided for in existing legislation, proclaim such new reserves by 31 December 1998; and
- (c) by 31 December 1998 introduce legislation into the Tasmanian Parliament to establish those categories of the revised public land classification system specified in Attachment 7 which are not already provided for by existing legislation; and use its best endeavours to secure the enactment of the legislation introduced; and,
- (d) within 3 months after the commencement of the legislation referred to in sub-clause (c) above, where any new reserves are to be included in a category specified in Attachment 7 which is not already provided for by existing legislation, proclaim such new reserves.

National Estate

- 25. The Commonwealth confirms that it has fulfilled its duties in relation to this Agreement under s.30 of the *Australian Heritage Commission Act 1975* (Cwth) in so far as they were to be performed prior to the date of the commencement of this Agreement.
- 26. The Parties agree to the management of National Estate Values as set out in Attachment 1.
- 27. The Commonwealth confirms it has on or before the date of this Agreement entered into an agreement with the Australian Heritage Commission in which the Commission has agreed to perform and comply with all the agreements and confirmations which are specified in Attachment 1 as being agreements and confirmations on the part of the Commission.

Environment Impact Assessment

28. The Commonwealth confirms:

- that it has fulfilled its duties in relation to this Agreement for assessment of environmental impacts under the *Environment Protection (Impact of Proposals) Act 1974* (Cwth) in so far as they were to be performed prior to the date of the commencement of this Agreement; and
- that subject to clause 433 activities covered by this Agreement will not require any further assessment or approval under the *Environment Protection (Impact of Proposals) Act 1974* (Cwth).



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29. The State confirms that it has fulfilled its duties in relation to this Agreement for assessment of environmental impacts under the *Environmental Management and Pollution Control Act 1994* (Tas.) in so far as they were to be performed prior to the date of the commencement of this Agreement.

Threatened Species and Communities

30. The Commonwealth confirms that it has fulfilled its duties in relation to this Agreement under the *Endangered Species Protection Act 1992* (Cwth) in so far as they were to be performed prior to the date of the commencement of this Agreement.
31. The State confirms that it has fulfilled its duties in relation to this Agreement under the *Threatened Species Protection Act 1995* (Tas.) in so far as they were to be performed prior to the date of the commencement of this Agreement.
32. Where threatened species are listed under the *Threatened Species Protection Act 1995* (Tas.) and the *Endangered Species Protection Act 1992* (Cwth) any new or revised Recovery Plans will be jointly prepared and funded and implemented cooperatively by the Parties to meet the requirements of both Acts.
33. The Parties will seek to improve outcomes of Recovery Plans for species listed under either the *Threatened Species Protection Act 1995* (Tas.) or the *Endangered Species Protection Act 1992* (Cwth) by developing multiple species Recovery Plans where appropriate.
34. Where threatened Forest Communities restricted to Tasmania are listed under the *Endangered Species Protection Act 1992* (Cwth), any new National Recovery Plans will be prepared jointly by the Parties. The Commonwealth will also continue to consult with the State on the preparation of Threat Abatement Plans for relevant key threatening processes.
35. Where a State Recovery Plan for a nationally listed species restricted to Tasmania meets the requirements of the *Endangered Species Protection Act 1992* (Cwth) the Commonwealth intends to adopt the State Recovery Plan under section 46 of that Act.
36. Where threatened species, threatened Forest Communities or threatening processes extend beyond Tasmania, the Parties agree where possible to jointly prepare with other relevant governments:
- National Recovery Plans for species or forest communities; and
 - Threat Abatement Plans for threatening processes listed under the *Endangered Species Protection Act 1992* (Cwth).
- and where available, the Commonwealth intends to incorporate any relevant State Recovery Plan or threat abatement plan prepared pursuant to the *Threatened Species Protection Act 1995* (Tas.) as the Tasmanian component of the National Recovery Plan.
37. The Parties, recognising that priorities can change in the light of new information, will continue to consult on the priorities for:
- listing threatened species, Forest Communities, and threatening processes; and
 - the preparation of all Recovery Plans and Threat Abatement Plans relevant to this Agreement;



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38. The Parties agree that Attachment 2 identifies the status of recovery action for threatened species relevant to this Agreement and which are listed under the *Endangered Species Protection Act 1992* (Cwth) or the *Threatened Species Protection Act 1995* (Tas.).

World Heritage

39. The Parties agree to jointly participate in the further World Heritage assessment of the relevant Australia-wide themes, specified in Table 1.7 of the World Heritage Report, commencing by the 30th June 1998.
40. The Commonwealth agrees that it will give full consideration to the potential social and economic consequences of any World Heritage Nomination of places in Tasmania and that any such nomination will only occur after the fullest consultation and with agreement of the State.
41. The Parties agree that any World Heritage Nominations of any part of the Forest Estate will be from areas within the Dedicated Reserve elements of the CAR Reserve System.
42. The Parties agree:
- that before any World Heritage Nomination of any part of the Forest Estate is made all necessary management arrangements, including joint policy coordination arrangements and a statutory management plan under the relevant Tasmanian legislation will be in place; and
 - that prior to any World Heritage Nomination all related funding issues will be resolved to the satisfaction of both Parties.

Other legislation

43. The Parties acknowledge that in some limited circumstances not related to the substance of this Agreement, including foreign investment approvals and export controls for non-forest products or infrastructure development, Commonwealth legislative provisions may also apply.

Monitoring this Agreement

44. This Agreement establishes milestones for the completion of agreed undertakings. These milestones are specified in Attachment 3 and the Parties agree to provide each other annually for the first five years and then as they fall due and as part of the 5 yearly reviews described in clause 4536 with written reports detailing the achievement of these milestones using an appropriate reporting mechanism.

Five yearly review

45. A review of the performance of this Agreement is to be undertaken during the last year of each five year period to assess the progress of the Agreement against its specified milestones and commitments:

The review is to be conducted:

- (i) by a person or body jointly appointed by the Parties; and
- (ii) in accordance with agreed priorities, procedures and funding arrangements which are to be agreed no later than six months before the end of each five year period of this Agreement.



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The review will also:

- (iii) invite and take account of public comments; and
 - (iv) use and take account of the Sustainability Indicators including trends; and
 - (v) be sufficient to satisfy the requirements for a State of the Forests Report as required by Section 59D of the *Forestry Act 1920* (Tas.); and
 - (vi) be completed within three months of its commencement; and
 - (vii) develop a report detailing the review process and its findings.
46. The report prepared for the Review process described above will be published and made publicly available within three months of it having been received by both Parties.
47. The purpose of the review process under this Agreement is not to renegotiate the Agreement.

The Comprehensive, Adequate and Representative (CAR) Reserve System

48. The Parties agree that the CAR Reserve System is to be established for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria and the land required to achieve this specified in Attachments 6 and 8.
49. The Parties agree that the CAR Reserve System established in accordance with this Agreement, will comprise:
- On Public Land as described in Attachment 6:
- Dedicated Reserves and other Formal Reserves; and
 - Informal Reserves; and
 - areas with CAR values protected by prescription; and
- On Private Land as described in Attachment 8:
- lands with CAR values protected under secure management arrangement by agreement with private landholders.
50. The Parties agree that the CAR Reserve System as established in accordance with this Agreement:
- meets the JANIS Reserve Criteria as defined in clause 2; and
 - sufficiently protects identified CAR values with adequate buffers within the CAR reserve boundaries; and
 - provides adequate protection for Wild Rivers and meets all the requirements for the proposed National Reserve System in respect of Forest Communities.

Public Land

51. The Parties agree that they will each take appropriate action:
- to establish the CAR Reserve System on the Public Land described in Attachment 6 and, where appropriate, shown on Map 1; and
 - to manage that system to maintain the CAR Values of that land in a regional context consistent with the management objectives for each element of the reserve system as specified in Attachment 7.



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52. The State agrees that it will consult with the Commonwealth prior to rejecting any recommendations made by the Tasmanian Public Land Use Commission in regard to the tenure to be applied those areas listed at sections 1.7 and 1.8 of Attachment 6.
53. The Parties intend that all Deferred Forest Lands not included in the formal CAR Reserve System, other than those specified in Attachment 6, will be removed from the Register of Deferred Forest Land and added to the Register of Multiple Use Forest Land.
54. The Parties recognise that the Savage River pipelines corridor area would contribute significantly to the conservation reserve system, but that it has important socio-economic and resource values particularly for the high value deep red myrtle furniture and craft industries and for minerals. The Commonwealth has requested and the State has agreed to postpone any harvesting in the Savage River Pipeline corridor. Accordingly the Parties agree:
- to postpone any harvesting and associated forest roading in the area as shown on Map 1; and defer a decision on the tenure allocation of the above land as specified in Attachment 6 and shown on Map 1,;
 - to add this area to, or maintain it on the Register of Deferred Forest Lands;
 - that this area will continue to be included in the calculation of sustainable yield of special species timber until a final decision on its allocation is made; and,
 - that uses other than timber production will continue to be managed in accordance with clause 78 of the Agreement consistent with the area's status as unallocated Crown land.
55. The Parties agree that:
- a) during the first 4 years of this Agreement, the State will review its resource estimates for deep red myrtle available for supply to the furniture and craft industries, in terms of volume, quality and economic accessibility, and will publish a report of the findings; and
 - b) the State will arrange for the review described at (a) above to be independently audited by an auditor agreed by the Parties, and for a report by that auditor to be published;
 - c) the further management/disposition of the Savage River Pipeline corridor will be considered by the State prior to the first five yearly review of this Agreement, in the light of the report and audit described at sub-clauses (a) and (b) above; and
 - d) if the resource review and audit confirm the availability, outside the Savage River Pipeline corridor area, of adequate resource of acceptable quality and economic accessibility, to maintain a minimum supply of at least 4,5000 cubic metres per year of deep red myrtle, for the remainder of the term of the Agreement, then harvesting and associated forest roading within the area will remain on the Register of Deferred Forest Lands, be further postponed for that period; and
 - e) in the alternative, the area will be further considered by the State to ensure the availability of deep red myrtle that volume for the period.
56. The Commonwealth agrees that the Commonwealth owned or leased land specified in Attachment 6 will form part of the CAR Reserve System as Informal Reserves. The Commonwealth further agrees that those areas of the Buckland Military Training Area leased by



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the Commonwealth from the State and not required for the CAR Reserve System will remain available to the State for timber production purposes, including plantation development.

57. The Parties agree that any changes to those elements of the CAR Reserve System in Informal Reserves:

- will only occur in accordance with this Agreement; and
- will maintain the level of protection of identified values at the regional scale; and
- that information on all such changes will be publicly available and provided to the person or body conducting the 5 yearly review described in clause 45 for incorporation into the review process.

Private Land

58. The Parties reaffirm their commitments made in the NFPS to the conservation and management of the Private Forest Estate and in particular the State reaffirms its commitments:

- to continue to ensure that owners of Private Forest comply with the Forest Practices Code (Tas.) for timber harvesting and regeneration operations; and
- to continue to develop adequate mechanisms to protect State and regional nature conservation and catchment values on Private Land; and
- to undertake the initiatives specified in Attachments 9, 10 and 11, which are relevant to Private Land.

59. The Parties recognise the importance to the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to implement a process which will facilitate the voluntary participation by private landowners to protect those values specified in Attachment 8.

Maintaining a permanent forest estate

60. The State agrees to adopt the broad policy framework specified in Attachment 9 which is designed to maintain an extensive and permanent Native Forest Estate and to maintain the sustainability of the total Forest Estate.

61. The Parties agree that the policy framework referred to in clause 60, together with the CAR Reserve System and other improvements in the Forest Management Systems as part of this Agreement, meet the requirements of the NFPS for the protection of regional conservation values and catchment management objectives.

Ecologically Sustainable Forest Management (ESFM)

62. The Parties agree that ESFM is an objective which requires a long term commitment to continuous improvement and that the key elements for achieving it are:

- the establishment of the CAR Reserve System;
- the development of internationally competitive forest products industries which are economically sustainable and provide for social and economic benefit; and
- the establishment of fully integrated and strategic forest management systems capable of responding to new information.



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63. The State confirms its commitment to the ongoing development, implementation and achievement of ESFM on both Public Land and Private Land through the development and implementation of its Forest Management Systems.
64. The State agrees that in providing for ESFM, its Forest Management Systems will be amended to reflect the undertakings of this Agreement and in particular those undertakings specified in Attachment 10.

Accreditation

65. The Commonwealth accredits as providing for ESFM Tasmania's current approach to its Forest Management Systems, as amended by this Agreement, including:
 - improvements specified in Attachment 10; and
 - the public reporting and consultative mechanisms specified in Attachment 11.
66. The Commonwealth accredits the process described in the "Review of Forestry Tasmania's Sustainable Yield Methodology for its Native Forest Resource" (Turner and Brack, Department of Forestry, Australian National University, April 1996) and being used by Forestry Tasmania for determining high quality eucalypt sawlog and veneer log sustainable yield for Public Land in Tasmania.
67. The State confirms that the sustainable yield for the Public Forest Estate will continue to be based on areas available for timber harvesting outside the CAR Reserve System.

Protection of priority species

68. The State agrees to protect the Priority Species listed in Attachment 2 (Part A) through the CAR Reserve System or by applying relevant management prescriptions.
69. Prior to the first 5 yearly review, the State will, where practical, assess those species in Attachment 2 (Part B) and determine management requirements in accordance with clause 9691A below.
70. The Parties agree that management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans will be implemented as a matter of priority.
71. The Parties recognise that Priority Species may change and that new or altered management prescriptions may be needed during the term of this Agreement to take account of changes in the status of species, additional information and evolving forest management practices. Alterations in prescriptions will be in accordance with processes described in clause 96.

Consultative Mechanisms

72. The Parties recognise that they already have in place a range of processes and instruments which provide for public participation and consultation. The public reporting activities and consultation opportunities provided through these processes are outlined in Attachment 11 and it is agreed that these will continue through the term of this Agreement.
73. The State further agrees that it will also implement the range of reporting and consultative mechanisms specified in Attachment 11.



Employment and Industry Development

74. In recognition of the unique contribution of forest-based industries to the Tasmanian economy, the Parties intend that this Agreement will have the effect of enhancing the future growth and development of Tasmania's industries associated with forests and timber products by the implementation of the RFA Forests – Employment and Industries Development Strategy. The Parties agree to cooperate in implementing the specified actions in that Strategy as described in Attachment 12. In particular, future growth and development will be achieved through:

- certainty of resource access to the forest industry; and
- removal by the Commonwealth of the need for export licences for unprocessed wood and woodchips sourced from Native Forests in Tasmania; and
- active encouragement of the development of downstream processing in Tasmania such that the preferred market for growers is within the State; and,
- a range of new or enhanced initiatives designed to encourage investment, plantation development, downstream processing, value-adding and jobs growth in Tasmania's forests-based industries; and
- the implementation of new intensive forest management initiatives, including eucalypt and blackwood plantations, and Native Forest thinning, to balance changes in Forest inventory resulting from this Agreement and expand that inventory; and
- security of access to the mining industry by providing defined land tenures as outlined in Attachment 6 which allow for exploration and mining together with the protection of Environment and Heritage Values; and
- the provision for the development of tourism and recreation opportunities based on Tasmania's environmental advantages.

75. The Commonwealth recognises that the TFFIS provides a commitment to a sustainable sawlog and veneer industry, and has identified minimum aggregate target supply levels for eucalypt sawlog and veneer log, and special species timbers from Public Lands.

76. The Parties acknowledge that this Agreement supports the commitments of the TFFIS as far as practicable but recognise that revision of target sawlog supply levels from Public Land may need to be considered as part of the five yearly reviews of sustainable yield specified under the TFFIS.

77. The Parties further acknowledge that the new Intensive Forest Management initiatives concluded in this Agreement have been designed to provide for the TFFIS current target from Public Land of a minimum 300,000 cubic metres per year of high quality eucalypt sawlog/veneer log and 10,000 cubic metres per year of blackwood sawlogs.

Other Forest Uses

78. The Parties agree that Forest uses other than timber production will be determined in accordance with Tasmanian legislation with due regard to protection of Environment and Heritage Values.

79. The Parties recognise subject to clauses 80, 81 and 82, 74, 75 and 89, that mineral exploration and mining can occur in those specified parts of the CAR Reserve System which are identified in Attachment 6.



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80. The State confirms that mineral exploration in areas covered by the CAR Reserve System will be subject to the Tasmanian Mineral Exploration Code of Practice and that all exploration proposals will be referred to the Mineral Exploration Working Group who will investigate the potential impact on CAR values and recommend appropriate conditions to protect those values.
81. The State will ensure that all proposed mining activities in areas covered by the CAR Reserve System will be subject to environmental impact assessment and environmental management conditions as required by the *Environmental Management and Pollution Control Act 1994* (Tas.), the *State Policies and Projects Act 1993* (Tas.), and/or the *Mineral Resources Development Act 1995* (Tas.).
82. The Parties agree that in relation to those parts of the CAR Reserve System with high quality wilderness values, as identified through the CRA, measures will be taken under State processes to minimise the effects of mineral exploration and mining activities on wilderness values. Rehabilitation of any exploration activity impacts and rehabilitation of any mine site will be in accordance with the provisions of the *Minerals Resources Development Act 1995* (Tas.), and the *Environmental Management and Pollution Control Act 1994* (Tas.) in so far as any permit conditions are relevant, and will aim both to achieve world's best practice and to return the site to its wilderness condition.

Indigenous Issues

83. The State undertakes that it will introduce into the State Parliament legislation to replace the *Aboriginal Relics Act 1975* (Tas.). This will occur following a formal consultation with the Tasmanian Aboriginal community to ensure the appropriate management of Aboriginal heritage, including the maintenance of traditional and historic sites, uses and values in Tasmania.
84. This Agreement is not intended to influence either current or future Native Title claims in any way. Where any government action to implement this Agreement could affect Native Title, that action will be taken in accordance with the *Native Title Act 1993*.

Competition Principles

85. The Commonwealth agrees that the day-to-day pricing and allocation arrangements for wood from the Public Forest Estate are matters for the State. The State confirms its commitment to the pricing and allocation principles set out in the NFPS .
86. The Parties recognise that under the Competition Principles Agreement, governments aim to achieve more transparency and greater efficiency in government owned business enterprises.
87. The State confirms its commitments under the Competition Principles Agreement, which provides that legislation relevant to the allocation and pricing of hardwood logs from State forests will be reviewed before the 31st December 1999. Competitive neutrality principles will be taken into account in any changes following the review.



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Research

88. The Parties agree that continuing research in a range of areas is vital to ensure that all aspects of forest management remain up to date with the latest information and technological developments and have outlined research priorities in Attachment 13.
89. The Parties agree to make publicly available, wherever practical, research reports relevant to the substance of this Agreement.

Data Use and Access

90. The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and accreditation of relevant information owned and held by each of them and have agreed to provide such access and accreditation for the term of this Agreement in accordance with the practices and procedures specified in Attachment 14.

Sustainability Indicators

91. The Parties agree to develop and establish by the first of December 1999 an appropriate, practical and cost effective set of Sustainability Indicators which:
- have regard to the Montreal Process Criteria (as amended from time to time) the current form of which is specified in Attachment 4 and take account of the processes and regional framework of indicators developed by the Montreal Process Implementation Group; and
 - assess the criteria for sustainable forest management for the whole of the Tasmania Region; and
 - take account of the results of the Warra Case Study to develop effective regional indicators; and
 - include appropriate social and economic indicators; and
- in the development of those indicators the Parties agree to:
- determine the frequency of monitoring and reporting; and
 - provide for public consultation and to take account of public comments; and
 - develop efficient linkages to the ongoing work being carried out on the Commonwealth and Tasmanian State of the Forests and State of the Environment Reports to avoid duplication of effort.

PART 3

Nature of Obligations under this Part

92. It is the intention of the Parties that this Part is to create legally enforceable rights and obligations. It is also their intention that, in the event that any provision of this Part exceeds the power of either Party or is unenforceable for any other reason, that provision is to be read as not intending to create legally enforceable rights and obligations.



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Forest Management

93. The State agrees within five years of the date of this Agreement, to further develop its Forest Management Systems and processes through the development and implementation of environmental management systems in accordance with the principles specified in Attachment 5 and acknowledges that its objective for State Forest is system certification comparable with the ISO 14000 series.
94. The State agrees to publish, and make publicly available, its:
- annual compliance audits of the implementation of the *Forest Practices Act 1985* (Tas.), the Forest Practices Code (being the Code issued pursuant to Section 30 of the *Forest Practices Act 1985* (Tas.)) and its code of reserve management specified in Attachment 10; and
 - 5 yearly independent expert reviews of the operation of the above mentioned codes of practice (the code itself, auditing processes and staff competencies) where they are associated with Forest lands.

Compensation

- 95.1 If to protect the environment and heritage values infor the purpose of the conservation of native forests and in connection therewith the protection of:

- (a) CAR Values; or
- (b) Old Growth forest; or
- (c) wilderness; or,
- (d) any Priority Species; or,
- (e) any Endangered Forest Community; or,
- (f) National Estate Values; or,
- (g) World Heritage Values; or,
- (h) Wild Rivers

the Commonwealth takes any Action during the period of this Agreement which is inconsistent with any provision of this Agreement and a foreseeable and probable consequence of which is to prevent or substantially limit:

- (i) the use of land which is not included within the CAR Reserve System for Forestry Operations which, immediately before the announcement of the proposed Commonwealth Action, are being undertaken or were intended to be undertaken at any time or the use of land which is not included within the CAR Reserve System or of land within that system but not within a Dedicated Reserve for Mining Operations pursuant to a statutory lease, statutory licence or other statutory authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action; or,
- (j) the sale or commercial use of Forest Products sourced from land which is not included within the CAR Reserve System or the first sale or first commercial use of Mining Products sourced from land which is not included within the CAR Reserve System or land within that system but not within a Dedicated Reserve for a purpose for which,



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immediately prior to the announcement of the proposed Commonwealth Action, they had been intended to be sold or used commercially at any time; or,

- (k) the construction on land which is not included within the CAR Reserve System of roads being built or intended to be built, immediately before the announcement of the proposed Commonwealth Action, where those roads primary purpose is for the transportation of Forest Products sourced from land which is not included within the CAR Reserve System,

the Commonwealth will pay compensation to the State in accordance with the remaining provisions of this clause 95.2 to 95.20..

95.2 Subject to:

- (a) clauses 95.3, 95.4, 95.5, 95.6, 95.8, 95.9, 95.10, 95.11 and 95.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 95.1 in relation to the prevention by Commonwealth Action of the use of land for Forestry Operations or prevention by Commonwealth Action of the sale or commercial use of Forest Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 95.1 occurred, by any person in any of the following classes of person
 - (i) the Owner of the land or of the Forest Products on the land ;
 - (ii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land or with any person mentioned in subparagraph (iii) below for the carrying out of Forestry Operations on the land ; and
 - (iii) any person who, prior to the announcement of the proposed Commonwealth Action but not in anticipation of that Action, entered into a contract with the Owner of the land or of the Forest Products on the land to purchase the Forest Products on the land.
- (b) clauses 95.3, 95.4, 95.5, 95.6, 95.7, 95.8, 95.9, 95.10, 95.11 and 95.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 95.1 in relation to the prevention by Commonwealth Action of the use of land for Mining Operations or the first sale or first commercial use, disposal or use of Mining Products is the amount of the reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 95.1 occurred, by the holder of the any person carrying on Mining Operations on the land pursuant to a statutory lease, statutory licence or other statutory authority permitting those operations which was in force immediately prior to the announcement of the proposed Commonwealth Action statutory lease, licence or authority as the case may be.
- (c) clauses 95.3, 95.4, 95.6, 95.8, 95.11 and 95.12 the compensation to be paid by the Commonwealth to the State in accordance with clause 95.1 in relation to the prevention by Commonwealth Action of construction of a road is the amount of reasonable loss or damage sustained by reason of that prevention, calculated as at the time at which the prevention referred to in clause 95.1 occurred, by any person who, immediately before the



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announcement of the proposed Commonwealth Action, was contracted to construct that road.

- 95.3. No amount of compensation is payable in the event of any loss or damage being sustained which would have been so sustained regardless of the Commonwealth Action. No compensation is payable hereunder in respect of any additional areas included pursuant to this Agreement in the CAR Reserve System.
- 95.4 The State warrants that no claim will be made in respect of areas where Forestry Operations or Mining Operations would not have been permitted by this agreement and that any claims will be certified by it as being or not being in respect of such areas and as having been assessed by the State in this regard.
- 95.5 The State warrants that no claim will be made in respect of Forest Products or Mining Products which would not have been available for sale or commercial use under this Agreement and that any claims will be certified by it as being or not being in respect of such Products and as having been assessed by the State in this regard.
- 95.6 The State undertakes to supply to the Commonwealth on request information, including as to areas protected by prescription, required by the Commonwealth for the purposes of considering claims under this clause.
- 95.7 To the extent that clause 95.2 (b) relates to loss or damage in respect of an exploration licence or a retention licence, that clause is to be read as providing for compensation to be payable only:
- (a) in respect of the part of the area to which that licence relates that is affected by the Commonwealth Action; and
 - (b) up to the loss in market value of that licence resulting from the prevention of the Mining Operations
- 95.8 Any claim made by the State hereunder is to be notified in writing within 6 months after the loss or damage is sustained.
- 95.9 For the purposes of clause 95.1(i), the intention to conduct Forestry Operations is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 95.10 For the purposes of clause 95.1(j), the purpose for which there was an intention to sell or use commercially is to be established on the basis of contracts, documentation of management history or other records establishing clear intent and in existence immediately prior to the announcement of the proposed Commonwealth Action.
- 95.11 No compensation is payable under clause 95.2 in relation to any loss or damage which the person who sustained the loss or damage might have avoided by taking reasonable steps in mitigation including by the making of alternative contractual arrangements which would have avoided or reduced that loss or damage.
- 95.12 Clause 95.2 does not apply so as to entitle the State to recover compensation more than once in respect of the same loss or damage.



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95.13 The initial procedure in relation to a claim for compensation under this clause is as follows:

- (a) The State is to make the claim for compensation by a notice in writing to the Commonwealth which indicates the amount claimed, for whom the claim is made, the area to which it relates and gives detailed particulars of the basis for the claim, and of the manner in which it has been calculated.
- (b) Where there is a dispute concerning a claim for compensation, or on or before the expiry of thirty days after the receipt of a claim, the Commonwealth notifies the State that it does not accept the amount claimed then either Party may serve a notice of dispute under clause 11.
- (c) In the event that the amount of compensation payable in response to a claim has not been agreed in the dispute resolution process for which clauses 11 to 15 provides, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), the Parties hereby refer the claim to arbitration in accordance with the *Commercial Arbitration Act* 1986 (Tas.).

95.14 The procedure in relation to any arbitration required by reason of the provisions of clause 95.13 is as follows:

- (a) The Parties must meet to appoint an arbitrator within 7 days of an unsuccessful mediation.
- (b) If the Parties are unable to agree on the appointment of an arbitrator, either of them may refer the matter to the President of the Law Council of Australia, or equivalent officer of such body as in future may have the functions of the Law Council of Australia, with a request that that person appoint an arbitrator.
- (c) At an arbitration under this clause:
 - (i) the Parties are entitled to representation by a legal practitioner qualified to practice in any State of Australia;
 - (ii) the arbitrator may order the Parties to discover any relevant documents prior to the hearing;
 - (iii) the arbitrator may order the Parties to exchange proofs of evidence of witnesses (whether expert or not) prior to the hearing;
 - (iv) the arbitrator may take advice from any other person as to the matters in issue, but if so, the arbitrator must provide the Parties with an opportunity to:
 - (1) make submissions on the matter in which the advice is to be taken;
 - (2) make submissions on the identity of the person from whom the advice is to be taken
 - (3) make submission on the substance of any advice given before making any decision on the issue on which the advice is taken;
 - (v) the arbitrator must conduct the arbitration in accordance with procedural fairness;
 - (vi) subject to sections 31 and 32 of the *Commercial Arbitration Act* 1986 (Tas.), the arbitrator may award interest on any sum ordered to be paid by one Party to the other.



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- 95.15 Subject to clause 95.18 and any appeal under section 38.4 of the *Commercial Arbitration Act* 1986 (Tas.) the Commonwealth undertakes to pay the State the amount of any award made by an arbitrator under clause 95.14 (including any award of costs, and any interest which the arbitrator may direct to be payable on the award or any award of costs) as a debt due to the State, and to do so within 60 days of the award.
- 95.16 Except where the State is the person who sustained the relevant loss or damage, any payment of compensation made by the Commonwealth to the State in accordance with this clause will be paid to and received by the State as trustee for the person who sustained the relevant loss or damage.
- 95.17 Subject to clause 95.18(b), where the State receives monies as a trustee pursuant to clause 95.16, it will pay those monies to the person who sustained the relevant loss or damage within 30 days.
- 95.18 (a) Where the Commonwealth has agreed to pay compensation to the State under this clause, or an award of compensation has been made under clause 95.14 as a result of arbitration, and the Commonwealth claims that events have since taken place which have the result that the compensation for future loss and damage comprised in the compensation so agreed or awarded no longer reflects the actual loss or damage that has been or will be sustained, the Commonwealth may by notice in writing to the State, decline to pay that compensation for future loss and damage.
- (b) If a notice under paragraph (a) is delivered after the State has received the compensation so agreed or awarded, but before the State has paid it to the person who sustained the relevant loss or damage, the State will not pay the compensation for future loss and damage to that person.
- (c) If a notice under paragraph (a) is delivered, the Parties will attempt to agree the amount of the compensation for future loss and damage which the Commonwealth should pay, and -
- (i) in default of agreement, will first seek to resolve the dispute by dispute resolution under clauses 11 to 15; and
 - (ii) in the event that the dispute is not so resolved, or the Commonwealth fails to pay the agreed amount of compensation to the State within 60 days of agreement (for reasons other than lack of the necessary appropriation), hereby refer that dispute the claim for compensation to arbitration in accordance with the *Commercial Arbitration Act* 1986 (Tas.)
- (d) Subject to paragraph (e) and (f) of this clause, where an arbitration takes place in accordance with sub-paragraph (c)(ii), clauses 95.14 and 95.15 of this Agreement apply to that arbitration and to any amount awarded in that arbitration.
- (e) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay a reduced amount of compensation to the State, the State will within 30 days of that determination -
- (i) repay to the Commonwealth the amount by which the compensation paid to it by the Commonwealth is reduced ; and



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- (ii) pay the balance of the compensation to the person who sustained the relevant loss or damage.
- (f) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the Commonwealth should pay an increased amount of compensation to the State -
 - (i) the Commonwealth will within 60 days of that determination pay to the State the amount of the increase ; and
 - (ii) the State will, within 30 days of receiving the amount of the increase, pay that amount to the person who sustained the relevant loss or damage.
- (g) If, following the observance of paragraph (c) of this clause, it is determined by agreement or award that the amount of compensation previously paid to the State is correct or that an increased amount of compensation should be paid to the State, the State will within 30 days of that determination pay to the person who sustained the relevant loss or damage the amount of the compensation previously paid to it by the Commonwealth.

95.19 Where the State:

- (a) has received monies as a trustee pursuant to clause 95.16; and
 - (b) has made all reasonable endeavours to pay the monies to the person who sustained the relevant loss or damage; and
 - (c) but has been unable to do so within six months of receiving payment
- the State shall repay to the Commonwealth at the expiry of that period the monies so received.

95.20 In this clause

- (a) "Action" means
 - (i) the commencement of legislation or subordinate legislation ; and
 - (ii) administrative action which is taken pursuant to legislation or subordinate legislation, or otherwise than in accordance with such legislation.
- (b) "Owner" means
 - (i) in relation to land
 - (1) the owner of any estate or interest in that land, including the Crown in right of the State ; and
 - (2) any statutory corporation which has the power to carry on Forestry Operations or Mining Operations, as the case may be, on the land for profit.
 - (ii) in relation to Forest Products or Mining Products, as the case may be, the owner of any interest in those products.

Databases and Confirmation

96. The State agrees that any changes to the Priority Species in Attachment 2 including new or altered management prescriptions developed over the term of the Agreement will:
- (a) be adequate to maintain the species identified;



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- (b) have a sound scientific basis;
 - (c) be endorsed by the Tasmanian Threatened Species Scientific Advisory Committee where relevant; and
 - (d) take note of public comment.
97. A Management Prescriptions Database and a Response to Disturbance Database have been prepared as part of the comprehensive regional assessment for species identified as priority for protection by reservation and/or management prescription. The State agrees to maintain these databases and to update them as necessary and also confirms that they will be used as a basis for updating relevant State management documents including the Threatened Species Database, Listing Statements, the Management Decision Classification System, the Forest Botany Manuals and the Threatened Fauna Manual. Updated hard copies of the database contents will be made available periodically for public comment.

Review of Sustainable High Quality Sawlog Supply Levels

98. The State agrees to undertake a review of sustainable high quality sawlog supply levels from public land to reflect the changes in the forest inventory and new intensive forest management initiatives concluded in this Agreement. The review will be completed and published during the first year of this Agreement, and thereafter will coincide with the 5 yearly reviews of this Agreement.

Review of Pricing and Allocation Policies for Commercial Government Owned Forestry Operations

99. The State agrees to undertake by 30th April 1998 a review on pricing and allocation policies for commercial government owned forestry operations and agrees to make available to the public a report describing the outcomes of the review and agrees to consider these outcomes in the development of its pricing and allocation policy.

Financial Assistance

100. The Commonwealth will, subject to the provisions of the *Natural Heritage Trust of Australia Act 1997*, and the terms and conditions of the Partnership Agreement entered into by it with Tasmania on 7 October 1997 under section 19 of that Act, provide \$20 million for actions to implement the 'Program to protect conservation values on private land in support of the CAR Reserve System' described at Attachment 8 of this Agreement. Such payments are to be made on the basis provided for in that Attachment.
101. The Commonwealth will, subject to the terms and conditions under any Commonwealth Act which appropriates money for use by the State for the purposes of this Agreement, provide that money to the State as follows:
- (i) an amount of \$5747(57) million in equal instalments over three years commencing 1997-98 for the implementation of new intensive forest management initiatives;



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- (ii) an amount of \$13 million in equal instalments over three years commencing 1997-98 for the implementation of employment and industry development initiatives specified in Attachment 12;
- (iii) an amount of \$10 million in equal instalments over three years commencing 1997-98 for infrastructure development projects as specified in Attachment 12, being
 - roading to increase productivity (\$6 million),
 - tourism infrastructure (\$3 million) and
 - new reserve management (\$1 million); and
- (iv) a further amount of \$10 million in equal instalments over 2 years commencing 1997-98 for actions to implement the 'Program to protect conservation values on private land in support of the CAR Reserve System' described at Attachment 8 of this Agreement.

Termination

102. This Agreement may only be terminated by the Commonwealth;
- a) with the consent of the State; or
 - b) where the dispute resolution procedures in clauses 11 to 15 have been observed and the State has been given a 90 day period of notice on:
 - (i) a failure by the State to comply with clause 24(b) or 24(d) being a failure to proclaim any of the new reserves; or
 - (ii) a failure by the State to comply with clause 24(a), being a failure to conserve the areas in the CAR Reserve system identified in Attachment 6 (other than Commonwealth owned or leased land), other than a failure of a minor nature which is not one or a part of a series of deliberate or reckless failures of a minor nature; or
 - (iii) a failure by the State to comply with clause 24(c), being a failure to introduce legislation in accordance with that clause or a failure to use its best endeavours to secure the enactment of that legislation; or
 - (iv) a failure by the State to observe the terms and conditions referred to in clauses 100 or and 101 or a failure to use the money referred to in clause 100 or 101 for the purpose for which it is appropriated; or
 - (v) a failure by the State to comply with clauses 58, 60, 64, 68 or 73 other than a failure of a minor nature which is not one or a part of a series of deliberate or reckless failures of a minor nature
- save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or
- c) on a fundamental failure by the State to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 11 to 15. 7.
103. The Agreement may only be terminated by the State.
- a) with the consent of the Commonwealth; or



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- b) where the dispute resolution procedures in clauses 11 to 15 have been observed and the Commonwealth has been given a 90 day period of notice on:
- i) a breach by the Commonwealth of clauses 100 and 101, being a failure to pay financial assistance in accordance with those clauses, or
 - ii) a breach by the Commonwealth of clause 95, being a failure to pay compensation due under that clause, or
 - iii) a failure by the Commonwealth to comply with clauses 22 or 23 being a failure to introduce into the Commonwealth Parliament the legislation referred to in clause 23 in accordance with that clause, or a failure to use its best endeavours to secure the enactment of that legislation;
- save that the above provisions do not apply if rectification is possible and has occurred before the end of the 90 day period; or
- c) on a fundamental failure by the Commonwealth to comply with the spirit of the Agreement after the observance of the dispute resolution procedures in clauses 11 to 15.

IN WITNESS WHEREOF this Agreement has been signed for and on behalf of the Parties as at the day and year first above written.

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD, Prime Minister)
)
)

for and on behalf of the Commonwealth of Australia

in the presence of:)
)
)

SIGNED by

the HONOURABLE ANTHONY MAXWELL RUNDLE, Premier)
)
)

for and on behalf of the State of Tasmania

in the presence of:)
)
)

Please note: for RFA Attachments please see RFA website: www.rfa.gov.au/rfa/tas/index.html



TASMANIA

VARIATION TO THE TASMANIAN REGIONAL FOREST AGREEMENT

THIS AGREEMENT is made on the day of 2001

BETWEEN

THE STATE OF TASMANIA (“Tasmania” or “the State”) and

THE COMMONWEALTH (“the Commonwealth”)

Recitals

WHEREAS:

Purpose of Agreement

- A On 8 November 1997, the Commonwealth and Tasmania (“the Parties”) executed the Tasmanian Regional Forest Agreement (“the Tasmanian RFA”).
- B The Parties have agreed to vary the Tasmanian RFA.

NOW IT IS AGREED as follows:

1. This Agreement (“the Variation”) is to be interpreted, unless the contrary intention appears, with reference to the definitions and general provisions specified in clauses 2 and 3 of the Tasmanian RFA.
2. The attached Schedule of Amendments sets out the amendments to the Tasmanian RFA.
3. This Variation will be Attachment 15 to the Tasmanian RFA.
4. The Variation may be executed in any number of counterparts, all of which taken together constitute one and the same instrument.



Background Report

SIGNED by

the HONOURABLE JOHN WINSTON HOWARD MP, Prime Minister
for and on behalf of the Commonwealth of Australia

in the presence of:

SIGNED by

the HONOURABLE JIM BACON MP, Premier
for and on behalf of the State of Tasmania

in the presence of:

SCHEDULE OF AMENDMENTS TO THE TASMANIAN REGIONAL FOREST AGREEMENT

1. Omit in clause 2 under the definition of 'Formal Reserve':
"dedication or"
2. Insert at the beginning of the heading immediately above clause 9 ("Cooperation and Response to Requests"):
"Changes to the Agreement, "
3. Insert at beginning of clause 9:
"This Agreement may only be amended with the consent, in writing, of both Parties."
4. Under clause 16, omit:
"Department of the Prime Minister and Cabinet
3-5 National Circuit"
and replace with:
"Department of Agriculture, Fisheries and Forestry
Edmund Barton Building
Broughton Street"
5. Insert new clause 95:
"95. The Parties agree that:"



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6. Insert new clauses (a) and (b) under clause 95.13 as follows:
 - “(a) A person who claims to have sustained loss or damage for which compensation is payable may lodge an initiating claim with the State.
 - (b) On receiving a claim, the State must make a corresponding claim for compensation to the Commonwealth. “
7. Renumber previous clauses 95.13(a) and 95.13(b) as clauses 95.13(c) and 95.13(d) respectively.
8. Renumber previous clause 95.13(c) as clause 95.13(e) and delete:

“in accordance with the *Commercial Arbitration Act 1986 (Tas)*”.
9. Insert new clause 95.13(f) as follows:

“(f) An arbitration under this Agreement is to be conducted in accordance with the provisions of the *Commercial Arbitration Act 1986 (Tas)* which are, to the extent permitted by the *Judiciary Act 1903 (Cwth)* and the Commonwealth Constitution, incorporated by reference into this Agreement.”
10. Under clause 95.14(c)(iv) omit and substitute with:

“(iv) the arbitrator may, in accordance with clause 95.13(f), inform himself or herself in relation to any matter in such manner as the arbitrator thinks fit; provided that if the arbitrator takes advice from any other person who is not a Party to this Agreement as to the matters in issue, the arbitrator must provide the Parties with an opportunity to:”.
11. Delete clause 95.14(c)(vi).
12. Under clause 95.15 omit:

“Subject to clause 95.18 and any appeal under section 38.4 of the *Commercial Arbitration Act 1986 (Tas.)*”

and substitute:

“Unless the Commonwealth appeals the decision of the arbitrator, and subject to clause 95.18, “.
13. Under clause 95.18(c)(ii) omit:

“the *Commercial Arbitration Act 1986 (Tas)*”

and substitute:

“clause 95.13(f)”.
14. Omit clause 102(a) and renumber 102(b) and 102(c) as 102(a) and 102(b) accordingly.
15. Omit clause 103(a) and renumber 103(b) and 103(c) as 103(a) and 103(b) accordingly.
16. Insert new clauses as follows:

“104. This Agreement may be terminated with the consent of the Commonwealth and the State.
Notice of intention to review before termination by consent
105
105.1. A consent under clause 104 is of no effect, unless:

 - (a) it is given at least 12 months after a notice of intention to review the operation of this Agreement is published in the Commonwealth Gazette and a national newspaper and a



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newspaper circulating in Tasmania stating that a joint review is being undertaken by the Parties because they intend to terminate the Agreement by consent; and

(b) the Parties have conducted the joint review.

105.2. The joint review must consider whether the operation of the Agreement has met the goals set out in Recitals A and B.

105.3. Within 8 months after the notice of intention to review is published under this clause, and after considering any submissions to the joint review, the Parties must make a report of the review publicly available.

105.4. If, under clause 45, a 5 yearly review is to be conducted during the 12 month period after a notice of intention to review is published under this clause, and the joint review is conducted under this clause, the Parties may agree that the review under clause 45 need not be undertaken.

17. Omit in Attachment 6, clause 3, Other Formal Reserves:

“public reserve”



A Summary of the First Five Years of the Tasmanian Regional Forest Agreement

(prepared by the Commonwealth and State Steering Committee)

Background

The following information is a summary of two reports released by the Commonwealth and State Governments as part of the five year review of Tasmanian Regional Forest Agreement (RFA).

The summary outlines progress with implementation of the RFA including what has been done to date and what still needs to be done.

The information contained in these reports has been developed by experts from the Tasmanian and Commonwealth Governments with detailed knowledge of the RFA and forest management.

Performance Report

CAR Public Reserve System

Public Land

An enhanced Comprehensive, Adequate and Representative (CAR) forest reserve system has been developed. This system ensures a minimum level of representation of all different forest types in Tasmania's reserve system.

This has resulted in the creation of an additional 458,000 ha of new reserves containing 293,000 ha of forest.

Private Land

To 30 June 2001, 6,411 ha of reserves has been secured by covenant or agreement with a total of 15,000 ha agreed but not yet secured. While this is less than originally planned the uptake is increasing rapidly.

Ecologically Sustainable Forest Management

Strategic Planning

The Threatened Species Strategy and management plans for all State forest and most National Parks have been completed. Other key strategies such as policies to retain minimum levels of forest cover are under review. The Nature Conservation Strategy is close to completion.



Threatened Species

The threatened species lists have been upgraded and progress has been made on recovery plans and management systems.

Sustainability

Three key projects include:

- red myrtle – A review of the red myrtle timber resource has been undertaken to establish where best to harvest required supplies;
- sawlogs – a further review of the sustainable harvest of eucalypt sawlogs on State forest is close to completion; and
- a set of indicators for tracking the sustainable management of Tasmania's forests has also been prepared.

Forest Practice Systems

Tasmania has implemented a review of the Forest Practices Code and amended the Forest Practices Act to improve reporting on compliance and to improve the independence and transparency of the Forest Practices Board.

Industry Development

Infrastructure

- \$10 million dollars of RFA money has been allocated on infrastructure including: roads to get wood from the forest to the market, regional tourism centres such as the Freycinet Visitors Centre and the Great Western Tiers Visitor Services Complex and to assist with visitor management in National Parks.
- An additional \$67 million dollars of RFA money is committed to the development of plantations to increase wood supply.
- In total, there has been an increase in the plantation estate of 56,000ha.
- \$1.6 million dollars of RFA money has been allocated to develop new processing technology to add value to Tasmania's wood products.

Certainty of Resource Access

Forestry and Mining

Legislation is in place in Tasmania to ensure access to wood supply. The Commonwealth Parliament is considering legislation in March /April 2002.

Legislation is in place to provide access to some reserve classes for mineral exploration and mining.



Sustainability Indicators Report

The Commonwealth and State have agreed on a number of measures to assess how well we are managing Tasmania's forests.

Conservation of Biological Diversity

The following key points are reported for the five year reporting period (1996-2001):

- the area of native forest has decreased by approximately 40,000ha or approximately 1.2%;
- 40.1% of native forest is now in reserves;
- 69% of old growth forest is now in reserves;
- 0.6% of old growth forest was logged in the period; and
- no extinctions of forest species recorded.

The status of 36 threatened species has been revised, with nine species moved to lower categories of risk and 27 species moved to higher categories of risk. Most of these re-classifications are due to improved information on the distribution and abundance of the species:

- four previously thought to be extinct species have been rediscovered.

Wood Resource

The amount of public land available for wood production has declined by 2.9% due to the increased amount of land going into the reserve system.

The amount of wood harvested during the first five years of the RFA has been within the sustainable yield.

Ecosystem Health

The major threat to eucalypt plantations is browsing by native animals.

The major threat to pine plantations is needle cast disease caused by a fungus especially at high altitudes.

Forest fires have burnt less land on average during the reporting period than has occurred in the past.

There are no significant new threats to the health of the native forests.

Soil and Water

The indicators show that the managers of Tasmania's forests have effective soil erosion control systems.



Socio-Economic Benefits

Production and consumption

The total annual harvest of timber in Tasmania over the past five years in Tasmania has remained relatively constant.

Forest industry turnover has increased by \$100 million to a total of \$1.2 billion.

Wood product manufacturing accounts for 22% of Tasmanian manufacturing industry.

Recreation and Tourism

Almost all public forest is available for recreation and visitation levels remain high. Wilderness reservation has increased by 9% to 95%.

Cultural, Social and Spiritual

Thirteen areas of land have been transferred to the Aboriginal Land Council of Tasmania.

7,500 ha of State Forest have been zoned for Indigenous cultural heritage.

18,000 ha of State Forest have been zoned for non-indigenous cultural heritage.

Employment

Total employment in the forest industry is estimated at over 8,000.

It is becoming a safer industry for its employees with injury frequency rates decreasing.

Institutional Framework for Indigenous involvement

An Aboriginal Partnership Agreement has been enshrined in the World Heritage Area Management Plan.

Aboriginal people have been employed in National Parks and by the Forest Practices Board to manage indigenous values.

Development of further indicators

The Commonwealth and Tasmania intend to further develop the indicators over the life of the RFA to continuously improve the information on management of Tasmania's forests.

Additional indicators are expected to be available for the next five-year review.

**Report on the Implementation of the
Tasmanian Regional Forest Agreement
1997 – 2002**

**REPORT ON THE IMPLEMENTATION
OF THE TASMANIAN REGIONAL
FOREST AGREEMENT**

1997 – 2002

Version Final - 8/ 3/02

**PREPARED BY THE TASMANIAN
AND COMMONWEALTH
GOVERNMENTS FOR THE 2002
REVIEW OF THE TASMANIAN RFA**

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EXECUTIVE SUMMARY

In November 1997 the Tasmanian and the Commonwealth Governments signed the Tasmanian Regional Forest Agreement (RFA). The RFA provides for annual reporting against milestones and commitments in the RFA for the first four years and a review of progress in the implementation of the RFA in the fifth year (and subsequently every five years).

The RFA established a framework for the management and use of Tasmanian forests which seeks to implement effective conservation, forest management, and forest industry practices.

This executive summary outlines the progress with implementing the RFA against the headings outlined below. Progress has been made in meeting all commitments with the majority fully completed.

Conservation of environment and heritage values through the establishment of a CAR Reserve System

Tasmania committed in the RFA to the establishment of a Comprehensive, Adequate and Representative (CAR) forest reserve system. The system has been implemented through legislative changes to create new categories of reserves and creating new reserves through parliamentary and administrative actions.

As at 30 June 2001 an extended reserve system (both formal and informal) protects 2 713 300 hectares of public land and 8500 hectares of private land (40.0% of Tasmania). The reserve system includes 1 271 200 hectares, or 40.1% of Tasmania's forests. This represents an increase of 293 300 hectares of forest or 30.0% since the RFA was signed. This greatly exceeds the IUCN reserve target of 10% widely adopted throughout the world as a minimum threshold for conservation purposes.

The CAR Reserve System on public land includes the following elements: Formal Reserves, Informal Reserves and areas where CAR values are managed by prescription and on private land areas protected by covenants in perpetuity.

Forest communities and old growth forest have mostly been reserved at, or in excess of the levels agreed in the RFA. A few communities are reserved at lower levels due to a variety of reasons, particularly where they principally occur on private land.

Commitments to protect all areas of twenty forest communities, such as *Eucalyptus globulus* grassy forest and *E. brookeriana* forest, on public land by management prescription have been implemented.

As well as the major changes in public land tenure, progress has been made in implementing the Private CAR Reserve Program. Considerable progress has been made to establish the complex administrative arrangements for this new program and solid progress has been made in securing high conservation value forest on private land. At

30th June 2001, 6411 hectares of additional forested land had been secured (purchased or covenanted), including 500 hectares of oldgrowth forest, under these mechanisms.

Ecologically sustainable management and use of forests in Tasmania

- Strategic planning relating to Natural Resource Management, biodiversity and threatened species

A Threatened Species Strategy and a draft Nature Conservation Strategy for Tasmania have been developed and implementation has commenced. Most Formal Reserves are now covered by Management Plans that recognise and protect CAR values. Further Statewide forest management policies are under development.

Forestry Tasmania has developed a forest management system that has been externally certified as complying with the international standard for environmental management systems ISO 14001.

- The management of threatened species and special natural values

Threatened Species lists have been reviewed. New Recovery Plans have been developed and are being implemented. Mechanisms for protecting threatened species have been improved, including revised prescriptions incorporated into the forest practices system.

National Estate values have been incorporated into forest management planning.

- Sustainability

The RFA required the development of a set of appropriate, practical and cost-effective sustainability indicators. Tasmania and the Commonwealth developed a set of indicators, with public input. These indicators have been used as the basis for the separate report "Sustainability Indicators for Tasmanian Forests 1996 – 2001"

Forestry Tasmania completed a review of sustainable sawlog supply from public forest in 1998. A second review is in progress and due for completion during 2002 to coincide with this five year review. A review of the red-myrtle sawlog resource has been completed and audited to enable options on the future management of the Savage River pipeline corridor to be considered further.

Private Forests Tasmania is also undertaking a review of the private forest wood resource during 2002.

- Native vegetation management

The framework for maintaining a Permanent Forest Estate has been implemented. The Forest Practices Board has implemented annual reporting of outcomes and has undertaken action to enforce the policy where required. The policy is undergoing further review.

Changes to the *Forest Practices Act 1985*, have been passed to improve the protection of native forest on private land. Tree clearing in Tasmania now requires a pre-clearing environmental assessment and approval under the *Forest Practices Act*. Other mechanisms are being implemented to improve management and conservation of vegetation types other than forest.

- Refinements to the administration and operation of the Forest Practices System

The Forest Practices Code was reviewed and revised in 2000 to include a range of RFA commitments. Amendments were made to the *Forest Practices Act* to establish the Board as an independent statutory authority and to improve its transparency. Other amendments were made to the Act in relation to the permanent forest estate, State of the Forests reporting, tree fern harvesting and compliance reporting.

- Public reporting and consultation mechanisms

All commitments to maintain and improve reporting have been met. A range of new reports has been published to improve documentation of forest management systems. Annual reports of RFA implementation have been prepared. Success of forest regeneration and results of annual forest practices audits are published in relevant annual reports.

Growth and development of Tasmanian forest based industries

Statewide, 56 000 hectares of new hardwood and softwood plantation has been established in the five years to 30 June 2001. Forestry Tasmania has established 16 000 hectares of new eucalypt plantation (included in the 56 000 hectares of new plantation above) and thinned over 4000 hectares of regrowth native forest under the Commonwealth funded program to expand the level of intensively managed forest.

The Commonwealth provided \$6 million for roadworks to improve industry productivity. Major works have been completed on a Derwent-Huon link road, forest roading in the Northeast and on the Tasman Highway near Orford.

The Forests and Forest Industry Council has continued research into the development of improved sawing and seasoning methods for young wood from Tasmanian forests.

A wide range of initiatives were undertaken by both Governments to facilitate improved industry employment, training, marketing, export facilitation, networking, and research. Both Governments jointly prepared and signed a Statement on Sustainable Forest Management for use by Tasmanian wood producers overseas.

The Commonwealth has also recently agreed to increase funding for the Forest and Wood Products Research and Development Corporation (FWPRDC) by matching industry contribution for the FWPRDC.

Development of forest-based tourism and recreational opportunities based on Tasmania's environmental advantages

Construction of a new visitor centre at Coles Bay (Freycinet National Park) and a range of visitor projects in the Great Western Tiers area are nearing completion. The Commonwealth provided \$3million in RFA funding towards these projects with other funding provided by the State. Many other forest-based tourism and recreational projects have been completed, including the Mt Field Visitor Centre, the highly successful Tahune AirWalk and the Scottsdale Forest Eco-Centre. Many walking tracks have been upgraded as part of the Tasmanian Walking Track Strategy.

Certainty of resource access to the forest industry

The RFA remains in force for twenty years.

The *Export Control (Regional Forest Agreement) Regulations 1997* provided that, as the RFA came into force, all export controls on woodchips and other processed wood from an RFA region (except that sourced from plantations) were lifted, thus removing controls in relation to application of the Commonwealth *Export Control Act 1982*.

Forestry operations can be undertaken without approval under the *Environment Protection and Biodiversity and Conservation Act 1999* provided they are carried out in accordance with an RFA.

The Regional Forest Agreements Bill has been introduced into Commonwealth Parliament on three occasions since 1998 and is currently listed for the autumn 2002 sitting of the Parliament.

The Tasmanian Parliament passed the *Regional Forest Agreement (Land Classification) Act 1998* to provide for the CAR reserve outcomes and provide security of resource access to those public forests outside of the reserve system.

Certainty of resource access to the mining industry

Access to land for exploration and mining continues to be provided under the Tasmanian *Mineral Resources Development Act 1995* and *Mining (Strategic Prospectivity Zone) Act 1993*. Access for mineral exploration has been included as a management objective for Nature Recreation Areas, Conservation Areas and Regional Reserves as part of the new reserve classification system.

INTRODUCTION

The Tasmanian Regional Forest Agreement (RFA) made by the State of Tasmania and the Commonwealth of Australia was signed on 8 November 1997.

The State and the Commonwealth agreed to establish a framework for the management and use of Tasmania's forests that would seek to implement effective conservation, forest management and forest industry practices. In particular the Agreement sought to:

- provide certainty for conservation of environment and heritage values through establishing a Comprehensive, Adequate and Representative (CAR) reserve system;
- provide for the ecologically sustainable management and use of forests in Tasmania;
- provide for future growth and development of Tasmanian industries associated with forests and timber products;
- assist with developing forest-based tourism and recreational opportunities based on Tasmania's environmental advantages;
- provide certainty of resource access to the forest industry;
- provide certainty of resource access to the mining industry;
- remove relevant controls in the Commonwealth *Export Control Act 1982*;
- introduce a range of new or enhanced initiatives to assist with forest-based development;
- encourage the development of forest-based research; and
- encourage significant employment opportunities and investment throughout Tasmania.

To assist in achieving the objectives of the RFA, milestones were agreed. They are summarised in Attachment 3 of the RFA and repeated early in this report. In addition, the State and the Commonwealth identified "Other Commitments" that needed to be made to implement the RFA effectively. They are also listed early in this report.

The RFA, in Clauses 45, 46 and 47, outlines the five-yearly review requirements to evaluate the performance against the Agreement. It requires that the review be undertaken in the last year of each five-year period.

This report details performance against the RFA milestones and "Other Commitments" to demonstrate success or otherwise in implementing the RFA. Information provided is current to the end of 2001. Work on some commitments for the first five years is still in progress.

The RFA Review Working Group coordinated the development of this report with representatives from the following agencies:

- Forest Practices Board
- Department of Premier and Cabinet
- Department of Infrastructure, Energy and Resources
- Department of Primary Industries, Water and Environment
- Forestry Tasmania
- Private Forests Tasmania
- Agriculture, Fisheries and Forestry Australia
- Environment Australia.

Other Tasmanian and Commonwealth agencies contributed information when requested by the Working Group. Private forestry sector information was provided through Private Forests Tasmania.

The format of this report is to state each milestone or other commitment (both of which are RFA clauses) followed by the performance response. The same numbering and order are used as in the RFA to enable easy cross-referencing.

The performance against each of the RFA milestones and commitments is summarised in Tables 1 and 2.

Table 1 - RFA Agreed Milestones

Clause	Milestone / Action	Status
#8	The State and the Commonwealth to jointly determine the process for extending the RFA.	Not yet required
#23(a)	The Commonwealth to prepare a policy outline for RFA legislation, which will include provisions as specified in clause 22.	Completed
#23(c)	The Commonwealth to introduce legislation to provide certainty to the provisions specified in clause 22.	Legislation introduced but not enacted
#24(b)	The State to proclaim such new reserves having categories provided by existing legislation.	Completed
#24(c)	The State to introduce legislation to establish required new categories of the revised public land classification system.	Completed
#39	The State and the Commonwealth to jointly participate in further World Heritage assessment of the relevant themes.	Completed
#44	The parties to provide each other with written reports detailing the achievements of milestones.	Completed annually
#45	The State and the Commonwealth to review the performance of the RFA.	In progress
#55	The State to review and publish a report on its resource estimates for deep red myrtle supply.	Completed
#87	The State to review legislation relevant to the allocation and pricing of hardwood logs from State forests as part of the Competition Principles Agreement.	Completed
#91	The State and the Commonwealth to develop a set of appropriate, practical, and cost-effective sustainability indicators.	Completed
#93	The State to further develop its forest management systems and processes.	Completed for all State forest and some private forest
#94	The State to publish and make publicly available compliance audits of the Forest Practices Act and Code and the Code of Reserve Management. See also #Att 11,3	Published in Annual Reports
#94	The State to publish and make publicly available independent expert reviews of the operation of its Forest Practices Code and its Code of Practice for Reserve Management.	Independent reviews and revised Code made public and available for comment
#97	The State to maintain and update the Management Prescription Database and the Response to Disturbance Database.	Completed and ongoing
#98	The State to review sustainable high-quality sawlog supply levels to reflect the changes in the forest inventory and new intensive-management forest-management initiatives concluded in the RFA.	First review completed and second review in progress
#99	The State to undertake a review—including reporting to Governments—on pricing and allocation policies for commercial government-owned forestry operations.	Completed

Clause	Milestone / Action	Status
#Att 1, 6.	The State and the Commonwealth to jointly fund and accredit digital maps at 1:100 000 scale of all lands in Tasmania listed on the Register of the National Estate.	Partially completed, but suspended pending Cwth legislation
#Att 6, 5.	The State to finalise boundaries (of CAR reserves) on 1:25 000 maps to enable gazettal.	Completed
#Att 6, 17.	Forestry Tasmania to include informal reserves in new and revised forest management plans	Completed
#Att 8, 2.	The strategic plan for implementing the CAR Reserve System program on private lands is to be developed.	Completed
#Att 9, 5.	The State to conduct a formal review of the area of forest communities within each IBRA region as part of the five-yearly review of the RFA.	Completed
#Att 9, 8.	The State to introduce, in respect of private land, mechanisms to encourage native vegetation retention and management.	Mechanisms introduced. Process ongoing
#Att 9, 11.	The State to review the policy for maintaining a permanent Forest Estate as part of the ongoing review of the Forest Practices Code.	Review in progress
#Att 10, 3.	The State to develop and implement a Threatened Species Protection Strategy.	Development completed
#Att 10, 3.	The State to develop and implement a Tasmanian Biodiversity Strategy.	Draft completed
#Att 10, 5.	The State to develop new legislation in relation to Aboriginal cultural heritage to replace the <i>Aboriginal Relics Act 1975</i> .	Deferred pending Cwth legislation and further consultation
#Att 10, 7.	The State to develop and implement State-wide policies across all tenure on fire management, nature based tourism and recreation management, cultural-heritage management in forest, and forest pest and disease management.	In progress, some components completed
#Att 10, 8.	The State to ensure that management plans are implemented: <ul style="list-style-type: none"> - for all State forest and National parks; and - for all other formal reserves 	Completed for State forest, good progress for conservation tenures
#Att 10, 11.	The State to develop and implement Code of Practice for Reserve Management	Draft completed
#Att 11, 1.	The State to complete and publish silvicultural guidelines for the management of commercial forest types	Completed
#Att 11, 2.	The State to publish a description of the methods of calculating sustainable yield on public land, including for special-species timber sawlogs.	Completed
#Att 11, 3.	Relevant State agencies to include in their annual reports a report on outcomes of the compliance audits for codes of practice, and the monitoring of forest regeneration success and trends. See also #41.	Completed annually
#Att 11, 4.	The State to release a document describing the Management Decision Classification System.	Completed
#Att 11, 5.	The State to prepare and release a revised manual for the Management Decision Classification System, including prescription guidelines for special management zones.	Completed

Clause	Milestone / Action	Status
#Att 14, 2.5	Latest versions of all jointly owned data—listed in Schedule 1 of Attachment #14—to be exchanged.	Completed
#Att 14, 3.	The State and the Commonwealth to delete all copies of data that they do not own but were provided for RFA purposes, unless otherwise agreed to in writing by the respective data owners.	Completed
#Att 14, 4.1.	The State and the Commonwealth to list and archive data used for RFA purposes.	Completed

Table 2 - Other RFA Commitments

RFA Clause	Commitment	Status
22(a) (b)	Commonwealth to seek passage of legislation that includes the provision of an RFA.	Legislation introduced but not passed
24(a) & 51	The State undertakes to manage areas in the CAR Reserve System identified in Attachment 6, with the exception of Commonwealth-owned or -leased land, on the basis outlined in that Attachment and in accordance with the relevant objectives set out in Attachment 7. The Parties will take action to establish the CAR reserve system and to manage the CAR values in a regional context consistent with the management objectives specified in Attachment 7.	Ongoing compliance Completed, management ongoing
24(d)	Where any new reserves are to be included in a category specified in Attachment 7 that is not already provided for by existing legislation, Tasmania undertakes to proclaim such new reserves.	Completed
26	The parties agree to the management of National Estate values as set out in Attachment 1.	Completed, management, ongoing
32	Any new or revised recovery plans will be jointly prepared and funded and implemented cooperatively.	Ongoing cooperation and implementation
33	Multiple-species recovery plans will be developed where appropriate	Identified plans developed
34	The Commonwealth will continue to consult with the State on the preparation of threat-abatement plans for key threatening processes.	Consultation ongoing
35	Commonwealth to adopt State recovery plans where they meet requirements of Commonwealth legislation.	Identified plans adopted
36	National recovery plans and threat-abatement plans will be prepared jointly with other governments where possible.	Joint plan development undertaken
37	The Parties will consult on the priorities for listing threatening species, forest communities and threatening processes, and in the preparation of all recovery plans and threat-abatement plans.	Consultation ongoing
40	The Commonwealth agrees that it will give full consideration to potential social and economic consequences of any World Heritage nomination of places in Tasmania and that any such nomination will only occur after the fullest consultation and agreement with the State.	No nomination
41	World Heritage nomination to be drawn from the Dedicated Reserve System.	No nomination

RFA Clause	Commitment	Status
42	<p>The Parties agree:</p> <ul style="list-style-type: none"> that before any World Heritage nomination of any part of the Forest Estate is made, all necessary management arrangements, including joint policy coordination arrangements and a statutory management plan under the relevant Tasmanian legislation, will be in place; and that prior to any World Heritage nomination, all related funding issues will be resolved to the satisfaction of both Parties. 	No nominations
48	CAR Reserve System is to established for the purpose of ensuring long-term conservation and protection as per Attachment 6 and Attachment 8.	Completed
52	The State will consult with the Commonwealth prior to rejecting any recommendations of the Resource Planning and Development Commission in regard to tenure to be applied to those reserves listed in Attachment 6 sections 1.7 and 1.8.	Not applicable
53	All Deferred Forest Lands not included in the CAR reserve system other than those specified in Attachment 6 will be removed from the Register of Deferred Forest Land and added to the Register of Multiple-use Forest Land.	Completed for areas with forestry potential
54	The Commonwealth has requested, and the State has agreed, postponement of any harvesting in the Savage River pipeline corridor. Accordingly the parties agree: to postpone any harvesting and associated forest roading in the area as shown in map 1, and that this area will continue to be included in the calculation of sustainable yield of special-species timber; and that uses other than timber production will continue to be managed in accordance with clause 78 of the agreement	Compliance ongoing
56	The Commonwealth agrees that those areas of the Buckland Military Training Area leased by the Commonwealth from the State and not required for the CAR Reserve System will remain available to the State for timber production purposes, including plantation development.	Ongoing implementation
57	The Parties agree that any changes to those elements of the CAR reserve system in Informal reserves, will occur only in accordance with this agreement, will maintain the level of protection of identified values at the regional scale and that information on all such changes will be publicly available and provided to the person or body conducting the five-yearly review described in clause 45 for incorporation into the review process.	Compliance ongoing
58	<p>The State will continue, with respect to private land, to:</p> <p>(a) ensure that private forest owners comply with the Forest Practices Code for harvesting and regeneration operations;</p> <p>(b) develop adequate mechanisms to protect nature conservation and catchment values; and</p> <p>(c) ‘undertake the initiatives specified in Attachments 9, 10 and 11’.</p>	Compliance ongoing
59	The State agrees to implement a process to facilitate the voluntary participation by private landowners to protect CAR values on private land.	Process has been implemented

RFA Clause	Commitment	Status
60	The State agrees to adopt the Permanent Native Forest Estate policy framework in Attachment 9.	Policy framework adopted
64	The State agrees to amend its forest management systems to reflect the undertakings in this Agreement, particularly those in Attachment 10 (taking account of Clause 63).	Partially completed
68	The State agrees to protect the Priority Species listed in Attachment 2 (Part A) through reservation or management prescriptions.	Completed and ongoing
69	Prior to the first five-year review, the State will, where practical, assess the species listed in Attachment 2 (Part B) and determine management requirements in accordance with clause 96.	Completed for fauna and well advanced for flora
70	Management prescriptions or actions in agreed recovery plans or threat-abatement plans will be implemented as a priority.	Implemented to the limits of funding
71	Any changes to the Priority Species in Attachment 2 or altered management prescriptions for Priority Species will be in accordance with processes in clause 96.	Processes in place
72	Public reporting and consultation opportunities provided through the processes outlined in Attachment 11 will continue.	Commitment met, consultation ongoing
73	The State will implement the range of reporting and consultative mechanisms in Attachment 11.	Implemented and ongoing
74	The Parties agree to cooperate in implementing the specified actions in the Employment and Industries Development Strategy (Attachment 12).	Substantial progress made and implementation ongoing
77	The Parties further acknowledge that the new Intensive Forest Management initiatives concluded in this Agreement have been designed to provide for 300,000 cubic metres per year of high quality Eucalypt sawlogs/veneer and 10,000 cubic metres of blackwood sawlogs.	Initiatives implemented and ongoing
79	The Parties recognise that, subject to clauses 80, 81 and 82, mineral exploration and mining can occur in the parts of the CAR reserve system identified in Attachment 6.	Exploration in CAR Reserve System limited to specified areas
80	Mineral exploration proposals in CAR reserves to be referred to the Mineral Exploration Working Group.	Implemented and ongoing
81	All mining activities in CAR reserves will be subject to environmental impact assessment and environmental management conditions.	No Activities
82	In parts of the CAR reserve system with high-quality wilderness value, measures will be taken to minimise the effects of mining exploration and mining activities on wilderness values. Any rehabilitation will aim to restore the site to wilderness condition.	Implemented and ongoing

RFA Clause	Commitment	Status
83	Tasmania will introduce legislation to replace the <i>Aboriginal Relics Act</i> after consultation with the Tasmanian Aboriginal Community.	Deferred pending Cwth legislation and further consultation
89	Relevant research reports will be made publicly available wherever practicable.	Reports progressively made available
90	Commonwealth and Tasmania to provide each other with access to data as per Attachment 14.	Completed
96	The State agrees that any changes to Priority Species, including new or altered management prescriptions, will be endorsed by the Threatened Species Scientific Advisory Committee and will also take note of public comment.	Implemented and ongoing
100	The Commonwealth will provide \$20 million for the Private CAR Reserve system.	Partly provided
101 (i)	Commonwealth to provide \$57 million for intensive forest management initiatives.	Funding completed
101 (ii)	Commonwealth to provide \$13 million for employment and industry development initiatives, as per Attachment 12.	Funding completed
101 (iii)	Commonwealth to provide \$10 million for infrastructure development initiatives, as per Attachment 12.	Funding completed
101 (iv)	Commonwealth to provide \$10 million for protecting conservation values on private land, as per Attachment 8.	Funding completed

Attachment 6#2	The CAR reserve system on Public Land, not including values managed by prescription, will total 2,700,000ha, comprising 2,304,000ha of existing reserves and 396,000ha of additional reserves.	Completed
Attachment 6 #18	Any changes to Informal Reserve boundaries to be in accordance with clause 57.	Implemented and ongoing
Attachment 6 #20	Management plans with public participation for Commonwealth informal reserves to be completed by 2000.	Completed
Attachment 6 #21	Certain communities will be protected on public land outside of reserves.	Implemented and ongoing
Attachment 6 #22 and #24	Deferred Forest Land not required for the CAR Reserve system to be removed from the Register of Deferred Forest and entered on the Register of Multiple-Use Forests.	Completed for land of potential forestry interest
Attachment 6 #23	Referral of certain Deferred Forest Land to the Public Land Use Commissioner for recommendations on tenure and management.	Completed
Attachment 8 #1-18	A variety of commitments were made with respect to a Strategic Plan, identification of priorities, Advisory Committees, and implementation of the CAR Private Reserves Program.	Strategic Plan completed, program underway
Attachment 10 #1	Implementation of the State Policy <i>Setting New Standards for Water Quality</i> .	Implemented and ongoing
Attachment 10 # 2	Developing a State policy on integrated catchment management.	Placed within the State NRM Framework
Attachment 10#4	Implementing the <i>Historic Cultural Heritage Act 1995</i> .	Implemented and ongoing
Attachment 10#6	Further develop and apply flexible silvicultural systems on public land to promote the sustainable production of special timbers.	Further development underway
Attachment 10 #9	Implementing, as a high priority, the mechanisms for improving transparency and independence of the Forest Practices Board.	Completed
Attachment 10#10	Continue to resource the Forest Practices System and maintain appropriate contributions from industry.	Implemented and ongoing
Attachment 10#12	Ensure that Forest Practices plans specify best-practice reforestation standards and provide for monitoring.	Implemented and ongoing
	Where endangered species have been identified on private land, the plan includes appropriate management prescriptions for those species.	Implemented and ongoing
Attachment 10#13	Management plans for Formal and Informal reserves identify the CAR values identified in the CRA and actions to manage those values.	Completed and ongoing

TASMANIAN REGIONAL FOREST AGREEMENT

ACRONYMS

ABS	Australian Bureau of Statistics
AFFA	Agriculture, Fisheries and Forestry Australia
AFS	Australian Forestry Standard
ANZECC	Australian and New Zealand Environment and Conservation Council
CA	Conservation Areas
CAR	Comprehensive, Adequate and Representative
CARSAG	Comprehensive, Adequate and Representative Scientific Advisory Group
CBS	clearfell, burn and sow
CD	Compact Disc
CGT	Capital Gains Tax
CRA	Comprehensive Regional Assessment
CRC	Cooperative Research Centre
Cwth	Commonwealth
DISR	Department of Industry, Science and Resources
DPAC	Department of Premier and Cabinet
DPIWE	Department of Primary Industries. Water and Environment
DSD	Department of State Development
EMS	Environmental Management System
EPBC	Environment Protection and Biodiversity Conservation
ESFM	Ecologically Sustainable Forest Management
ESP	Endangered Species Protection
FAFPESC	Forest and Forest Products Employment Skills Company
FFIC	Forest and Forest Industry Council
FISAP	Forest Industry Structural Adjustment Package
FPB	Forest Practices Board
FT	Forestry Tasmania
FR	Forest Reserves
FWPRDC	Forest and Wood Products Research and Development Corporation
GIFT	Geographical Information of Forestry Tasmania
GIS	Geographic Information System
GMO	GMO Renewable Resources (business name)
HEC	Hydro-Electric Commission
IBRA	Interim Biogeographic Regionalisation for Australia
ISO	International Standards Organisation
<i>JANIS Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-Committee</i>	
KVP	Kortas Veneer and Plywood
LTER	Long Term Ecological Research
LVL	Laminated Veneer Lumber
MCFFA	Ministerial Council on Forestry, Fisheries and Aquaculture
MDC	Management Decision Classification
NCC	National Competition (Policy)
NFPS	National Forest Policy Statement
NHT	Natural Heritage Trust
NP	National Parks
NRA	Nature Recreation Areas
NRM	Natural Resource Management
OSB	Orientated Strand Board
PFE	Permanent Forest Estate (Policy)
PFRP	Private Forest Reserves Program
PFT	Private Forests Tasmania
PLUC	Public Land Use Commission
R&D	Research and Development
RFA	Regional Forest Agreement

RPDC	Resource Planning and Development Commission
RR	Regional Reserves
SR	State Reserves
TAFE	Technical and Further Education
TASVEG	Tasmanian Vegetation Management Strategy
TCT	Tasmanian Conservation Trust
TFGA	Tasmanian Farmers and Graziers Association
TIGER	State funded database with online search-and-retrieval system
TWDC	Tasmanian Wood Design Collection
WAPIS	Wood and Paper Industry Strategy

REPORT ON RFA COMMITMENTS AND MILESTONES

Introduction of Legislation

22. The Commonwealth undertakes to use its best endeavours to secure the enactment of legislation which includes provisions to the effect that where a Regional Forest Agreement is in force:
- (a) no controls may be imposed under the *Export Control Act 1982* (Cwth), or under any legislation enacted by the Commonwealth Parliament for a similar purpose, upon the export from the region of which the Agreement was made of woodchips or unprocessed wood; and
 - (b) the following Commonwealth legislative provisions do not apply to Forestry Operations on land under which the Agreement may be used for such operations:
 - (i) the *Australian Heritage Commission Act 1975*, s.30;
 - (ii) the *Environment Protection (Impact of Proposals) Act 1974*, s.11;
 - (iii) the Administrative Procedures approved under the *Environment Protection (Impact of Proposals) Act 1974* s.6; and
 - (iv) the *World Heritage Properties Conservation Act 1983*, s.6.

Commitments (a) and (b) of Clause 22 have been achieved through the following:

- (a) The *Export Control (Regional Forest Agreements) Regulations 1997* provided that, as an RFA came into force, all export controls on woodchips and other processed wood from that RFA region (except that sourced from plantations) were lifted.

In relation to plantation-sourced material, under amendments to the *Export Control (Unprocessed Wood) Regulations 1986*, the requirement for export licences does not apply in Tasmania, since a code of forest practice for plantation management satisfactorily protects environment and heritage values.

- (b) The listed Commonwealth environmental Acts, other than the *Australian Heritage Commission Act 1975* Section 30, have been repealed and replaced by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 30 of the *Australian Heritage Commission Act* applies only to actions by the Commonwealth or a Commonwealth agency. It does not apply to decisions or approvals under the EPBC Act. In the absence of any need for Commonwealth export approval, there is little likelihood of section 30 applying in relation to RFA forestry operations. Further, the Australian Heritage Council (Consequential and Transitional Provisions) Bill 2000 which included provisions repealing the *Australian Heritage Commission Act*, was not passed due to Parliament being prorogued in November 2001.

The exemptions provided in this sub-clause are preserved in Section 38 of the EPBC Act, which provides that a person may undertake RFA forestry operations without approval under the EPBC Act if they are undertaken in accordance with an RFA. Limitations to this provision are outlined in Section 42 of the EPBC Act.

23. The Commonwealth undertakes to:

- (a) prepare a policy outline of such legislation, and circulate that outline to all States which have regions covered by the *Export Control (Hardwood Wood Chips) (1996) Regulations* (Cwth), by 31 December 1997; and
- (b) introduce such legislation into the Parliament of the Commonwealth by 30 June 1998.

Milestones (a) and (c) of Clause 23 were met as detailed below:

- (a) The Commonwealth released a policy paper outlining the proposed legislation in December 1997. The paper, *Commonwealth Legislation to Complement Regional Forest Agreements*, was circulated to all States and Territories as well as to a large number of stakeholders, including industry participants, industry associations and conservation groups. The paper set out the basis of the proposed legislation to support RFAs and called for submissions by 31 January 1998. Commonwealth officials discussed the proposal with industry and conservation groups in Sydney, Melbourne and Canberra. Submissions and views expressed in the consultations were considered in finalising the Bill.
- (c) The Regional Forest Agreements Bill was introduced into Parliament on three occasions since 1998. It first lapsed when Parliament was prorogued in 1998; had a number of amendments proposed by the Senate rejected by the House of Representatives; and was passed in the House in August 2001 but was not addressed by the Senate before the previous Parliament was prorogued in November 2001. The Regional Forest Agreements Bill is currently listed for the autumn 2002 sitting of Parliament.

Action to Establish and Manage Reserves

24. The State undertakes to

- (a) manage the areas in the Comprehensive, Adequate and Representative (CAR) Reserve System identified in Attachment 6, with the exception of Commonwealth owned or leased land, on the basis outlined in that Attachment and in accordance with the relevant objectives set out in Attachment 7;

The *Regional Forest Agreement (Land Classification) Act 1998* was passed by both Houses of the Tasmanian Parliament in 1998 and the Act proclaimed on 18 December 1998. The Act incorporated the objectives set out in Attachment 7 into the *National Parks and Wildlife Act 1970* and the *Forestry Act 1920*, as appropriate (except for “Aboriginal Reserve”, which category was merged with State Reserve).

Proclaimed reserves are being managed in accordance with those objectives.

- (b) where any new reserves are to be of a category specified in Attachment 7 which category is provided for in existing legislation, proclaim such new reserves by 31 December 1998;

Categories of reserves that were provided for in existing legislation at the time of signing of the RFA were National Parks, State Reserves, Nature Reserves, Historic Sites, Aboriginal Sites, Game Reserves, Wildlife Sanctuaries, Muttonbird Reserves, Private Reserves and Forest Reserves. The *Regional Forest Agreement (Land Classification) Act 1998* was passed by both Houses of the Tasmanian Parliament in 1998 and the Act proclaimed on 18 December 1998. On this day the new Forest Reserves (Attach.6, table 1.3) were proclaimed. New National Parks (Attach.6, table 1.1) and State Reserves

(Attach. 6, table 1.2) were proclaimed on 30 April 1999. The delay in proclamation of these changes was due to the need to draft new regulations under the *National Parks and Wildlife Act 1970* to incorporate the new reserve classification system.

Requirements for this milestone have been completed.

See the report on Attachment 6 for details on these reserves.

- (c) Parliament to establish those categories of the revised public land classification system specified in Attachment 7 which are not already by 31 December 1998 introduce legislation into the Tasmanian provided for by existing legislation and use its best endeavours to secure the enactment of the legislation introduced; and

Both Houses of the Tasmanian Parliament passed the Regional Forest Agreement (Land Classification) Act 1998 in December 1998. The Act amended the *National Parks and Wildlife Act 1970* to establish the new reserve categories of Conservation Area, Nature Recreation Area and Regional Reserve. The amendments to the *National Parks and Wildlife Act* commenced on 30 April 1999. The Act also amended the *Crown Lands Act 1976* to provide for a single new reserve category under that Act of Public Reserve. This provision commenced on 31 December 2001.

All necessary legislation has been enacted to meet this milestone.

- (d) within 3 months after the commencement of the legislation referred to in sub-clause (c) above, where any new reserves are to be included in a category specified in Attachment 7 which is not already provided for by existing legislation, proclaim such new reserves.

This commitment has been met by the creation of the new reserve categories detailed below.

Categories of reserves that were not provided for in legislation existing at the time of signing of the RFA were Nature Recreation Areas, Conservation Areas, Regional Reserves and Public Reserves. The Nature Recreation Areas (Attach.6, table 1.4), new Conservation Areas (Attach.6, table 1.5) and Regional Reserves (Attach.6, table 1.6) were proclaimed on 30 April 1999, the same day as the sections of the Act that created the new reserve categories were proclaimed. See the report of Attachment 6 for details of these reserves.

The Tasmanian Government referred the required areas to the Public Land Use Commission for determining appropriate reserve categories (Attach.6, tables 1.7 and 1.8) to the Resource Planning and Development Commission. The final recommendations, made after following extensive public consultation were received on 12 May 1999. All, except one, of these reserves were proclaimed in accordance with those recommendations on 27 December 2000 (See Attachment 6).

National Estate

- 26. The Parties agree to the management of National Estate Values as set out in Attachment 1.

This commitment has been met and management is ongoing (see response to Attach. 1).

Threatened Species and Communities

32. Where threatened species are listed under the *Threatened Species Protection Act 1995* (Tas) and the *Endangered Species Protection Act 1992* (Cwth) any new or revised Recovery Plans will be jointly prepared and funded and implemented cooperatively by the Parties to meet the requirements of both Acts.

This commitment has been met through ongoing cooperation in the development and implementation of the following Recovery Plans.

Since November 1997, 12 Recovery Plans have been prepared, of which one was updated (Tasmanian Giant Freshwater Lobster) and one not adopted (*Caladenia caudata*) for use in Tasmania. Through joint funding arrangements, the remainder are being implemented by Tasmania. In cases where the species cross State boundaries, funds have been made available both to and by other States and the Commonwealth to implement recovery plans. The orchid *Caladenia caudata* is part of a taxonomic review of orchids that may change its conservation status.

The recovery plans published during the review period were:

Table 1 – Single Species Recovery Plans

<u>Species</u>	<u>Comments</u>
<i>Barbarea australis</i> (1999)	
<i>Tetratheca gunnii</i> (1999)	
<i>Epacris stuartii</i> (1999)	
<i>Phebalium davesii</i> (July 1997)	
<i>Caladenia caudata</i> (Feb1997)	Not adopted due to taxonomic reasons
Ptunarra Brown Butterfly (1999)	
Pedra Branca Skink (2000)	
Tasmanian Giant Freshwater Lobster (1997)	Superseded by 2000 version
Tasmanian Giant Freshwater Lobster (2000)	
Orange-bellied Parrot (1998)	
Swift Parrot (2000)	
Wedge-tailed Eagle (1999)	
Spotted Handfish (1998)	

33. The Parties will seek to improve outcomes of Recovery Plans for species listed under the *Threatened Species Protection Act 1995* (Tas) or the *Endangered Species Protection Act 1992* (Cwth) by developing multiple species Recovery Plans where appropriate.

This commitment has been met through the State and Commonwealth commitment to developing cost-efficient ways of recovering threatened species. Species were considered for multiple-species recovery plans where they have some commonality, including:

- Species of the same genus, family or other group;
- Species occupying similar habitat types; and

- Species which occupy the same habitat location.

During the review period, eight multiple-species recovery plans were prepared and all but one are being implemented. The exception was the Threatened Orchids Recovery Plan, which was not adopted by Tasmania because the taxonomy of the Orchids in Tasmania is being reviewed. This may change the conservation status of some species.

The multiple-species recovery plans published during the review period were:

Table 2 – Multiple Species Recovery Plans

Multiple Species	Comments
Lowland <i>Euphrasias</i> (1999)	
Tasmanian Forest <i>Epacrids</i> (1997)	
Tasmanian Native Grasslands (1999)	Recovery plan covers habitat of RFA priority species that are both State- and Commonwealth-listed
Selected forest-associated plants (includes <i>Acacia axillaris</i> , <i>Asplenium hookerianum</i> , <i>Callitris oblonga oblonga</i> , <i>Glycine latrobeana</i> , <i>Lasiopetalum micranthum</i> , <i>Pultenaea selaginoides</i> , <i>Spyridium microphyllum</i> (now <i>S. lawrencii</i>), <i>S. obcordatum</i> , <i>Stenathemum pimeleoides</i> , <i>Xanthorrhoea bracteata</i>) (1998)	
<i>Eucalyptus ovata</i> / <i>Callitris oblonga</i> (1999)	Superseded by 2000 version
<i>Eucalyptus ovata</i> / <i>Callitris oblonga</i> (2000)	
Burrowing Crayfish Group (2000)	
Threatened Orchids in Tasmanian Forests (Feb 1997)	Not adopted due to taxonomic reasons
Pedder, Swan, Clarence, Swamp Saddles <i>Galaxias</i> (1999)	

34. Where threatened Forest Communities restricted to Tasmania are listed under the *Endangered Species Protection Act 1992* (Cwth), any new National Recovery Plans will be prepared jointly by both Parties. The Commonwealth will also continue to consult with the State on the preparation of Threat Abatement Plans for relevant key threatening processes.

This commitment is being met through the ongoing consultation and cooperation demonstrated by both Parties.

To date, no threatened forest communities are listed under the *Environment Protection and Biodiversity Conservation Act 1999* (or its predecessor the *Endangered Species Protection Act 1992*). A recovery plan for the *Eucalyptus ovata* – *Callitris oblonga* forest community has been prepared jointly by the Parties and is being implemented.

The State and Commonwealth are consulting on key threatening processes that affect forest communities and species. The Commonwealth Minister for Environment and Heritage has gazetted, under the *Environment Protection and Biodiversity Conservation Act 1999*, the list of rare and threatened forest communities identified in the Tasmanian Comprehensive Regional Assessment report for consideration for listing under the *Environment Protection and Biodiversity Conservation Act 1999*.

35. Where a State Recovery Plan for a nationally listed species restricted to Tasmania meets the Requirements of the *Endangered Species Protection Act 1992* (Cwth) the Commonwealth intends to adopt the State Recovery Plan under section 46 of that Act.

This commitment has been met as the Commonwealth adopted twelve Recovery Plans for species endemic to Tasmania during the review period.

Twelve recovery plans for species and groups of species endemic to Tasmania were either produced during the review period or adopted by the Commonwealth during the review period:

Table 3 – State Recovery Plans

Species	Prepared during review period and adopted at Commonwealth Level	Prepared before review period but adopted by Commonwealth during review period
<i>Spyridium obcordatum</i> (1991)	-	Yes (ESP1997/EPBC2000)
<i>Ranunculus prasinus</i> (1991)	-	Yes (ESP1997/EPBC2000)
Lowland Euphrasias (1999)	Yes (ESP2000/EPBC2000)	-
<i>Barbarea australis</i> (1999)	Yes (ESP1999/EPBC2000)	-
<i>Tetralthea gunnii</i> (1999)	Yes (EPBC2001)	-
<i>Epacris stuartii</i> (1999)	Yes (EPBC2001)	-
Tas Forest Epacrids (1997)	Yes (EPBC2001)	-
<i>Phebalium davesii</i> (1997)	Yes (EPBC2001)	-
Forty-Spotted Pardalote (1991)	-	Yes (Administrative approval 1997 ESP + plan currently being updated)
Wedge-tailed Eagle(2000)	Yes (ESP2000/EPBC2000)	-
Spotted Handfish (2000)	Yes (ESP2000/EPBC2001)	-
Pedder, Swan, Clarence, Swamp Saddled Galaxias (2000)	Yes (ESP2000/EPBC2001)	-
Burrowing Crayfish Group (2000)	Yes (ESP2000/EPBC2001)	-

ESP = *Endangered Species Protection Act*

EPBC = *Environment Protection and Biodiversity Conservation Act*

36. Where threatened species, threatened Forest Communities or threatening processes extend beyond Tasmania, the Parties agree where possible to jointly prepare with other relevant governments:

- National Recovery Plans for species or forest communities; and
- Threat Abatement Plans for threatening processes listed under the *Endangered Species Protection Act 1992* (Cwth)

and where available, the Commonwealth intends to incorporate any relevant State Recovery Plan or threat abatement plan prepared pursuant to the *Threatened Species Protection Act 1995* (Tas) as the Tasmanian component of the National Recovery Plan.

This commitment has been met as detailed below.

The State has taken a lead in developing recovery plans for the Swift Parrot (*Lathamus discolor*) and Orange-bellied Parrot (*Neophema chrysogaster*) in consultation with other State Governments and the Commonwealth. Tasmania has participated in developing a national Threat Abatement Plan for Root-rot Fungus *Phytophthora cinnamomi*.

37. The Parties, recognising that priorities can change in the light of new information, will continue to consult on the priorities for:
- listing threatened species, forest communities, and threatening processes; and
 - the preparation of all Recovery Plans and Threat Abatement Plans relevant to this Agreement;

The State and Commonwealth continue to consult on the listing of threatened species on the national lists. Species listed under the Tasmanian *Threatened Species Protection Act 1995* have been nominated either directly or through the ANZECC listing process.

Reviews of the Schedules of the State and Commonwealth Acts may change priorities. Tasmania completely reviewed the State lists in 2000, and monitors both lists to ensure conformity.

The process for dealing with recovery plans and threat abatement plans is that they are prepared with a time-frame of three to five years and then reviewed and re-written. The plans have sufficient flexibility for actions to be changed in the light of new information.

World Heritage

39. The Parties agree to jointly participate in the further World Heritage assessment of the relevant Australia-wide themes, specified in Table 1.7 of the World Heritage Report, commencing by the 30th June 1998.

This milestone has been completed as required.

Tasmania and the Commonwealth participated on a national expert panel to assess the proposed World Heritage sub-theme of Eucalypt-dominated vegetation, and Tasmania provided comment to the draft report. The final report was produced in December 1999; it can be accessed on the web at: <http://www.rfa.gov.au>

40. The Commonwealth agrees that it will give full consideration to the potential social and economic consequences of any World Heritage Nomination of places in Tasmania and that such nomination will only occur after the fullest consultation and with the agreement of the State.

There has been no official World Heritage nomination within the review period.

41. The Parties agree that any World Heritage Nominations of any part of the Forest Estate will be from areas within the Dedicated Reserve elements of the CAR Reserve System.

There has been no official World Heritage nomination within the review period.

42. The Parties agree:

- that before any World Heritage Nomination of any part of the Forest Estate is made all necessary management arrangements, including joint policy coordination arrangements and a statutory management plan under the relevant Tasmanian legislation will be in place; and
- that prior to any World Heritage all related funding issues will be resolved to the satisfaction of both Parties.

There has been no official World Heritage nomination within the review period.

Monitoring this Agreement

44. This Agreement establishes milestones for the completion of agreed undertakings. These milestones are specified in Attachment 3 and the Parties agree to provide each other annually for the first five years and then as they fall due and as part of the 5 yearly reviews described in clause 45 with written reports detailing the achievement of these milestones using an appropriate reporting mechanism.

Both Tasmania and the Commonwealth have completed milestone achievement reports for the years 1998, 1999, 2000 and 2001. These reports are available on the Internet at www.dpac.tas.gov.au/divisions/policy/rfa and www.rfa.gov.au.

Five-Yearly Review

45. A review of the performance of this Agreement is to be undertaken during the last year of each five-year period to assess the progress of the Agreement against its specified milestones and commitments:

The review is to be conducted:

- (i) by a person or body appointed by the Parties; and
- (ii) in accordance with agreed priorities, procedures and funding arrangements which are to be agreed no later than six months before the end of each five year period of this Agreement.

The review will also:

- (iii) invite and take account of public comments;
- (iv) invite and take account of the Sustainability Indicators including trends;
- (v) be sufficient to satisfy the requirements for a State of the Forests Report as required by Section 59D of the *Forestry Act 1920* (Tas);
- (vi) be completed within three months of its commencement; and
- (vii) develop a report detailing the review process and its findings.

The Commonwealth and Tasmanian Governments have signed a *Scoping Agreement for the Five-Year Review of Progress with Implementation of the RFA*. This agreement sets

out the arrangements for the conduct of the review, including principles, timeframe, public consultation, governance and funding. It is available at the following web-site: www.dpac.tas.gov.au/divisions/policy/rfa. These arrangements are consistent with the process specified in the RFA. The Governments have requested the Resource Planning and Development Commission to undertake the review.

The review will take place over three months, probably starting in July 2002. The present report will be included in the documentation for the review team.

The Comprehensive, Adequate and Representative (CAR) Reserve System

48. The Parties agree that the CAR Reserve System is to be established for the purpose of ensuring the long-term conservation and protection of the values defined by the JANIS Reserve Criteria and the land required to achieve this specified in Attachments 6 and 8.

This commitment has been completed (see responses to Clause 24 and Attachments 6 and 8).

Public Land

- 51 The Parties agree that they will each take appropriate action:
- To establish the CAR Reserve System on the Public Land described in Attachment 6 and, where appropriate, shown in Map 1; and
 - To manage that system to maintain the CAR Values of that land in a regional context consistent with the management objectives for each element of the reserve system as specified in Attachment 7.

Commitment completed with management ongoing (see response to Clause 24 (a)).

- 52 The State agrees that it will consult with the Commonwealth prior to rejecting any recommendations made by the Tasmanian Public Land Use Commission in regard to the tenure to be applied to those areas listed in sections 1.7 and 1.8 of Attachment 6.

The recommendations of the Resource Planning and Development Commission (RPDC), formerly the Public Land Use Commission, were presented to the Tasmanian Government in *RPDC Inquiry into Areas to be Reserved under the Tasmanian-Commonwealth Regional Forest Agreement: CAR Reserves May 1999*. The Tasmanian Cabinet approved in full the recommendations in regard to tenure for all new reserves listed in Attachment 6, sections 1.7 and 1.8.

The resulting reserves were proclaimed on 27 December 2000, except for Darling Range on Flinders Island, which was included within a separate RPDC inquiry for Crown Land areas on Flinders Island. Final recommendations from this Inquiry have been provided to the Tasmanian Government for consideration.

This commitment was met as no recommendations were rejected by the State resulting in a requirement to consult the Commonwealth.

53. The Parties intend that all Deferred Forest Lands not included in the formal CAR Reserve System, other than those specified in Attachment 6, will be removed from the Register of Deferred Forest Land and added to the Register of Multiple-Use Forest Land.

The *Regional Forest Agreement (Land Classification) Act 1998* was passed by both Houses of the Tasmanian Parliament in 1998. The Act revoked the provisions in the *Forestry Act 1920* that created the Register of Deferred Forest Lands. Section 7 of the Act identified areas that were previously on that Register and not included in the formal CAR reserve system and added them to the register of multiple-use forest land. These sections of the Act were proclaimed on 18 December 1998. Some areas that were previously on the Register of Deferred Forest Land that were not identified for inclusion in the CAR reserve system were not included in the register of multiple-use forest land, as they had no forestry potential; these areas are now Crown Land.

This commitment has been met as all deferred forest land of forestry potential has been added to the register of multiple-use forest land.

54. The Commonwealth has requested and the State has agreed to postpone any harvesting in the Savage River Pipeline corridor. Accordingly the Parties agree:
- to postpone any harvesting and associated forest roading in the area shown on Map 1;
 - that this area will continue to be included in the calculation of sustainable yield of special species timber; and,
 - that uses other than timber production will continue to be managed in accordance with clause 78 of the Agreement.

Harvesting and associated forest roading in the designated Savage River Pipeline corridor have been postponed as required by the RFA.

The volume of deep red myrtle (*Nothofagus cunninghamii*) in the corridor has been included in the calculation of sustainable yield of special-species timber.

Uses other than timber production are continuing to be managed in accordance with Clause 78.

55. The Parties agree that:
- (a) during the first four years of this Agreement, the State will review its resource estimates for deep red myrtle available for supply to the furniture and craft industries, in terms of volume, quality and economic accessibility, and will publish a report of the findings;
 - (b) the State will arrange for the review described at (a) above to be independently audited by an auditor agreed by the Parties, and for a report by the auditor to be published;
 - (c) the further management of the Savage River Pipeline corridor will be considered by the State prior to the first five yearly review of this Agreement in the light of the report and the audit described at subclauses (a) and (b) above;
 - (d) if the resource review and audit confirm the availability, outside the Savage River Pipeline corridor, of adequate resource of acceptable quality and economic accessibility, to maintain a supply of at least 4,500 cubic metres per year of deep red myrtle, for the remainder of the term of the Agreement, then harvesting and associated forest roading within the area will be further postponed for that period; and

- (e) in the alternative, the area will be further considered by the State to ensure the availability of deep red myrtle for the period.

The State has reviewed its resource estimates for deep red myrtle and completed its report. An independent auditor agreed to by the Parties, Professor Ian Ferguson of Melbourne University, audited the report. The State is considering the future management of the Savage River Pipeline corridor in light of the review of the resource estimates for deep red myrtle. The review and the independent audit will be published and made available to the RFA Review Team.

56. The Commonwealth agrees that the Commonwealth owned or leased land specified in Attachment 6 will form part of the CAR Reserve System as Informal Reserves. The Commonwealth further agrees that those areas of the Buckland Military Training Area leased by the Commonwealth from the State and not required for the CAR Reserve System will remain available to the State for timber production purposes, including plantation development.

The Buckland Military Training Area comprises around 2 880 hectares of freehold land owned by the Commonwealth and 20 600 hectares of Crown land leased from the State. Between 1997 and 2001, Forestry Tasmania harvested 830 hectares of the forest of the Buckland Military Training Area outside the CAR Reserve System and then regenerated 788 hectares to native forest, and converted 42 hectares to eucalypt plantation.

This commitment has been met and implementation is ongoing.

57. The Parties agree that any changes to those elements of the CAR Reserve System in Informal Reserves:
- will only occur in Accordance with this Agreement; and
 - will maintain the level of protection identified at the regional scale; and
 - That information on all such changes will be publicly available and provided to the person or body conducting the five-yearly review described in clause 45 for incorporation into the review process.

The Informal Reserve boundaries were finalised in 1999 in accordance with RFA requirements following field checking and verification of the existence and extent of identified CAR values. New informal reserves on State forest were incorporated in Forestry Tasmania's Management Decision Classification (MDC) system. Minor changes to the boundaries have since been made for operational or conservation reasons. Each proposed change was evaluated for the level of protection it afforded identified values at the regional scale. Approved changes were made in accordance with the requirements detailed in Forestry Tasmania's MDC Manual. MDC maps are available for public viewing through Forestry District offices and are published in District Forest Management Plans. See also Attachment 6, clause 17.

New informal reserves on Commonwealth land have been incorporated within management plans for these areas. See also Attachment 6, clause 20.

Table 4 indicates the area of informal reserves by forest community in 1999 following implementation of RFA requirements and compares this with the area of informal

reserves at 30 June 2001. The total area of forest within informal reserves has increased by over 3,000 hectares since 1999, with most forest types also increasing in area within the informal reserve system. While 10 forest communities recorded a slight decrease in informal reservation, eight of these were due to informal reserve areas being incorporated within formal reserves and/or being replaced by other new informal reserves. Three forest communities (*Eucalyptus sieberi* on granite, Huon Pine, Thamnian rainforest on less fertile sites) recorded a decrease in informal reservation that was not offset by additional reservation in either formal or informal reserves since 1999. All of these communities remain reserved well in excess of JANIS targets. The decreases were the result of changes from State forest to other public land tenures where the MDC system does not apply. Of these three forest types, Huon pine forest has recorded a slight decrease (1%) in overall reservation status from that proposed in the RFA in 1997, while the other two have maintained or increased the total area within reserves since the 1997 proposals (see Attachment 6, Table 1).

Table 4: Changes to informal reserves on public land, by forest community, since the RFA informal reserves were fully implemented in 1999.

Forest Community	Changes to Informal Reserves Since 1999					F. June 2001 Informal Reserves	G. Percent of 1999 Informal Reserves reserved in 2001, including new Informal Reserves*
	A. Informal reserves at 1999	B. Added to Formal Reserve System	C. Converted to Non-Reserved Status	D. New Informal Reserves	E. No Change		
Coastal E. amygdalina dry sclerophyll forest	8,060	270	20	280	7,760	8,040	103%
E. amygdalina forest on dolerite	7,280	0	30	90	7,250	7,340	101%
Inland E. amygdalina forest	680	270	0	0	410	410	100%
E. amygdalina forest on sandstone	970	0	0	0	970	970	100%
E. viminalis/E. ovata/E. amygdalina/E. obliqua damp sclerophyll forest	1,980	0	20	350	1,960	2,310	117%
Grassy E. globulus forest	260	70	0	0	190	190	100%
E. pulchella - E. globulus - E. viminalis grassy shrubby dry sclerophyll forest	10,920	60	40	100	10,810	10,910	100%
E. viminalis grassy forest	380	0	0	0	380	380	100%
E. viminalis and/or E. globulus coastal shrubby forest on Holocene sand	30	0	0	0	30	30	100%
E. tenuiramis on granite	70	0	0	0	70	70	100%
E. tenuiramis on dolerite	620	0	0	20	610	630	102%
Inland E. tenuiramis forest	720	40	0	0	670	670	100%
E. sieberi on granite	1,770	0	40	10	1,720	1,730	98%
E. sieberi on other substrates	2,960	0	10	40	2,950	2,990	101%
Dry E. obliqua forest	12,580	60	270	370	12,240	12,620	101%
Dry E. nitida forest	2,360	0	10	10	2,350	2,360	100%
Dry E. delegatensis forest	19,790	0	120	740	19,670	20,410	103%
E. pauciflora on Jurassic dolerite	2,280	0	0	0	2,280	2,280	100%
E. pauciflora on sediments	1,100	0	0	0	1,100	1,110	100%
Furneaux E. nitida forest	260	0	0	0	260	260	100%
E. ovata/E. viminalis forest	130	10	0	0	120	120	100%
E. rodwayi forest	240	0	0	0	240	240	101%
E. risdonii forest	10	10	0	0	10	10	100%
Tall E. obliqua forest	31,740	0	270	1,070	31,460	32,530	103%
E. regnans forest	6,070	0	60	330	6,000	6,340	104%
Tall E. nitida forest	570	0	0	10	570	570	101%
Tall E. delegatensis forest	18,780	0	360	1,170	18,420	19,590	104%
E. brookeriana wet forest	80	0	0	10	80	90	109%
King Island E. globulus/E. brookeriana/E. viminalis forest	330	0	0	0	330	330	100%

Wet E. viminalis forest on basalt	90	0	10	20	80	100	105%
E. coccifera dry forest	3,270	0	0	240	3,260	3,500	107%
E. subcrenulata forest	770	0	10	140	760	890	117%
Allocasuarina verticillata	40	0	0	0	40	40	100%
Notelaea ligustrina and/or Pomaderris apetala forest	0	0	0	0	0	0	100%
Callitris rhomboidea forests	100	0	0	0	100	100	101%
Banksia serrata woodland	0	0	0	0	0	0	100%
Silver wattle (Acacia dealbata) forest	4,820	0	30	330	4,780	5,120	106%
King Billy Pine	330	0	0	0	330	330	100%
Huon Pine	140	0	10	0	130	130	93%
Callidendrous and thamnic rainforest on fertile sites	10,760	80	50	120	10,620	10,740	101%
Thamnic rainforest on less fertile sites	13,280	0	390	260	12,880	13,140	99%
Acacia melanoxylon forest on flats	380	0	0	20	380	400	106%
Acacia melanoxylon forest on rises	620	0	10	30	610	640	103%
Leptospermum sp./Melaleuca squarrosa swamp forest	430	0	0	10	430	440	103%
	168,050	870	1,760	5,770	165,310	171,100	102%
<p>*Column G is the proportion of the 1999 informal reserves that is reserved in 2001, taking account of new informal reserves added post 1999, ie column G includes the area removed from informal reserves that has since been added to formal reserves (column B), plus the area of new informal reserves created since 1999 (column D), plus the area remaining unchanged as informal reserves (column E) – these areas added together are represented as a proportion of the original 1999 area (column A). Note that this calculation has used raw data for the areas and not the rounded data shown elsewhere in the table which has been rounded to the nearest 10 hectares.</p>							

Private Land

58. The Parties reaffirm their commitments made in the National Forest Policy Statement (NFPS) to the conservation and management of the Private Forest Estate and in particular the State reaffirms its commitments:
- to continue to ensure that owners of Private Forest comply with the Forest Practices Code (Tas.) for timber harvesting and regeneration operations;
 - to continue to develop adequate mechanisms to protect State and regional nature conservation and catchment values on Private Land; and
 - to undertake the initiatives specified in Attachments 9, 10 and 11, which are relevant to Private Land.

The *Forest Practices Act 1985* and Forest Practices Code apply equally to public and private land in Tasmania. The reforestation provisions of the Act and Code apply to all State forest and Private Timber Reserves and to other private land where the management objective of the owner is to re-stock the land with trees. Private Timber Reserves constitute about 334 000 hectares, or about a third of the private forest estate. With the remaining two-thirds, harvesting and reforestation must be conducted in accordance with the policy on the Permanent Forest Estate (see Attachment 9).

Mechanisms to encourage the retention of native vegetation on private land are detailed in Attachment 9.8. They include an amendment to the *Forest Practices Act*, a review of the Permanent Forest Estate policy and the facilitation of conservation on private land through incentives, conservation plans and education activities.

Private Forests Tasmania has developed a property-based planning system for farm forestry on private land. Using inventory data that is held by Private Forests Tasmania, GIS (Geographic Information System) and specially designed computer software (Farm Forestry Toolbox), it prepares an individual management plan for each private forest owner. The plan, which includes an initial assessment of natural and cultural values, provides a basis for the preparation of a Forest Practices Plan. The planning approach adopted enables the landowner to take into account regional conservation and catchment values, and identify forest of special conservation significance.

This commitment has been met through ongoing compliance.

See responses to Attachments 9, 10 and 11 for more detail.

59. The Parties recognise the importance of the CAR Reserve System of Environment and Heritage Values on Private Land and the State agrees to implement a process which will facilitate the voluntary participation by private landowners to protect those values specified in Attachment 8.

The Department of Primary Industries, Water and Environment established a Private Forest Reserves Unit in July 1998 to facilitate voluntary participation in a process to establish the system of CAR forest reserves on private land in Tasmania. A Strategic Plan to guide implementation was signed in July 1998, in accordance with Attachment 8.

Further detail is provided in the response to Attachment 8.

Maintaining a Permanent Forest Estate

60. The State agrees to adopt the broad policy framework specified in Attachment 9 which is designed to maintain an extensive and permanent Native Forest Estate and to maintain the sustainability of the total Forest Estate.

The broad policy framework in Attachment 9 has been adopted. Further information is reported against Attachment 9, Clause 11.

64. The State agrees that in providing for Ecologically Sustainable Forest Management (ESFM), its Forest Management Systems will be amended to reflect the undertakings of this Agreement and in particular those undertakings specified in Attachment 10.

Some of the undertakings specified in Attachment 10 are completed while others have had variable progress. Full details are reported against Attachment 10.

Protection of priority species

68. The State agrees to protect Priority Species listed in Attachment 2 (Part A) through the CAR reserve system or by applying relevant management prescriptions.

All of the species listed in Attachment 2 (Part A) that have remained listed under the *Environment Protection and Biodiversity Conservation Act 1999* or the *Threatened Species Protection Act 1995* or are otherwise considered priority species fully protected in the CAR reserve system and / or are subject to management prescriptions. The prescriptions and procedures are outlined in the Forest Practice Board's Threatened Fauna Adviser and in the Forest Practices Botany Manuals. As noted below under clauses 69 and 71, the list of priority species has changed since its inception in 1997, following a review by the Threatened Species Scientific Advisory Committee.

This commitment has been met but will be subject to ongoing review in the light of new information.

69. Prior to the first five- yearly review, the State will where practical assess those species in Attachment 2 (Part B) and determine management requirements in accordance with clause 96 below.

All State-listed species have been reviewed by the Threatened Species Scientific Advisory Committee as part of the *Threatened Species Protection Act 1995* five-yearly review. The Threatened Fauna Adviser, a database, has been reviewed and the equivalent review for flora is well advanced by the relevant agencies prior to referral to the Scientific Advisory Committee. The status of individual species on the list and a draft revised list is given at Appendix 1.

This commitment has been met for fauna species and is well advanced for flora species.

70. The Parties agree that management prescriptions or actions identified in jointly prepared and agreed Recovery Plans or Threat Abatement Plans will be implemented as a matter of priority.

Actions in Recovery Plans given the highest priority are those that will give the best conservation outcomes. In Recovery Plans that are funded through the Natural Heritage Trust Program, they are implemented as a matter of course - and of priority – each year. Recovery Plans implemented through joint funding from the State and Commonwealth are

dependent on the availability of funds. If the Commonwealth funding sought is not provided, or reduced from that indicated in the relevant Recovery Plans, program is scaled down to match available funds and resources.

71. The Parties recognise that Priority Species may change and that new or altered management prescriptions may be needed during the term of this agreement to take account of changes in the status of species, additional information and evolving forest management practices. Alterations in prescriptions will be in accordance with processes described in Clause 96.

The establishment and implementation of the following processes have completed this commitment.

As part of its statutory requirements, the Scientific Advisory Committee constituted under the *Threatened Species Protection Act 1995* has undertaken the five-yearly review of all species, including forest species, listed under the Act. In addition, it has examined and endorsed prescriptions in the Forest Practices Board's Threatened Fauna Adviser, which contains specific prescriptions for all RFA priority fauna species. The Committee has set up a process to deal similarly with RFA priority flora. This mechanism provides an independent check on the maintenance of priority species and relevant prescriptions. It is proposed that, in future RFA reviews, this clause will be dealt with through the same process, together with an evaluation of prescriptions relating to any other identified priority species, including those listed under the *Environment Protection and Biodiversity Conservation Act 1999* but not the *Threatened Species Protection Act*. The process for identifying new priority forest-dwelling species or delisting existing priority species will normally be based on the Scientific Advisory Committee assessment and recommendations for listing (under the *Threatened Species Protection Act* of species accepted for listing under the *Environment Protection and Biodiversity Conservation Act 1999*). The exception is for special species groups or habitat surrogates (eg karst species, hollow-dependent fauna) identified under the Forest Practices Code.

The revised list of priority species is given in Appendix A.

Consultative Mechanisms

72. The Parties recognise that they already have in place a range of processes and instruments which provide for public participation and consultation. The public reporting activities and consultation opportunities provided through these processes are outlined in Attachment 11 and it is agreed that these will continue through the term of this Agreement.

The State continues to implement the existing public reporting and consultative mechanisms relevant to Tasmania's forests as detailed in the response to Attachment 11.

73. The State further agrees that it will also implement the range of reporting and consultative mechanisms specified in Attachment 11.

The State has implemented the range of reporting and consultative mechanisms specified in Attachment 11. Details are provided in the response to Attachment 11.

Employment and Industry Development

74. In recognition of the unique contribution of forest-based industries to the Tasmanian economy, the Parties intend that this Agreement will have the effect of enhancing the future growth and development of Tasmania's industries associated with forests and timber products by the implementation of the RFA Forests - Employment and Industries Development Strategy. The Parties agree to cooperate in implementing the specified actions in that Strategy described in Attachment 12. In particular, future growth and development will be achieved through:
- certainty of resource access to the forest industry;
 - removal by the Commonwealth of the need for export licences for unprocessed wood and woodchips sourced in Tasmania;
 - active encouragement of the development of downstream processing in Tasmania such that the preferred market for growers is within the State;
 - a range of new or enhanced initiatives designed to encourage investment, plantation development, downstream processing, value-adding and jobs growth in Tasmania's forest-based industries;
 - the implementation of new intensive forest management initiatives, including eucalypt and blackwood plantations, and Native Forest thinning, to balance changes in Forest inventory resulting from this Agreement and expand that inventory;
 - security of access to the mining industry by providing defined land tenures as outlined in Attachment 6 which allow for exploration and mining together with the protection of Environment and Heritage Values; and
 - the provision for the development of tourism and recreation opportunities based on Tasmania's environmental advantages.

The Parties have implemented a range of actions to facilitate the Employment and Industry Development Strategy. Substantial progress has been made and this progress is detailed in the response to Attachment 12.

77. The Parties further acknowledge that the new Intensive Forest Management initiatives concluded in this Agreement have been designed to provide for the Tasmanian Forests and Forest Industry Strategy current target from Public Land of a minimum 300,000 cubic metres per year of high quality eucalypt sawlog/veneer log and 10,000 cubic metres per year of blackwood sawlogs.

Forestry Tasmania reviewed the sustainable supply of eucalypt sawlogs and veneer logs after the RFA (*Post-RFA Review of Sustainable High Quality Eucalypt Sawlog Supply from Tasmanian State Forest*, (Forestry Tasmania 1998). The review incorporated the new intensive forest-management initiatives provided for in the RFA. The minimum supply of 300,000 cubic metres per year of high-quality sawlogs has been confirmed by the review, provided the intensive forest-management initiatives are implemented.

Intensive forest management initiatives by Forestry Tasmania during the review period to assist with the above long-term commitment have been implemented and this program is ongoing. The results are reported against Attachment 12.

The progressive gross area of forest plantation in Tasmania is detailed in the report *Sustainability Indicators for Tasmanian Forests* (Indicator 2.1c).

Other Forest Uses

- 79 The Parties recognise subject to clauses 80, 81 and 82 that mineral exploration and mining can occur in those specified parts of the CAR Reserve System which are identified in Attachment 6.

Mineral exploration in Tasmania is permitted in the following areas that fall under the *Mineral Resources Development Act 1995*:

- Crown land (uncommitted);
- Crown land allocated for public purposes but not reserved and reserved Crown land below 15 metres below the surface;
- State forest (if brought back under the *Mineral Resources Development Act 1995*);
- Land vested in electricity authorities;
- Private property; and
- Conservation Areas, Regional Reserves and Nature Recreation Area (only if bought under the *Mineral Resources Development Act* before 7 November 2001 or all, since 7 November 2001, unless excluded by a management plan).

Reserves that were brought back under the *Mineral Resources Development Act 1995* are listed in Attachment 6 of the RFA. Since 7 November 2001, the *Mineral Resources Development Act* applies to all Conservation Areas, Regional Reserves and Nature Recreation Areas, unless their management plans state otherwise.

Mineral exploration in areas within the CAR Reserve System is subject to the Mineral Exploration Code of Practice (Edition 4, 1999).

The State has a Mineral Exploration Working Group that is responsible for investigating matters related to mining or mineral exploration and providing comment on their potential impacts on CAR values (eg. conservation, historical, cultural and other natural values). The members of the group who are scientists with a good understanding of CAR values are from Mineral Resources Tasmania, the Department of Primary Industries, Water and Environment, and Forestry Tasmania.

All proposals for mining activities in areas covered by the CAR Reserve System are accompanied by (minimum) environmental-impact information. This is assessed by the Mineral Exploration Working Group, which make recommendations to Mineral Resources Tasmania where conditions need to be placed on activities to ensure values are not permanently affected adversely and impacts on wilderness values are minimised.

This commitment has been achieved by the implementation of the above processes.

80. The State confirms that mineral exploration in areas covered by the CAR Reserve System will be subject to the Tasmanian Mineral Exploration Code of Practice and that all exploration proposals will be referred to the Mineral Exploration Working Group, who will investigate the potential impact on CAR values and recommend appropriate conditions to protect those values.

During the period under review, mineral exploration in areas covered by the CAR Reserve System, including those areas with high-quality wilderness values, has been subject to the Mineral Exploration Code of Practice. It has been agreed that this code, as far as it relates to CAR Reserves, be maintained as part of the draft Code of Practice for Reserve Management

(see Attachment 10) and that both codes be reviewed on the same five-year cycle. Both review groups will be represented in the next review in about five years time to ensure that clauses relating to the protection of CAR values are common to both codes.

All applications for mineral exploration during the review period have been referred to the Mineral Exploration Working Group for comment and recommendations where applicable.

Compliance auditing of the Mineral Exploration Code of Practice began in 2000/01. During this period there were 11 exploration proposals in CAR Reserves with high-quality wilderness; all were referred to the Mineral Exploration Working Group for comment. The total area disturbed was 1.15 hectares, consisting of sample sites (1 ha) and drill sites (0.15 ha). The sample sites have been rehabilitated and the drill sites will be repaired at the end of the program.

This commitment has been implemented with review of applications for mineral exploration ongoing through the established process.

81. The State will ensure that all proposed mining activities in areas covered by the CAR Reserve System will be subject to environmental impact assessment and environmental management conditions as required by the Environmental Management and *Pollution Control Act 1993* (Tas), the *State Policies and Projects Act 1993* (Tas), and/or the *Mineral Resources Development Act 1995* (Tas).

There have been no mining activities proposed in the CAR Reserve System during this review period.

82. The Parties agree that in relation to those parts of the CAR Reserve System with high quality wilderness values, as identified through the CRA, measures will be taken under State processes to minimise the effects of mineral exploration and mining activities on wilderness values. Rehabilitation of any exploration activity impacts and rehabilitation of any mine site will be in accordance with the provisions of the *Mineral Resources Development Act 1995* (Tas), and the *Environmental Management and Pollution Control Act 1994* (Tas) in so far as any permit conditions are relevant, and will aim both to achieve world's best practice and to return the site to its wilderness condition.

This commitment has been implemented and the requirement is ongoing (see response to Clause 80 above).

Indigenous Issues

83. The State undertakes that it will introduce into State Parliament legislation to replace the *Aboriginal Relics Act 1975* (Tas.). This will occur following formal consultation with the Tasmanian Aboriginal community to ensure the appropriate management of Aboriginal heritage, including the maintenance of traditional and historic sites, uses and values in Tasmania.

Tasmania has not yet introduced legislation to replace the *Aboriginal Relics Act 1975*. However, reform of this legislation remains on the agenda of the current State Government.

In November 1998 a discussion paper was released for public comment. The Government then initiated a further period of consultation with the Aboriginal Community. This process was overtaken by events associated with the Tasmanian Government program to return land to the Aboriginal community, which was given a higher priority.

Subsequently, the consideration in the Commonwealth Parliament of the Aboriginal and Torres Strait Islander Heritage Protection Bill 1998 resulted in a decision to further defer consideration of Tasmanian legislation. The Bill has been subject to extensive consultation with indigenous people as well as State and Territory governments, the mining industry and farmers.

As the Bill sets standards that State legislation would be required to achieve for Commonwealth accreditation of State laws, it has been decided to await the outcome of the Commonwealth Parliament's consideration of the draft Bill.

This commitment therefore has not been achieved and is deferred pending review of Commonwealth legislation and further indigenous consultation.

Competition Principles

- 87 The State confirms its commitments under the Competition Principles Agreement, which provides that legislation relevant to the allocation and pricing of hardwood logs from State forests, will be reviewed before the 31 December 1999. Competitive neutrality principles will be taken into account in any changes following the review.

The *Forestry Act 1920* has been reviewed to comply with National Competition Policy and the amendments passed by State Parliament in 1999. All anti-competitive or potentially anti-competitive provisions were removed from the Act. These amendments came into effect on 1 January 2000. This milestone has been completed.

Research

89. The parties agree to make publicly available, wherever practical, research reports relevant to the substance of this agreement.

All research and other reports produced to satisfy the substance of the RFA are publicly available, as is documentation of recommendations by the Threatened Species Scientific Advisory Committee. Research reports from relevant agencies are generally listed in the annual reports of those agencies.

Data Use and Access

- 90 The Parties recognise that the implementation and monitoring of this Agreement depends on appropriate mutual access to and accreditation of relevant information owned and held by each of them and have agreed to provide such access and accreditation for the term of this Agreement in accordance with the practices and procedures specified in Attachment 14.

This commitment has been met and is reported against Attachment 14.

Sustainability Indicators

- 91 The Parties agree to develop and establish by the first of December 1999 an appropriate, practical and cost effective set of Sustainability Indicators which:
- have regard to the Montreal Process Criteria (as amended from time to time) the current form of which is specified in Attachment 4 and take account of the processes and regional framework of indicators developed by the Montreal Process Implementation Group;
 - assess the criteria for sustainable forest management for the whole of the Tasmania Region;
 - take account of the results of the Warra Case Study to develop effective regional indicators;
 - include appropriate social and economic indicators in the development of those indicators the Parties agree to;
 - determine the frequency of monitoring and reporting;
 - provide for public consultation and to take account of public comments; and
 - develop efficient linkages to the ongoing work being carried out on the Commonwealth and Tasmanian State of the Forests and State of the Environment Reports to avoid duplication of effort.

Tasmania and the Commonwealth released a joint discussion paper for public comment on 17 November 1999 that set out the draft sustainability indicators to be reported against in 2002 as part of the five yearly review of the RFA. The final document, “Sustainability indicators for the first review in 2002”, agreed by the State and the Commonwealth, was released in June 2000. A copy of the final report is available at:

www.dpac.tas.gov.au/divisions/policy/rfa/rfa2002.pdf

The *Sustainability Indicators for Tasmanian Forests* report has also been released to inform the 2002 five-yearly review. Linkages have been established to the Tasmanian *State of the Forests Report* that will be based on information prepared for this review. The data will be used in the National and Tasmanian *State of the Environment* reports and the National *State of the Forests Report*. Through these linkages, Tasmania will also meet its reporting commitments under the Montreal Process. It is intended, that future reporting on the implementation of the Tasmanian sustainability indicators will be on a five-yearly cycle to meet RFA review and State of the Forests reporting requirements.

Forest Management

93. The State agrees, within five years of the date of this Agreement, to further develop its Forest Management Systems and processes through the development and implementation of environmental management systems in accordance with the principles specified in Attachment 5 and acknowledges that its objective for State Forest is system certification comparable with the ISO 14000 series.

Forestry Tasmania began the further development and implementation of its Environmental Management System (EMS) in 1999. The system was progressively implemented consistent with the requirements of International Standards Organisation’s Standard for Environmental Management Systems ISO 14001. The EMS was externally audited and certified to the ISO 14001 standard in November 2001.

The EMS meets the principles specified in Attachment 5. It includes:

- Forestry Tasmania's Environmental Policy;
- the identification of environmental risks (aspects) and mechanisms implemented to ensure that potential impacts are managed;
- the identification of legislative requirements;
- the establishment of environmental objectives and targets;
- operational plans and mechanisms for dealing with external concerns and community feedback; and
- management reviews of the system to ensure that it remains appropriate and allows for continuous improvement.

Some private forestry companies have either obtained or are seeking to develop EMSs to ISO 14001 certification for all or part of their operations.

The reserve system on State forest is covered by the Forestry Tasmania EMS. There is no current initiative to develop an EMS for management of other conservation reserves.

94. The State agrees to publish, and make publicly available, its:
- annual compliance audits of the implementation of the *Forest Practices Act 1985* (Tas.), Forest Practices Code and its code of reserve management specified in Attachment 10.

The Forest Practices Board, in accordance with s.4 of the *Forest Practices Act 1985*, undertakes an independent audit of a sample of forest practices plans on private property and State forest. The audit uses a minimum 15 percent random sample, stratified to ensure the activities of all forestry organisations and forest practices officers are sampled. The audit covers forest practices plans for forest harvesting, roading, quarrying and site preparation at various stages of completion. In addition to assessing operational performance, the audit checks the standard of the plan, including all assessments and procedures required by the forest practices system. The audit covers 120 factors within the general areas of roads, bridges, harvesting, snig tracks, landings, stream reserves, Forest Practices Plan, consultation with local government, flora, fauna, geomorphology, cultural heritage and visual landscape.

In addition to the formal audit, the Board investigates all alleged breaches of the *Forest Practices Act*. A report on these investigations and the full audit results are tabled in Parliament and are publicly available in the Forest Practices Board's annual reports at the website www.fpb.tas.gov.au.

The Reserve Code of Practice is not yet completed (see Attachment 10, clause 11). Once it is approved and in force it is intended that compliance will be audited annually, published and made publicly available.

- five-yearly independent expert reviews of the operation of the above-mentioned codes of practice where they are associated with Forest lands.

An independent expert review of the operation of both Codes will be undertaken every five years.

The Forest Practices System is based on a philosophy of continuing review and improvement. Several independent thematic reviews have been completed since the RFA was signed:

1. A review into the steep country provisions of the Forest Practices Code, chaired by Dr John Madden, was completed and its recommendations incorporated in the revised Forest Practices Code.
2. A review into the soil and water provisions of the Code, chaired by Dr Peter Davies, was completed and released for public comment. Its final recommendations were incorporated in the revised Forest Practices Code.
3. An expert panel of safety and industry representatives undertook a review of the safety aspects of the Code. The panel's suggestions for changes to the Code were incorporated in the revised Code.

In 2000, a draft revised Forest Practices Code was released for public comment. Over 70 submissions were received and considered by the Forest Practices Advisory Council. An amended Code, the Forest Practices Code 2000, took effect on 1 January 2001.

The Forest Practices Board maintains a commitment to regular review and revision of the Code and the documents that support the Code. The Board intends to seek amendment to the *Forest Practices Act 1985* to prescribe a review period of at least once every five years.

In late 2001, the Forest Practices Board commissioned an independent expert review of the compliance auditing procedures relating to the operation of the Forest Practices Code. The review was undertaken by Clynt Wells, an independent forest auditing consultant, based in Queensland, who has national and international experience. Mr Well's report found that:

in terms of credibility, transparency and reliability of the audit process, the Forest Practices Board has:

- *a comprehensive system for managing self regulation;*
- *audit procedures that follow the normally accepted protocols for an environmental audit;*
- *a sampling percent that exceeds that commonly accepted for general audits;*
- *a need for special or appropriately stratified audits to reliably assess special issues;*
- *a sample selection process consistent with accepted standards;*
- *audit procedures consistent with the normally accepted standards of objectivity and accuracy;*
- *auditors with a high inherent competence and extensive experience but who lack formal auditing qualifications and certification;*
- *procedures which fully record and report audit data in an accountable manner; and*
- *processes that use audit data for focus management and improve the Code.*

Wells reported that *within this very positive result, and given the Board's special responsibility for independent oversight of forest practices, there are opportunities for improving the system and enhancing credibility, transparency and reliability.* The Forest Practices Board recognises the importance of the independent audit, and is committed to the continuing refinement of all aspects of the audit process.

The requirements under this milestone have been met as indicated above.

Databases and Confirmation

96. The State agrees that any changes to the Priority Species in Attachment 2 including new or altered management prescriptions developed over the term of the Agreement will:
- (a) be adequate to maintain the species identified;
 - (b) have a sound scientific basis;
 - (c) be endorsed by the Tasmanian Threatened Species Scientific Advisory Committee where relevant; and
 - (d) take note of public comment.

Most species on the Priority Species lists in RFA Attachment 2 are also listed under the Tasmanian *Threatened Species Protection Act 1995*. The Scientific Advisory Committee recently reviewed the schedules to the *Threatened Species Protection Act* and added some new species. As a result, new species have been added to the lists in RFA Attachment 2.

Changes made after a recent review of the Threatened Fauna Adviser and endorsed by the Scientific Advisory Committee. Public comments were sought on changes to species on the Schedules of the *Threatened Species Protection Act*.

This commitment has been met however will be subject to periodic review.

97. A Management Prescriptions Database and a Response to Disturbance Database have been prepared as part of the CRA for species identified as priority for protection by reservation and/or management prescription. The State agrees to maintain these databases and update them as necessary and also confirms that they will be used as a basis for updating relevant State management documents. Updated hard copies of the database contents will be made available periodically for public comment.

Tasmania has conflated and upgraded these databases to make them operationally viable and to provide for new information as it arrives. Information about flora and fauna are stored separately. As noted in Clause 69, the fauna database is now called the Threatened Fauna Adviser. The flora data are accessed through a database developed by the Flora Section of the Threatened Species Unit in the Department of Primary Industries, Water and Environment (DPIWE) and prescriptions derived from joint DPIWE-Forest Practices Board databases and specialist knowledge. All updating has been in accordance with the requirements of the *Threatened Species Protection Act 1995* and provisions of the Forest Practices Code. As required under Clause 96, the new information and changes are vetted and endorsed by the Scientific Advisory Committee of the *Threatened Species Protection Act*. This process has already been followed for the fauna components of the database and will also be followed when the flora provisions occurs are updated. Once agreed, the information will be made publicly available.

This milestone has been met however the process will be ongoing.

Review of sustainable high-quality sawlog supply levels

98. The State agrees to undertake a review of sustainable high-quality sawlog supply levels from public land to reflect the changes in forest inventory and new intensive management initiatives concluded in this Agreement. The review will be completed and published during the first year of this Agreement and thereafter will coincide with the five-yearly review of this Agreement.

The sustained yield review completed during the first year of the RFA was publicly released by Forestry Tasmania in November 1998. It is documented in *Post-Regional Forest Agreement (RFA) Review of Sustainable High-Quality Eucalypt Sawlog Supply from Tasmanian State Forest*, Forestry Tasmania 1998.

The first review above has been completed and the second review is underway to coincide with the five-yearly review of this Agreement.

Review of pricing and allocation policies for commercial Government-owned forestry operations

99. The State agrees to undertake by 30th April 1998 a review on pricing and allocation policies for commercial government-owned forestry operations and agrees to make available to the public a report describing the outcomes of the review and agrees to consider these outcomes in the development of its pricing and allocation policy.

This milestone has been completed as outlined below.

A review of pricing and allocation policies report was released in April 1998. It is publicly available in the document, *Review of Pricing and Allocation Policy of Native Forest Hardwoods in Tasmania*, Margules Poyry / Access Economics 1998. The authors considered six options for pricing and allocation of high-quality eucalypt sawlogs before proposing nine initiatives for the future, to which Forestry Tasmania responded as follows.

1. Forecasts of future native forest yields have been prepared and disseminated amongst existing and potential customers as the basis for negotiations about future wood-supply contracts.
2. Development of market objectives is an ongoing responsibility of the Tasmanian Timber Promotion Board, of which Forestry Tasmania is a member.
3. Forestry Tasmania subscribes to periodic detailed reviews of markets for hardwood sawn timber. In the case of re-manufactured products, (eg LVL), Forestry Tasmania is conducting a number of parallel exercises to analyse the market potential, confirm technical suitability and assess financial viability.
4. Development of price estimates for the most likely products in the most likely markets is an inherent aspect of the analyses to which point 3 above refers.
5. In the case of “new” forest products (eg eucalypt peeler logs), Forestry Tasmania has assessed the available resource through field trials at a range of sampling intensities.
6. Forestry Tasmania has conducted a commercial-scale trial of a log-merchandising yard to assess the relative costs and benefits of this significant opportunity to “re-engineer” the wood delivery and sales process. The merchandising-yard concept is associated with proposed new “integrated timber processing sites” (Southwood), which are expected to have other synergies and efficiencies.

7. To assess the merits of particular proposals for forest use, domestic pulpwood, domestic sawlog and export woodchip have been estimated at a local level. These estimates have not been compiled on a statewide basis since the work that was done for the RFA.
8. The cost of compiling a statistically robust sawn-timber index is considered to be prohibitive. However, a number of existing Australian Bureau of Statistics indices are applicable and are being used for regular adjustments to log prices. For other major products, market price information is generally available, either through regular publications by the ABS and other observers, or through the annual reports of publicly listed companies.
9. Forestry Tasmania has ongoing market plans for each of the markets in which it operates, or seeks to operate. Although the details are confidential, the plans are described in the annual reports.

Financial Assistance

100. The Commonwealth will, subject to the provisions of the Natural Heritage Trust of Australia Act 1997, and the terms and conditions of the Partnership Agreement entered into it with Tasmania on 7 October 1997 under section 19 of that Act as to the financial assistance provided to the State thereunder, provide \$20 million for actions to implement the 'Program to protect conservation values on private land in support of the CAR Reserve System' described at Attachment 8 in this Agreement. Such payments are to be made on the basis provided for in that Attachment.

The Strategic Plan for the Private Forest Reserve Program (<http://www.gisparks.tas.gov.au/privaterfa/downloads/index.html>) indicates that Natural Heritage Trust (NHT) funds will be sought on a project basis – a project being a specific proposal to acquire or establish and manage a reserve on a particular property. Funds approved and expended from the trust's reserve are shown in Attachment 8, Clause 19.

Allocated funds have been partly provided with provision linked to the ongoing development of the program.

101. The Commonwealth will, subject to the terms and conditions under any Commonwealth Act which appropriates money for use by the State for the purposes of this Agreement, provide that money to the State as follows:
 - (i) an amount of \$57 million in equal instalments over three years commencing 1997/98 for the implementation of new intensive forest management initiatives;
 - (ii) an amount of \$13 million in equal instalments over three years commencing 1997/98 for the implementation of employment and industry development initiatives specified in Attachment 12;
 - (iii) an amount of \$10 million in equal instalments over three years commencing in 1997/98 for infrastructure development projects as specified in Attachment 12, being
 - roading to increase productivity (\$6 million),
 - tourism infrastructure (\$3 million) and
 - new reserve management (\$1 million); and

- (iv) a further amount of \$10 million in equal instalments over 2 years commencing 1997/98 for actions to implement the 'Program to protect conservation values on private land in support of the CAR Reserve System' described at Attachment 8 of this Agreement.

All the above amounts were provided as follows:

- (i) The Commonwealth provided \$15.6 million in 1997/98, \$22.5 million in 1998/99 and \$18.9 million in 1999/00.
- (ii) The Commonwealth provided \$4.41 million in 1997/98, \$4.3 million in 1998/99 and \$4.29 million in 1999/00.
- (iii) The Commonwealth provided \$3.4 million in 1997/98, \$ 3.3 million in 1998/99, and \$3.3 million in 1999/00.
- (iv) The Commonwealth provided \$10 million over the two years 1997/99.

Clause 3 of Attachment 12 provides detail on how these funds were spent.

Attachment 1 – Protection and Management of National Estate Values

6. The Parties agree, by the 31 December 1998, to jointly fund and accredit for land management purposes digital maps at resolution of 1:100 000 of the boundaries of all lands in Tasmania listed on the Register of the National Estate.

As detailed below this milestone has been partially met pending changes to Commonwealth legislation.

Digital maps of existing areas listed on the Register of the National Estate were produced for the CRA at 1:100 000 resolution. Environment Australia, the Department of Primary Industries, Water and Environment, and Forestry Tasmania have progressed the identification of new and revised listings in accordance with Attachment 1 of the RFA. The Commonwealth has announced its intentions to amend the *Australian Heritage Commission Act 1975* and the *Environment Protection and Biodiversity Conservation Act 1999* to provide for a National Heritage Places List to replace the Register of the National Estate. It has been jointly agreed to suspend further work on identifying places to add to the register, pending the outcomes of the legislative amendments. The Australian Heritage Commission has therefore added a disclaimer to places on the register, stating that Tasmania has not yet verified the records. This proviso effectively applies to all of Attachment 1, but most specifically to clauses 6/10, 14, 15, 20 and 21.

7. The Parties note that the Commission has agreed to update the Statements of Significance and Condition and Description Statements for all existing listings on its Register of the National Estate to incorporate the results of the Joint Study. The Parties note that the Commission has agreed:
 - that existing National Estate places will have their Statements of Significance updated with the values identified in the Joint Study and their Condition and Description Statements amended to reflect the protection and management status of the area they cover;
 - to delist Forest places if they have been identified through the CRA to have no Forest-related National Estate Value;
 - to consider refinement of boundaries to minimise confusion or to better reflect the intent of listing, on the basis of improved data from CRA assessments;
 - that interim-listed Forest places will be progressed as required by the provisions of the Australian Heritage Commission Act 1975 (Cwth) but consistent with the intent of paragraphs 8/10 below, as far as practicable; and
 - for those listed places in which forestry activities may take place the Commission will make clear in relevant public documents (place records) the management status of the area and that those areas are not within the agreed CAR Reserve System.
8. The Parties agree to recommend to the Commission new listings on Public Land which are drawn from National Estate Values protected within the CAR Reserve System or by other measures appropriate to the value, or which will not be affected by harvesting.
9. The Parties note that the Commission has agreed to work in cooperation with the State in delineating places for National Estate listing.

10. The Parties agree and note the Commission has also agreed that, for places arising from the Joint Study, only places identified by the above principles will be listed in the Register of the National Estate.
14. The Parties note that the Commission has agreed that future nominations will be referred to them, and agree to work in a cooperative and timely fashion when considering whether such nominations will be recommended to the Commission for listing. As part of this process the Parties will compare the nominations with the existing Tasmanian Forest National Estate database to consider any new research or information provided.
15. The Parties will jointly agree on any future forest-related recommendations to the Commission for listing. The Parties note that the Commission has agreed to work cooperatively with them on the detail of any consequent listings that may arise.
16. The Parties agree that all National Estate Values will be considered in forest management decisions. The advice of the Commission will be sought in relation to proposed actions by the Commonwealth which are outside the scope of this Agreement and which might adversely affect National Estate Values in Tasmania, including proposed actions that may affect National Estate Values in areas outside the CAR Reserve System and which have not been listed on the Register of the National Estate. The Parties note that the Commission has agreed to take into account the undertakings in this Agreement in providing its advice, and will provide such advice in a regional context.

National Estate Values have been considered in forest-management decisions in accordance with the principles in Attachment 1, clause 4 and the agreed actions in Attachment 1, Table 1. National Estate Values have been addressed at the State level in both forest management plans and reserve management plans prepared or revised since the RFA was signed in 1997, and are addressed in operational planning through the provisions of the Forest Practices Code 2000.

Since the signing of the RFA, two actions proposed by the Commonwealth could potentially have impacted on National Estate Values in Tasmania, and consequently required advice from the Australian Heritage Commission under Section 30 of the *Australian Heritage Commission Act 1975*. Under the Act, the Commission must provide advice on the impact of forest activities and on National Estate values on the National Estate place. The Commission will provide this advice in a regional context.

17. The Parties note that the Commission may delegate preparation of Section 30 advice with respect to Forest Estate areas covered by this Agreement to an appropriate official in a Tasmanian Agency. This delegation would be limited to the Forest Estate documented in the CRA.

The Australian Heritage Commission has not delegated this authority which has not been a concern for Tasmania.

19. The Parties agree the listing of places on Private Land will take place in consultation with private owners. National Estate natural heritage values on Private Land will only be listed from areas protected under the Private Land elements of the CAR Reserve System.

The Australian Heritage Commission's policy is to consult with private landholders; however, it is not currently considering any natural National Estate listings on private land.

20. The State agrees, as part of the implementation of the program to protect CAR values on Private Land outlined in Attachment 8, to encourage the listing on the Register of the National Estate of areas of Private Land within the CAR Reserve System.

See response to Attachment 8.

Attachment 1, Table 1 – Additional agreed actions under the Tasmanian RFA

Fauna centres of endemism: For the Plomleys Island and St Marys indicative areas, key endemic species to be added to forest management plans (when new ones are prepared or existing ones revised), along with the general principle of maintaining species' presence in the indicative area.

The Bass and Eastern Tiers District Forest Management Plans identify the Plomleys Island and St Marys indicative areas, provide principles and prescriptions for management of their associated National Estate values, and refer to key species where these are known.

Richness of plant communities: Future revision of the Forest Practices Code to consider inclusion of an additional principle under Flora Conservation, along the lines: "Plan and manage timber-harvesting activities to maintain richness of flora species and communities"; and

Flora species richness: Future revision of the Forest Practices Code to consider including an additional principle under Flora Conservation, along the lines: "Plan and manage timber-harvesting activities to maintain richness of flora species and communities".

The Forest Practices Code 2000 has several principles and guidelines designed to maintain richness of flora species and communities. They include dispersing coupes across the landscape, maintaining localised habitats and sites with high species diversity, retaining remnant forests, controlling weeds and disease, managing fire and buffering native forest adjacent to proposed plantations. Biodiversity guidelines in the code are variously supported by policies of the Forest Practices Board (eg Duty of Care policy), conservation programs (eg Private Forest Reserve Program) and other policies (eg Forestry Tasmania's planning policies for maintaining relict rainforest, and spines of native forest across areas that have been extensively converted to plantation). More detailed information and prescriptions relevant to maintenance of biodiversity and National Estate values are available to forest managers through Forest Botany Manuals and the advice of specialists in the Forest Practices Board, Forestry Tasmania, the Department of Primary Industries, Water and Environment, and other agencies.

Type localities for fauna species: Fauna type localities to be identified as special management zones under the Management Decision Classification System, where practicable.

Fauna type localities occurring on State forest or other land managed by Forestry Tasmania have been identified as special management zones under the Management Decision Classification System.

Primitive and relict fauna: For the north-west extremity and Goulds Country indicative areas, key primitive and relict species to be added to Forest Management Plans (when new ones are prepared or existing ones revised), along with the general principle of maintaining species' presence in the indicative area.

The Circular Head, Bass and Eastern Tiers District Forest Management Plans identify the north-west extremity and Goulds Country indicative areas, provide principles and prescriptions for management of its associated National Estate values and refer to key species where these are known.

Disjunct fauna: For Wielangta area, key disjunct species to be added to Forest Management Plans (as new ones are prepared or existing ones revised), along with the general principle of maintaining species presence within the indicative area.

The Derwent District Forest Management Plan identifies the Wielangta indicative area, provides principles and prescriptions for management of its associated National Estate values, and refers to key species where these are known.

Fauna species at the limits of their range: For the north-west extremity, north-east extremity, East Tamar, and Goulds Country indicative areas, key fauna species at the limits of their range to be added to forest management plans (when new ones are prepared or existing ones revised), along with the general principle of maintaining species' presence in the indicative area.

The Circular Head, Bass and Eastern Tiers District Forest Management Plans identify the north-west extremity, north-east extremity and Goulds Country indicative areas, provide principles and prescriptions for management of their associated National Estate values, and refer to key species where these are known. Note that the East Tamar indicative area is not referred to separately as it is fully encompassed by the Plomleys indicative area.

Type localities for flora species: Flora type localities to be identified as special management zones under the Management Decision Classification System.

Flora type localities occurring on State forest or other land managed by Forestry Tasmania have been identified as special management zones under the Management Decision Classification System.

Research, teaching and benchmark sites: Indicative areas to be identified as special management zones under the Management Decision Classification System and managed as appropriate to their research value.

Indicative areas occurring on State forest or other land managed by Forestry Tasmania have been identified as special management zones under the Management Decision Classification System and managed according to specific research value (eg Warra Long-term Ecological Research (LTER) site).

Geo-conservation values: Future revision of the Forest Practices Code to consider replacing "geomorphology" in the Code with the term "geoconservation"; Tasmanian Geoconservation Database to be incorporated in planning databases; Geoconservation values to be identified in forest management plans.

The change from "geomorphology" to "geo-conservation" is being implemented in the context of upgrading the Forest Practices Board's instructions and manuals that are relevant to geo-conservation. These documents underpin the principles of the Forest Practices Code. The old, generalised Geomorphology Manual is being replaced progressively by more focused manuals on specific topics such as geoconservation in sinkhole areas. The Board has already taken this approach with background geoconservation typology reports on karst, glacial landscapes and landforms of coastal origin.

The Tasmanian Geoconservation Database is updated annually, with copies provided on CD to land managers. It is used as a management tool by forest planners and park planners, and for assessment of mineral-exploration proposals by Mineral Resources Tasmania. Site data from the Tasmanian Geoconservation Database are also spatially available in Geographical Information at Forestry Tasmania (GIFT) and Map Composer planning systems. These are consulted when evaluating special values for all Forest Practices Plans for State forest.

All Forestry Tasmania's District Forest Management Plans identify geo-conservation values.

Historic values: Future revision of the Forest Practices Code to consider replacing “archaeology” with “cultural heritage”; to add a definition of “historic cultural heritage significance” identical to the definition given in the *Historic Cultural Heritage Act 1995*; and to revise the archaeological manual to ensure historic values are considered in a manner consistent with current best practice; and to include National Estate historic indicative areas in upgraded planning databases.

The revised Forest Practices Code has renamed Section D5 “Cultural Heritage” as recommended in the RFA. Linkages have been made to the *Historic Cultural Heritage Act 1995* in both the general principles and in Section D5.2 Site Management. Although cultural heritage is not specifically defined, specialist advice is required for known historic sites. This advice would adhere to definitions of significance in the Act. The *Archaeology Manual* has not been revised because of the State Government’s current review of the *Aboriginal Relics Act 1975* and the likelihood of changes to that Act.

Social values: Indicative areas to be incorporated into planning databases.

Places identified during the CRA as indicative areas of social values have been incorporated in Forestry Tasmania’s GIFT Enquiry System for use in planning and managing State forest land.

Aesthetic values: Indicative areas to be incorporated into planning databases.

Places identified during the CRA as indicative areas of aesthetic values have been incorporated in Forestry Tasmania’s GIFT Enquiry System for use in planning and managing State forest land.

Attachment 6 – The Comprehensive, Adequate and Representative Reserve System on Public Land

2. The CAR reserve system on Public Land, not including values managed by prescription, will total 2,700,000 ha, comprising 2,304,000 ha of existing reserves and 396,000 ha of additional reserves. The reservation levels achieved in the CAR Reserve System on Public Land for Forest Communities and Old Growth communities are detailed in Table 1. These do not include values reserved by prescription.

Formal and Informal Reserves on public land comprised 2,713,300 hectares of land as at 30 June 2001. This represents 39.9 per cent of the land area of Tasmania.

When the RFA was signed the area of Formal and Informal Reserves was reported as 2,304,600 hectares at 30 June 1996. However, this included 49,600 hectares of sea, resulting in a reserved land area of 2,255,000 hectares. Thus there has been an increase of about 458,200 hectares of land in new reserves since 30 June 1996. The RFA provided for an indicative area of 396,000 hectares of new reserves.

Tables 1 and 2 show the areas of each forest community and old growth forest community respectively that were estimated to be reserved under the RFA and the area that has been actually reserved. Areas protected on private land under the Private Land Reserve Program are not included in the tables. While most communities have been reserved in excess of the indicative areas proposed in the RFA, there are a few that have been reserved at levels lower than planned. These nearly all relate to areas that were proposed for reservation in the RFA on the basis of information that they contained a specific forest community. Ground checking of these areas provided confirmation that the proposed reserves did not contain the specified communities. Appendix A of the Attachment 6 report below provides details of individual reserves.

The areas of forest communities and old growth as mapped in 1996 have been revised as a result of improved GIS processing. In 1996, tiny polygon slivers created in the GIS processing were not counted into their community types in the reports. These slivers are now fully accounted for. As a result, the reported area of some forest communities has increased slightly. A few have increased by larger amounts and a few others have decreased slightly. The 1996 areas are shown in the Tables as reported in the RFA and as revised in 2001.

There were 1,268,500 hectares of native forest reserved on public land as at 30 June 2001, which is 39.6 per cent of the native forest area mapped in 1996. This is an increase of 292,830 hectares since June 1996. The RFA provided for an indicative area of 269,430 hectares of native forest in new reserves.

There were 850,500 hectares of old growth native forest reserved on public land as at 30 June 2001 which is 68.2 per cent of the area of old growth forest mapped in 1996. This is an increase of 168,520 hectares since June 1996. The RFA provided for an indicative area of 153,620 hectares of old growth in new reserves.

Table 1 Reservation levels of Forest Communities in the CAR Reserve System on Public Land

Forest Community	Forest Community						
	1996 area as reported in RFA (ha)	1996 area corrected (ha)	1996 reservation (ha)	RFA proposed reservation (ha)	RFA proposed reservation (%)	2001 reservation (ha)	2001 reservation (%)
Coastal <i>E. amygdalina</i> dry sclerophyll forest	190 210	190 210	32 510	59 450	31	66 530	35
<i>E. amygdalina</i> forest on dolerite	178 300	178 310	13 640	28 070	16	27 060	15
Inland <i>E. amygdalina</i> forest	25 800	25 810	1 400	2 070	8	2 510	11
<i>E. amygdalina</i> forest on sandstone	30 110	30 110	1 810	5 650	19	5 400	18
<i>Allocasuarina verticillata</i> forest	1 430	1 430	530	610	43	620	45
<i>E. brookeriana</i> wet forest	4 560	4 570	270	1 020	22	1 020	22
<i>Acacia melanoxylon</i> forest on flats	9 010	9 010	970	2 290	25	2 260	25
<i>Acacia melanoxylon</i> forest on rises	13 310	13 310	1 320	3 730	28	3 820	29
<i>Banksia serrata</i> woodland	160	160	120	120	74	120	74
<i>E. coccifera</i> dry forest	54 540	54 550	37 690	41 020	75	42 250	78
<i>Callitris rhomboidea</i> forest	790	790	260	370	47	380	48
Dry <i>E. delegatensis</i> forest	289 530	289 590	74 800	91 000	31	91 530	32
<i>E. viminalis</i> / <i>E. ovata</i> / <i>E. amygdalina</i> / <i>E. obliqua</i> damp sclerophyll forest	40 630	40 630	6 510	11 800	29	11 950	29
Tall <i>E. delegatensis</i> forest	285 720	285 750	75 080	86 780	30	89 430	31
King Billy Pine with deciduous beech forest	790	850	630	770	97	770	91
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	1 220	1 220	280	280	23	280	23
Grassy <i>E. globulus</i> forest	14 450	14 450	4 230	6 330	44	6 190	43
Huon pine forest	8 600	8 980	6 720	7 400	86	7 640	85
King Island <i>E. globulus</i> / <i>E. brookeriana</i> / <i>E. viminalis</i> forest	2 420	2 430	130	610	25	500	22
<i>Leptospermum</i> sp. / <i>Melaleuca squarrosa</i> swamp forest	18 950	18 960	8 590	10 070	53	10 190	54
Callidendrous and thamnic rainforest on fertile	192 010	192 110	86 580	102 170	53	103 770	54

Forest Community	Forest Community						
	1996 area as reported in RFA (ha)	1996 area corrected (ha)	1996 reservation (ha)	RFA proposed reservation (ha)	RFA proposed reservation (%)	2001 reservation (ha)	2001 reservation (%)
sites							
Thamnic rainforest on less fertile sites	377 870	378 090	231 610	279 380	74	281 340	74
<i>Melaleuca ericifolia</i> forest	600	600	220	220	37	390	65
<i>E. morrisbyi</i> forest	20	20	0	0	0	0	0
Dry <i>E. nitida</i> forest	159 850	159 860	120 850	136 990	86	137 130	86
Furneaux <i>E. nitida</i> forest	29 810	29 820	5 550	6 230	21	7 180	24
<i>Notelaea ligustrina</i> / <i>Pomaderris apetala</i> forest	290	290	190	190	66	200	70
Tall <i>E. nitida</i> forest	74 410	74 420	64 090	67 000	90	67 020	90
Dry <i>E. obliqua</i> forest	164 140	164 140	36 910	50 820	31	51 570	31
Tall <i>E. obliqua</i> forest	425 700	425 630	76 060	107 520	25	111 750	26
Shrubby <i>E. ovata</i> forest	7 210	7 210	270	340	5	350	7
<i>E. pulchella</i> / <i>E. globulus</i> / <i>E. viminalis</i> grassy shrubby dry sclerophyll forest	151 310	151 300	13 960	35 530	24	36 370	24
Pencil pine with deciduous beech forest	190	190	190	190	100	190	100
<i>E. pauciflora</i> forest on Jurassic dolerite	18 810	18 820	2 350	3 730	20	3 010	16
Pencil pine forest	330	350	330	330	100	350	100
<i>E. pauciflora</i> forest on sediments	16 200	16 210	3 910	4 600	28	4 940	30
<i>E. regnans</i> forest	76 050	76 050	13 390	16 230	21	16 330	21
<i>E. risdonii</i> forest	370	380	170	170	46	170	47
<i>E. rodwayi</i> forest	8 670	8 670	280	430	5	400	5
<i>E. sieberi</i> forest on granite	17 660	17 660	2 190	5 080	29	5 400	31
Silver wattle (<i>Acacia dealbata</i>) forest	54 090	54 090	9 740	12 430	23	13 230	24
<i>E. sieberi</i> forest on other substrates	46 000	45 950	6 250	11 050	24	11 430	25
<i>E. subcrenulata</i> forest	10 240	10 240	8 510	8 600	84	8 720	85
<i>E. tenuiramis</i> forest on granite	3 020	3 020	1 320	2 760	91	2 820	93
<i>E. tenuiramis</i> forest on dolerite	8 430	8 430	3 570	5 920	70	5 900	70
Inland <i>E. tenuiramis</i> forest	55 010	55 020	3 260	7 140	13	7 590	14
<i>E. viminalis</i> grassy forest	113 310	113 320	1 450	3 070	3	2 790	3
Furneaux <i>E. viminalis</i> forest	140	140	0	120	83	110	85
Wet <i>E. viminalis</i> forest on basalt	4 180	4 180	320	560	14	550	13
King Billy pine forest	18 090	20 140	14 700	15 060	83	17 110	85

Forest Community	Forest Community						
	1996 area as reported in RFA (ha)	1996 area corrected (ha)	1996 reservation (ha)	RFA proposed reservation (ha)	RFA proposed reservation (%)	2001 reservation (ha)	2001 reservation (%)
TOTAL	3 203 720	3 208 690	975 710	1 245 140	39	1 268 540	40

Table 2 Reservation of oldgrowth communities in the CAR Reserve System on Public Land

Forest Community	Old Growth						
	1996 area (ha)	1996 area corrected (ha)	1996 reservation (ha)	RFA proposed reservation (ha)	RFA proposed reservation (%)	2001 reservation (ha)	2001 reservation (%)
Coastal <i>E. amygdalina</i> dry sclerophyll forest	40 080	40 090	12 610	24 300	60	24 630	61
<i>E. amygdalina</i> forest on dolerite	30 490	30 490	5 790	15 390	50	14 890	49
Inland <i>E. amygdalina</i> forest	2 860	2 860	140	170	6	410	14
<i>E. amygdalina</i> forest on sandstone	6 600	6 600	700	2 160	33	2 130	32
<i>Allocasuarina verticillata</i> forest	970	970	440	510	53	530	54
<i>E. brookeriana</i> wet forest	690	690	40	60	8	60	8
<i>Banksia serrata</i> woodland	160	160	120	120	75	120	75
<i>E. coccifera</i> dry forest	32 630	32 630	25 690	27 930	86	28 360	87
<i>Callitris rhomboidea</i> forest	600	600	230	330	54	320	54
Dry <i>E. delegatensis</i> forest	79 820	79 820	40 100	48 180	60	48 360	61
<i>E. viminalis</i> / <i>E. ovata</i> / <i>E. amygdalina</i> / <i>E. obliqua</i> damp sclerophyll forest	2 500	2 500	670	1 780	71	1 670	67
Tall <i>E. delegatensis</i> forest	104 420	104 420	50 880	57 980	56	58 580	56
King Billy Pine with deciduous beech forest	370	370	340	340	92	340	92
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	870	870	130	130	15	130	15
Grassy <i>E. globulus</i> forest	4 910	4 910	2 720	4 000	81	3 980	81
Huon pine forest	7 570	7 610	6 650	7 280	96	7 330	96
<i>Leptospermum</i> sp. / <i>Melaleuca squarrosa</i> swamp forest	9 960	9 960	7 620	8 320	84	8 430	85
Callidendrous and thamnic rainforest on fertile sites	159 650	159 640	79 280	93 870	59	95 100	60
Thamnic rainforest on less fertile sites	335 800	335 900	223 290	265 420	79	267 260	80
<i>Melaleuca ericifolia</i> forest	310	310	30	30	10	200	65
Dry <i>E. nitida</i> forest	107 370	107 370	85 460	95 520	89	95 280	89
<i>Notelaea ligustrina</i> / <i>Pomaderris apetala</i> forest	270	270	190	190	72	200	75
Tall <i>E. nitida</i> forest	49 600	49 600	45 290	47 150	95	47 170	95
Dry <i>E. obliqua</i> forest	46 960	46 960	19 110	27 590	59	26 770	57
Tall <i>E. obliqua</i> forest	83 490	83 490	28 920	44 970	54	45 970	55

Forest Community	Old Growth						
	1996 area (ha)	1996 area corrected (ha)	1996 reservation (ha)	RFA proposed reservation (ha)	RFA proposed reservation (%)	2001 reservation (ha)	2001 reservation (%)
Shrubby <i>E. ovata</i> forest	470	470	110	150	32	150	32
<i>E. pulchella</i> / <i>E. globulus</i> / <i>E. viminalis</i> grassy shrubby dry sclerophyll forest	63 840	63 840	9 140	26 680	42	26 970	42
Pencil Pine with deciduous beech forest	170	170	170	170	100	170	100
<i>E. pauciflora</i> forest on Jurassic dolerite	1 870	1 870	910	1 280	68	1 170	63
Pencil pine forest	330	340	330	330	100	340	100
<i>E. pauciflora</i> forest on sediments	4 300	4 300	2 720	2 770	64	3 000	70
<i>E. regnans</i> forest	13 290	13 290	4 900	6 320	48	6 390	48
<i>E. risdonii</i> forest	10	10	0	0	0	1	7
<i>E. rodwayi</i> forest	730	730	120	140	20	140	19
<i>E. sieberi</i> forest on granite	960	960	180	790	82	760	80
<i>E. sieberi</i> forest on other substrates	1 660	1 660	320	790	48	800	48
<i>E. subcrenulata</i> forest	7 420	7 420	6 500	6 560	88	6 580	89
<i>E. tenuiramis</i> forest on granite	2 900	2 900	1 280	2 670	92	2 730	94
<i>E. tenuiramis</i> forest on dolerite	5 490	5 490	2 190	4 470	81	4 460	81
Inland <i>E. tenuiramis</i> forest	7 970	7 980	820	1 540	19	1 920	24
<i>E. viminalis</i> grassy forest	8 490	8 500	530	760	9	840	10
Wet <i>E. viminalis</i> forest on basalt	140	140	60	100	71	100	73
King Billy pine forest	17 300	17 300	15 290	15 590	90	15 830	92
TOTAL	1 246 290	1 246 430	682 020	835 640	67	850 540	68

5. The State will finalise boundaries on 1:25 000 maps to enable gazettal, referred to clause 24 of the agreement. Finalisation will include identifying the best management boundaries.

Appropriate management boundaries were finalised for all CAR Reserves and recorded on registered plans at a scale of 1:25 000 or larger as the basis of their formal gazettal.

During the process, some amendments were made to areas and number of reserves proclaimed. They included both additions and deletions to the list of reserves and both increases and decreases in the areas of individual reserves; all changes made in accordance with the process outlined in RFA Attachment 6.

Appendix A to the present report lists the name and area of all reserves listed in Attachment 6, marks the reserves proclaimed, and details reasons for any significant changes.

17. Forestry Tasmania will identify those Informal Reserve areas on State forest on Management Decision Classification maps as protection zones and manage the areas for the protection of the CAR values identified, subject to field verification of the existence and extent of those values. These informal reserves will be included in new and revised Forest Management Plans by the year 2000.

Forestry Tasmania has incorporated all informal reserves in the Management Decision Classification System as protection zones mapped at the operational scale of 1:25 000. These informal reserves were included in all new and revised forest management plans by March 2000.

18. The requirement for, and location of, some existing Protection Zones will also be reviewed as a result of the RFA. Any changes will be made in accord with Clause 57 of this Agreement.

Implemented and ongoing (see response to clause 57).

20. These Informal Reserves (Stony Head; Little Swanport Hill; Mt Douglas; Maclaines Creek) will be included after public participation in new and revised Management Plans by the year 2000.

The Department of Defence has prepared new management plans for these areas. The plans were prepared through targeted consultation with stakeholders (eg Tasmanian Aboriginal Land Council, Tasmania Fire Service, Tasmanian Heritage Council and Forestry Tasmania). In addition, a departmental representative participated in meetings of local catchment Committees.

The Department of Defence holds the plans.

21. The following Forest Communities, where they occur outside existing and new Formal and Informal Reserves, will be protected on Public land wherever prudent and feasible, to protect those values at a regional level:

Eucalyptus risdonii forest
E. ovata Shrubby forest
E. viminalis wet forest on basalt
Notelaea ligustrina/Pomaderris apetala forest
Banksia serrata woodland
 Furneaux *E. viminalis* forest
E. amygdalina inland forest
E. globulus grassy forest
E. viminalis grassy forest
E. viminalis/E. globulus forest
E. tenuiramis inland forest
E. rodwayi forest
E. brookeriana forest

King Island *E. globulus*/ *E. brookeriana*/ *E. viminalis* forest
Callitris rhomboidea forest
Melaleuca ericifolia coastal swamp forest
E. pauciflora old growth forest on dolerite
E. sieberi old growth forest on granite
E. sieberi old growth forest on other substrates
E. viminalis/ *E. ovata*/ *E. amygdalina*/ *E. obliqua* old growth damp sclerophyll forest

This commitment has been met by the implementation of the ongoing processes detailed below.

Forest planners identify the forest communities present when Forest Practices Plans are prepared. If any of the communities listed above will be affected by the proposed operations, forest planners must seek advice from the appropriate Forest Practices Board specialists and may also seek it from Forestry Tasmania's Conservation Planning Section. Patches of these communities are excluded from operations wherever prudent and feasible. They are protected either by management prescription incorporated in the Plan or by inclusion within informal reserves under Forestry Tasmania's Management Decision Classification System. Protection is also given to areas of these communities identified on public land through other processes, for example in State Forest, such areas are included within informal reserves.

For mineral exploration activities on public land, the Mineral Exploration Working Group will identify areas containing these communities and recommend conditions to mitigate potential impacts.

For further information on the maintenance of forest communities see the response to Attachment 9.

21. Deferred Forest Land not required for the CAR Reserve System will be removed from the Register of Deferred Forest Land.

Completed (see report against Clause 53).

22. The following areas of Deferred Forest Land will be referred to the Public Land Use Commission for recommendations on tenure and management.

All areas will be available for mineral exploration and mining under the *Mineral Resources Development Act 1995*.

Location	Area (ha)
near Savage River township	2 230 ha
east of Stanley River	1 350 ha
north of Zeehan	890 ha
north and west of Gladstone	8 350 ha
Leven Canyon	2 720 ha
Bonds Range	2 020 ha

All of the areas listed above were referred to the Resource Planning and Development Commission (RPDC), formerly the Public Land Use Commission, for the Commission's *Inquiry into areas to be reserved under the Tasmanian/Commonwealth Regional Forest Agreement*. The terms of reference for the inquiry required the Commission to recommend tenures for these areas in accordance with the requirements of Attachment 6 of the RFA.

The RPDC recommended to the State Government on 12 May 1999 that all areas were to become conservation reserves, except a part of the Leven Canyon area, that was recommended to become State forest. This commitment was met when these reserves were proclaimed in accordance with those recommendations on 27 December 2000 or 4 April 2001.

24. Deferred Forest Land other than those areas identified in 4 above and not required for the CAR Reserve System will, subject to the provisions of the Forestry Act 1920 (Tas), be entered into the Register of Multiple Use Forest Land.

Completed (see report against Clause 53).

Appendix A to Attachment 6 Report Reconciliation Report on RFA Formal Reserves

Background

The Tasmanian RFA identified areas of public land to be reserved by the Tasmanian Government. They were listed in Attachment 6 of the RFA, in tables 1.1–1.8.

The areas listed in the attachment and identified on Map 1 of the RFA were noted in the RFA to be indicative areas based on values held in the CRA database. These values included property boundaries and implied vegetation and old-growth values assigned to polygons derived from photo-interpreted structural forest mapping.

The RFA (Attachment 6, para 5) provided for a process to finalise boundaries of reserves to enable approval by State Parliament. This process required precise boundaries to be adopted following, where possible, easily identifiable features such as roads, rivers and ridges, or existing property lines. The final boundaries also needed to take into account field verification that the values recorded in the CRA for which the area was identified as a potential reserve actually were present and that the boundaries were appropriate to the identified values.

A small team from Forestry Tasmania and the Parks and Wildlife Service undertook the work over a twelve-month period. Field officers were consulted where necessary to obtain local information, and a contract botanist made some field surveys to verify values where there was a lack of information or some doubt as to the accuracy of the CRA data. The final boundaries of the reserves were prepared for gazettal at a scale of 1:25 000. These reserves, identified in tables 1.1–1.6 were gazetted in December 1998. The reserves listed in tables 1.7 and 1.8, and the former Deferred Forest areas identified in Table 1.9, were referred to the Public Land Use Commission (PLUC) for recommendations on tenure. Final plans for all of these areas were approved and gazetted in December 2000.

Changes to RFA indicative areas

Table 3 summarises information on each of the RFA-proposed formal reserves. It reflects the tables in Attachment 6 of the RFA. Also included are reserves recommended by the PLUC for former Deferred Forest areas.

Table 3 identifies:

- the RFA number as per Map 1 and Attachment 6;
- the RFA name and actual reserve name;
- the indicative reserve area as listed in the RFA;
- the actual reserve area as gazetted; and
- the reasons for any significant differences between indicative and actual areas.

It should be noted that Table 3 is not a list of new reserves created since the RFA. It is simply a reconciliation of what the RFA commitments were. Some areas in the Table, for example

Tasman National Park, were already a Formal Reserve under different classifications. Additional areas were reserved under the RFA Act that were not required to be under the RFA, for example some reserves created following the RPDC Central Highlands Crown Land Inquiry.

As foreshadowed there were many differences between the actual and final areas of formal reserves, for both reasons expected and unexpected. The reasons for the more significant changes included:

- Several small areas of land identified as public land in the CRA database were actually private freehold lands. Some was freehold land owned by public authorities (eg Hydro-Electric Corporation), some had been recently sold, and others were incorrect records in the GIS data.
- Some reserves identified on RFA Map 1 were mistakenly not included in the Attachment 6 tables.
- Areas of Crown land vested in the Hydro-Electric Corporation (HEC) were excluded from reserves, this land is held under an Act of Parliament and reservation will not be sought until the land has been divested following a comprehensive review of the HEC's land requirements. The HEC is reviewing all of its public and freehold land holdings with a view to rationalising them to areas essential for the conduct of its power generation activities. This process is likely to result in many of the areas proposed for reservation in the RFA being divested, but it will take some time to complete the review, survey, plan preparation and parliamentary approval. In the meantime, these areas are being managed by the HEC consistent with the maintenance of conservation values and are not available for timber harvesting.
- Many proposed reserves have been extended to include adjacent areas that were existing or proposed informal reserves, ex-Deferred Forest Land recommended by the PLUC for reservation, or existing forest reserves that would be better managed as a consolidated reserve by the Department of Primary Industries, Water and Environment.
- Some of the indicative area figures listed in the RFA tables were wrong. Actual reserve boundaries as shown on Map 1 are the same, but area figures are significantly different for some reserves. For some reserves the area figure stated in the RFA incorrectly included the area of a Formal Reserve that already existed.
- Some areas that were field-checked were found to not contain the values for which they were specifically identified for reservation. In others, the areas of values were larger or differently located: in two cases covering the whole area of a proposed reserve, and in other cases only parts of proposed reserves. Where the identified values were of forest communities already reserved well above target levels and no other values (such as wilderness, threatened species habitat) were identified, these areas were excluded from reservation on the basis that they would not have been identified for reservation in the RFA if the correct data had been available. Some of the changes involve the rarer communities for which there is little accurate data, with small total areas, and most areas are on private land. On public land these communities are, in any case, fully protected outside of reserves under the RFA by prescription.
- Some forest community areas when field-checked were found to be much less extensive than mapped for the RFA. In three cases, it no longer made practical sense to include the actual verified areas in a large Formal Reserve; instead, they will be protected through

new Informal Reserves. This is consistent with the approach taken in designing the CAR reserve system for the Tasmanian RFA.

- A few small areas of intensive disturbance from recent forest harvesting were excluded from peripheral areas of proposed reserves.
- The boundaries of some proposed reserves did not follow any identifiable feature. Where practicable, they were extended to sensible management boundaries, such as roads, resulting in significant increases in reserve area.
- In 2000 the State Government approved the RPDC's recommendations from its Central Highlands Inquiry. The Commission had recommended several additional reserves, some of which were contiguous with RFA proposed reserves and would protect additional areas of RFA forest communities above the level agreed in the RFA. These additions were also approved by Parliament in 2000.

Total area changes

The RFA identified an indicative area of 473 474 hectares of Formal Reserves to be created.

The actual area of Formal Reserves proclaimed was 512 766 hectares, including those reserves created from Deferred Forest Land referred to the PLUC.

Both of these figures include some areas that were already Formal Reserves.

Table 3 – Formal Reserves

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
NATIONAL PARKS (NP) AND STATE RESERVES (SR)				
1	(Lavinia NR ext.)	199	0	Area found to be private property
19	Mt William NP ext.	4275	4540	Minor changes to improve boundary definition and management
179, 182	St Marys Pass - St Patricks Head SR ext.	1194	1272	Minor changes to improve boundary definition and management
200	Little Beach SR	974	945	Minor changes to exclude clearfelled/regenerated coupe
229	Devils Gullet SR ext.	246	302	Minor changes to improve boundary definition
298, 304, 314, 474, 475, 476	Freycinet NP ext. (Friendly Beaches)	5696	4873	Error in RFA area estimate - actual area unchanged
312	Bluemans Creek SR ext. (Wye River)	1236	1095	Minor changes to exclude clearfelled/regenerated coupe
359	Franklin-Gordon Wild Rivers NP ext. (Counsel River)	110	141	Minor changes to improve boundary definition
362	Franklin-Gordon Wild Rivers NP ext. (Beech Creek)	3917	3927	Minor changes to improve boundary definition
389	Franklin-Gordon Wild Rivers NP ext. (Tiger Range)	1178	1140	Minor changes to improve boundary definition
411	Southwest NP ext. (Little Florentine River)	773	821	Minor changes to improve boundary definition and management
423	Southwest NP ext. (Styx River)	1033	1008	Minor changes to improve boundary definition
443	Southwest NP ext. (Blakes Opening)	3713	3715	
448	Quarantine Station SR	134	128	

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
454	Southwest NP ext. (Cook Rivulet)	335	335	
458	Southwest NP ext. (Farmhouse Creek)	335	334	
459	Southwest NP ext. (East Picton)	463	405	Error in RFA area estimate - actual area unchanged
467	Southwest NP ext. (D'Entrecasteaux River)	1442	1446	
468	Southwest NP ext. (Catamaran River)	398	394	
462, 464	Southwest NP ext. (Hastings Caves)	1095	1254	Minor changes to improve boundary definition and management
66, 469	Savage River NP	17785	17980	Minor changes to improve boundary definition and management
670	Cradle Mountain - Lake St Clair NP ext. (Dove River)	340	320	
671	Franklin-Gordon Wild Rivers NP ext. (Nelson Falls)	231	325	Minor changes to improve boundary definition and management
971	Little Peggs Beach SR (Crayfish Creek North)	134	140	
977	Lake Johnston NR	125	138	
989	Trevallyn SR	400	440	Minor changes to improve boundary definition
995, 83, 95	Hellyer SR ext.	2186	2195	Minor changes to improve boundary definition and management
471	Tasman NP	8312	8275	Error in RFA area estimate - actual area unchanged
	Total National Parks and State Reserves	58259	57888	

FOREST RESERVES (FR)

7	Shakespeare Hills FR	2236	2158	Minor changes to improve boundary definition and management
9	Plains Creek FR	880	862	Minor changes to improve boundary definition and management
13	Welcome Swamp FR	168	163	Minor changes to improve boundary definition and management

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
16	Oxberry Plains FR	379	330	Minor changes to improve boundary definition and management
18	Montagu Swamp FR	1581	1528	Minor changes to improve boundary definition and management
21	Martins Hill FR ext.	86	86	Area was already part of a FR
22	North Scottsdale FR	4110	4090	Minor changes to improve boundary definition and management
23, 24, 25, 30, 31, 34, 991	Lefroy FR	4014	3410	Some areas found to be private property; error in original area calculation
26	Montagu River FR (Roger River)	1017	1013	
27	(Mt Horror RAP ext.)	207	0	Ground check showed forest community mapping mostly incorrect; actual areas of target community now protected as new Informal Reserves
33	Trowutta FR ext (Sumac Road)	907	989	Minor changes to improve boundary definition and management; includes new area of ex- private property purchased by FT for conservation.
41	Luncheon Hill FR	1150	1030	Minor changes to improve boundary definition and management
42, 985	Frome FR (Frome Dam + Weld River RAP)	1019	940	Minor changes to improve boundary definition and management; dam impoundment excluded from reserve
46, 55, 986	Blue Tier FR	5092	5056	Minor changes to improve boundary definition and management; most excluded areas have been made new Informal Reserves as good FR boundaries not definable
47	Derby FR	212	200	Recreation reserve excluded; it is a Public Reserve
52	Andersons Creek FR (Yorktown)	246	324	Minor changes to improve boundary definition and management
53	Arthur River FR (Keith River)	3295	3229	Minor changes to improve boundary definition and management. Most of excluded area included in enlarged Savage River NP.
54, 57, 996	Dial Range FR (Mt Lorymer)	2369	2127	Error in RFA area calculation; minor additions to improve boundaries.
62, 70, 526, 982, 983, 984	Mt Victoria FR ext.	3665	4463	Error in RFA area calculation; minor additions to improve boundaries.
67, 79	Mt Maurice FR ext.	1450	1395	Minor changes to improve boundary definition and management
69	Laurel Creek FR (Mt Houssetop)	1062	1110	Minor changes to improve boundary definition and management
72	Bells Marsh FR	414	441	Minor changes to improve boundary definition and management

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
73	Mt Arthur FR	1030	871	Minor changes to improve boundary definition and management
77	Dismal Range FR	202	200	
89	Lady Nelson FR	163	160	
94	Eaglehawk Tier FR	836	0	Ground check showed forest community mapping mostly incorrect; actual areas of target communities protected as Informal Reserves
97	Mt Careless FR ext.	312	346	Minor changes to improve boundary definition and management
102	Raynors Hill FR	385	331	Minor changes to improve boundary definition and management
105	Ringarooma River FR	366	360	
106	Kohls Falls FR	149	146	
111	Paradise Hill FR	251	440	Extension to incorporate adjacent Informal Reserve at Paradise Plains
119	Tombstone Ck/South Esk FRs ext.	257	258	
124, 473	Reedy Marsh FR (inc. Brushy Dam)	2506	2506	
126, 133	Nunamara FR	765	289	Ground check showed forest community mapping largely incorrect; non target communities and clearfelled areas excluded.
128	Bridgenorth FR	41	41	
141	North Esk FR	630	625	
150	Teds Flat FR	231	249	Minor changes to improve boundary definition and management
155, 159, 175	Avenue River FR (includes Catos, Gleadow Ck ext)	2496	2470	RFA indicative area included part of an existing FR
156	Musselboro FR	435	0	Ground check showed forest community mapping mostly incorrect; majority is forest already adequately protected; actual areas of target communities protected as Informal Reserves.
165	Joy Creek FR	267	230	Minor changes to improve boundary definition and management
166	German Town FR	921	940	Minor changes to improve boundary definition and management
190	Dove River FR	2166	2424	Additional area added to improve management boundary
191	Mersey River FR ext (Liena)	429	478	Minor changes to improve boundary definition and management
193	Hatfield River FR	1163	1100	Minor changes to improve boundary definition and management
196	River Hill FR (Fishers Tier 1)	336	340	

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
201	(Fishers Tier 2)	494	0	Ground check showed forest community mapping mostly incorrect; target community E. viminalis not present; actual forest community already adequately protected
204	Fishers Tier FR	396	270	Ground check showed forest community mapping incorrect; boundary adjusted to protect actual area of target community
207	John Lynch FR (Que River 1)	2847	3128	Additional area added to improve management boundary
213	Pepper Hill FR (Mangana)	453	435	Heavily disturbed area excluded
214	Sawmill Creek FR (Que River 2)	749	870	Additional area added to improve management boundary
216	Midday Hill FR (Fishers Tier 4)	265	310	Ground check showed forest community mapping incorrect; boundary adjusted to protect actual area of target community and improve management
220	Break o'Day FR (Bare Rock)	312	332	Minor changes to improve boundary definition and management
221, 224, 227	Lower Marsh FR Creek ext.	527	546	Minor changes to improve boundary definition and management
230	Mackintosh FR (North Tullah)	1269	1026	HEC-vested land temporarily excluded pending review and divestment
236	Burns Peak FR	987	950	Minor changes to improve boundary definition and management
238	Boco Creek FR	884	930	Minor changes to improve boundary definition and management
245	Mt Kershaw FR	445	338	HEC vested land not included; to be added after divesting
248	Dickies Ridges FR	618	621	
276, 972	Hardings Falls FR	950	1009	Minor changes to improve boundary definition and management
277	Royal George FR	764	770	
284, 290	Swan River FR	3687	3153	Some clearfelled areas excluded. Some transferred to Informal reserve.
296	Cygnnet River FR	4344	4310	Minor changes to improve boundary definition and management
297	Apslawn FR	3206	2820	Minor changes to improve boundary definition and management; clearfelled coupe excluded.
321	Eastern Tiers FR (O'Connors Rivulet)	4125	4414	Includes part of Buxton River area (#347)
347	Buxton River FR /Tooms Lake FR	7565	5794	Part included in Eastern Tiers FR; Tooms Lake Water Reserve and Lake excluded as vested in Water Board. Will be Public Reserves.
353	Tungatinah FR (Tarraleah 1)	229	180	HEC vested land excluded

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
356, 976	Tarraleah FR (Tarraleah 2+ Tarraleah RAP)	629	627	
358	(Tarraleah 3)	56	0	Area is private property
390, 391	Tanina Bluff FR	235	244	Minor changes to improve boundary definition and management
392, 394	Mt Morrison FR	758	739	Minor changes to improve boundary definition and management
403, 406, 410	Mt Dromedary FR ext.	274	474	Boundary of reserve expanded to include adjacent Informal reserve
430, 432	Wild Bee FR (Lonnavele1,2)	473	535	Minor changes to improve boundary definition and management
433	Rimons Hill FR (Lonnavele 3)	385	410	Minor changes to improve boundary definition and management
437	(Huon River)	406	0	Ground check showed forest community mapping incorrect. Target community GG not present. Actual forest communities already adequately protected.
481	Arve Loop FR	955	939	Minor changes to improve boundary definition and management
523	Long Hill FR	566	558	Minor changes to improve boundary definition and management
528	Mt Bruny FR (Mt Banks)	689	1366	Boundary of reserve expanded to include adjacent Informal Reserve
975	Wayatinah FR	455	498	Minor changes to improve boundary definition and management
979, 980	Nicholas Range FR	827	822	Minor changes to improve boundary definition and management
981	Huntsmans Cap FR	218	216	
987	Mt Horror FR	1209	1133	Minor changes to improve boundary definition and management
988	Mt Stronach FR	1021	1038	Part of rifle range area added.
990	Den Ranges FR	403	400	
993	Deep Gully FR	2440	2537	Minor changes to improve boundary definition and management
995	Old Park FR	1584	1585	
997	Emu River FR	589	585	
998	Flowerdale River FR	292	290	
999	Crayfish Creek FR	307	315	
	Total Forest Reserve	101783	97265	
NATURE RECREATION AREAS (NRA)				
973	Coningham NRA	458	487	
974	Meehan Range NRA	482	486	

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
	Total NRA	940	973	
CONSERVATION AREAS (CA)				
187	Great Western Tiers CA (Mole Creek/Meander)	4780	4775	
226	Great Western Tiers CA (Jackeys Marsh)	2764	2660	Clearfelled area excluded
239	Great Western Tiers CA (Liffey)	596	630	
258	Great Western Tiers CA (Tumbledown)	5502	4275	HEC vested and owned areas excluded. HEC to define requirements; surplus areas planned to be added to Reserve with Poatina RAP at later date
272	Great Western Tiers CA (Poatina)	580	815	Additional area of Informal reserve added to link with Poatina RAP
292	Great Western Tiers CA (Threshermans Hill)	953	1060	Minor changes to improve boundary definition and management
301	Great Western Tiers CA (Millers Bluff)	4950	8280	Includes previous Forest Reserves not counted in RFA figure
964	Little Boobyalla River CA	474	480	
965	Heazlewood Hill CA	261	259	
966	Bernafai Ridge CA	1281	1282	
967	Southwest CA (part) (Cypress Ck RAP)	*	*	* As this area was already part of the larger Southwest Conservation Area, no action was required to make it a conservation area. However the status of the whole of the Conservation Area was changed by the <i>RFA (Land Classification) Act 1998</i> as it ceased to be available for logging (along with all conservation areas, nature recreation areas and regional reserves).
968	Southwest CA (part) (Spero River RAP)	*	*	* As this area was already part of the larger Southwest Conservation Area, no action was required to make it a conservation area. However the status of the whole of the Conservation Area was changed by the <i>RFA (Land Classification) Act 1998</i> as it ceased to be available for logging (along with all conservation areas, nature recreation areas and regional reserves).
969	Truganini CA	66	43	Private property excluded
	Total Conservation Area	22207	24559	

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
REGIONAL RESERVES (RR)				
978	Mt Murchison RR	5390	5610	Minor changes to improve boundary definition and management; HEC-vested land excluded.
970	Savage River RR	12157	13700	Minor changes to improve boundary definition and management; adjacent proposed RFA Informal Reserve added into Formal Reserve
963	Mt Dundas RR	11715	11540	HEC vested land excluded
	Total Regional Reserve	29262	30850	
OTHER AREAS REFERRED TO PUBLIC LAND USE COMMISSION - MINING DEVELOPMENT TENURE				
3	Darling Range CA	1256	1400	Field check indicated greater extent of Furneaux E. viminalis; boundary adjusted to include
5	Kentford Forest CA	97	94	
8	Cameron RR (part) (Whiterock Tier)	1776	4007	Adjoining non-allocated Crown land added
10	Dip Range RR	4524	4082	RFA area included existing Detention Falls CA which has been retained
12	Cameron RR (Mt Cameron East)	5902	6780	Increase due to inclusion of adjacent Crown land (ex west of Gladstone Deferred Forest) and Mt Cameron East RAP
14	Dismal Swamp FR	422	310	RFA area included the existing Nature Reserve
28	Bay of Fires CA	2186	2230	Minor changes to improve boundary definition and management
32	Blythe River CA	888	936	Minor changes to improve boundary definition and management
48	Mt Dial NRA (Dial Range 1)	429	450	Minor changes to improve boundary definition and management
49	Mt Montgomery NRA (Dial Range 2)	78	76	
56	Upper Blythe CA (Blythe River 2)	106	120	Minor changes to improve boundary definition and management
60	Donaldson River NRA	29971	30670	Minor changes to improve boundary definition and management
78	Arthur Pieman CA ext. (Lindsay River)	430	470	Minor changes to improve boundary definition and management

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
99	Savage River RR ext. (Horizontal Creek)	2634	2385	Area included in adjacent Savage River NP
104	Arthur Pieman CA ext. (Thornton River)	1170	1170	
135	Dasher River CA	196	200	
152	Savage River RR ext. (Roaring Meg Creek)	780	1595	Increase due to inclusion of adjacent ex-Deferred Forest Land near Savage River township and bringing RFA area out to Savage River Rd to improve management boundary
154	Mt Roland RR	7219	7145	Minor changes to improve boundary definition and management; existing Mt Roland CA was included in RFA area
170	Gog Range RR	1623	1645	Minor changes to improve boundary definition and management
172	Meredith Range RR	49481	66920	Additional area includes ex Deferred Forest (east of Stanley River) and Mt Ramsay and Parsons Hood RAPs. HEC vested areas excluded; to be added after HEC identifies and divests surplus land
185	Reynolds Falls NRA	13258	11700	Major area of difference included in Vale of Belvoir CA; minor changes to improve boundary definition; some adjacent proposed Informal Reserve near Mt Charter included
186	Sensation Gorge CA Ext.	152	60	Remaining area included in adjacent Dogs Head Hill FR to improve management boundary
197	Dove River CA (Dove River 2)	840	860	Minor changes to improve boundary definition and management
210	Swift Creek CA (Dove River 3)	474	462	Minor changes to improve boundary definition and management
222	Castle Cary RR (Rossarden)	4901	5995	Includes previous Castle Cary FR (902ha)
233	Moss Gully CA	410	407	
235	Tikkawoppa Plateau RR	4530	4535	
269	Avoca RR (St Pauls Dome 4)	943	934	
240	Barway Spur RR (St Pauls Dome 1)	167	167	
241, 264	St Pauls RR (St Pauls Dome 2)	3412	4400	Includes previous Mt Foster FR (1144 ha); area of incorrectly veg. mapped logged and regenerated forest excluded
241	Dog Kennels RR (St Pauls Dome 2)		592	Includes previous Dog Kennels FR

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
242	Mt Farrell RR	2640	1800	HEC-vested area excluded; to be added after HEC has completed survey and divestment of surplus land
253	Lake Pieman FR (Huskisson River)	1147	1055	Minor changes to improve boundary definition and management; HEC-vested area excluded
278	Mt Heemskirk RR	9787	10745	Additional area added to bring reserve boundary out to manageable line
279	Tyndall RR (Tyndall Range)	15968	12685	RFA area figure included existing Lake Beatrice CA; minor areas of HEC vested land excluded
281	Mt Dundas RR ext. (Mt Read ext.)	246	235	
286	Apsley CA (Bicheno)	459	459	
302	Mt Dundas RR ext. (Henty River)	26507	27045	Part of previous Henty FR included
313	Princess River CA (Eldon River)	9066	8635	HEC-vested area excluded. Error in RFA area
320	Coles Bay CA	1412	2292	RFA area incorrect
329	Crotty CA (Governor River)	3768	4420	Additional area added to bring boundary out to Lake Burbury shoreline
346	West Coast Range RR	17382	18030	Minor changes to improve boundary definition and management
369	Spinning Gum CA (Mt Bains 1)	416	490	Former Spinning Gum FR included
371, 372	Gravelly Ridge CA (Mt Bains 2,3)	1906	2285	Former Gravelly Ridge FR included
452	Woodbridge Hill CA	218	217	
460	Mountain Creek CA (Gordon 1)	329	325	
461	Mt Royal CA (Gordon 2)	132	132	
477	Cameron RR (Great Musselroe River)	758	9640	Increase due to inclusion of adjacent Gladstone ex Deferred Forest Land
	Total	232396	263287	
OTHER AREAS REFERRED TO PUBLIC LAND USE COMMISSION FOR TENURE RECOMMENDATION				
4	Naracoopa	108	0	Area is private property; Crown land sold several years ago
37	Briggs RR (Asbestos Range NP ext.)	2087	2095	

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
58	Mt Pearson SR	4511	4595	Minor changes to improve boundary definition and management
92	St Columba Falls SR ext.	147	155	
118	Mt Barrow SR ext.	1093	1120	Minor changes to improve boundary definition and management
132	Ravenswood	57	0	Commonwealth sold this block to Launceston City Council
161	Kate Reed NRA ext.	319		Most of the area is private property. Error in RFA land data
177	Ben Lomond NP ext. (Ragged Jack)	1417	1665	Minor changes to improve boundary definition and management
307	Central Plateau CA ext. (Pine Tier)	1197	1185	Minor changes to improve boundary definition and management
333	Dry Creek East NR	272	274	
No number	Alma Tier FR	0	284	Not included in RFA schedule by mistake
340	Alma Tier NR	34	34	
354	Butlers Ridge NR (Goat Hills)	3018	2885	Some clearfelled areas on edge excluded
355	Rocka Rivulet NR	261	260	
360	Shingle Hill FR	68	70	
367	Maclaines Creek FR	0	448	Not included in RFA schedule by mistake
368	Sand River FR	0	79	Not included in RFA schedule by mistake
373	Yarlington CA (Yarlington Tier)	66	68	
374	Basin NR (Pelham Tier 1)	24	24	
376	Dickinsons NR (Pelham Tier 2)	90	68	Part of RFA area was private
377	Pelham West NR (Pelham Tier 3)	272	290	
378	Pelham North NR (Pelham Tier 1)	67	67	
379	Heathy Hills NR	189	190	
380	Pelham NR (Pelham Tier 2)	48	49	
381	Long Tom CA (Devils Den 1)	20	20	
382	Devils Den CA (Devils Den 2)	57	82	Additional Crown block included
383	White Kangaroo CA (Gordons Ridge 1)	22	28	Actual area same. RFA area wrong.

RESERVE RFA ID NO.	ACTUAL NAME RFA name in brackets where different	INDICATIVE RFA AREA (HECTARES)	ACTUAL AREA RESERVED	COMMENTS
385	Gordons Ridge CA (Gordons Ridge 2)	156	165	RFA area wrong
384	Three Thumbs SR	3209	3120	Minor changes to improve boundary definition and management
386	Huntingdon NR (Green Valley 1)	55	56	
387	Andersons NR (Green Valley 2)	403	403	
388	Elderslie NR	100	100	
396	Cape Bernier NR ext.	1198	1145	Minor changes to improve boundary definition and management
418	Molesworth CA	18	74	Adjacent Crown block added
434	Eaglehawk Bay - Flinders Bay CA ext. (Flinders Bay)	176	180	
436	Snug Tiers NRA	5615	5575	Private property block excluded
438	Sherwood Hill CA (Chicks Perch)	356	555	Includes former Chicks Perch FR (207 ha)
440	Tinderbox NR	71	73	
451	Tasman NP ext. (Mt Spaulding)	1058	1050	
466	Southport Lagoon CA ext.	699	700	
497	Hardys Hill NR (Nubeena)	40	41	
499	Africa Gully NR	29	30	
	Total other areas	28627	29302	
OTHER DEFERRED FOREST LANDS REFERRED TO PUBLIC LAND USE COMMISSION FOR TENURE RECOMMENDATION				
	Vale of Belvoir CA		4295	ex Bonds Range Deferred Forest Land, includes former Lake Lea RAP and some of Reynolds Falls reserve (RFA # 185)
	Leven Canyon RR		2467	Part of Leven Deferred Forest Land plus MUF west of river
	Parting Creek RR		1880	ex Deferred Forest Land north of Zeehan
	Total		8642	
	GRAND TOTAL	473474	512766	

Attachment 8 – Program to Protect CAR Values on Private Land

A program to protect CAR values on Private Land by the voluntary participation of private landholders in the CAR Reserve System will be established based on the following principles.

Principles

- (i) The program will commence after prioritisation of the CAR values and implementation arrangements are established and will continue for an agreed period. Any extension to this would require the agreement of the Parties.

Following signing of the Tasmanian Regional Forest Agreement in November 1997, the Private Forest Reserves Unit was established in the Department of Primary Industries, Water and Environment to manage the Private Forest Reserves Program, with the aim of establishing a system of CAR reserves on private land. The unit created the organisational structures, processes and voluntary mechanisms, as described in the RFA. No fixed period was agreed for establishing the system of CAR reserves on private land. However, an objective of the strategic plan was to establish the private land component of the CAR reserve system within four years of the plan being approved (ie by July 2002).

By approving the strategic plan, the Parties validated it for a period of four years (from July 1998).

See <http://www.gisparks.tas.gov.au/privaterfa/index.html> for details of the program, unit and strategic plan.

- (ii) Participation in the program by private landowners will be voluntary and no non-voluntary instruments will be used to achieve protection of CAR values on Private Land without proper compensation being paid.

Participation in the Private Forest Reserves Program is entirely voluntary. This was confirmed as Finding No. 2 of Environment Australia's mid-term review of the Program (November 1999).

- (iii) The program will seek to maximise agreed CAR values on Private Lands in a cost-effective manner.

The program uses a range of approaches and voluntary mechanisms, including market-based instruments such as financial incentives for conservation covenants, *de facto* competitive tendering for environmental services and a revolving fund.

The financial incentives for entering into a perpetual conservation covenant are based on one-third of the market value of the land – which accords with payments by other agencies for restrictive easements over land titles.

By 30 June 2001, over 90 landowners agreed to place perpetual conservation covenants over more than 15 000 hectares of targeted native forests of high conservation significance (see Table 2). The success of the Private Forest Reserves Program is due in part to the financial incentives. Although modest, they are appreciated as recognition of the landowner's contribution to conservation for the public good.

By negotiating with a variety of landowners with similar forest types, the unit and landowners are *de facto* competitive tenderers. The Government states its conservation priorities – and the landowners state the opportunity cost for them to commit to conservation

management (ie the minimum that they would charge to provide the required environmental services). As a result, the most cost-effective, cost-minimising options are selected (see Table 1).

Rate rebates are being offered by an increasing number of local governments. Currently, Latrobe, Meander Valley and Break O'Day Councils have introduced rate-rebate schemes for perpetual conservation covenants. Such schemes increase the effectiveness of the program.

Capital Gains Tax (CGT) has been a major disincentive and psychological barrier to landowners to participate in the program. However, recently announced amendments by the Federal Treasurer and Prime Minister have made a significant impact, with financial incentives to landowners with pre-CGT land being exempt from taxation. The negative impact of CGT on landowners with post-CGT land has been decreased but not removed.

The revolving fund process has been used by the program to protect an endangered community of *Eucalyptus morrisby*, and will be used on a small scale to complement other approaches where it is cost-effective and beneficial in terms of conservation outcomes. Revolving a property by covenanting and sale enables the reuse of program funding.

The suite of mechanisms used in the program has proved to be cost-effective. From the time the program began until 30 September 2001, the average payment to landowners to secure native forests under perpetual conservation covenants was \$196 per hectare. The average cost of extremely high priority forests that were purchased by the program during the same period was \$1 036 per hectare (annual costs in terms of payments to landowners are shown in Table 1).

Covenanting is generally effective where the landowner has a proven record of managing land to maintain RFA values. The advantages of having an on-ground manager with a keen interest in the property often outweighs having a distant land manager with more widely dispersed responsibilities.

Table 1 Annual cost of forested properties secured by purchase or perpetual covenants (costs = payments to landowners)

	Year 1 (1998/1999)				Year 2 (1999/2000)				Year 3 (2000/2001)			
	No	Area (ha)	Cost (\$)	Cost (\$/ha)	No.	Area (ha)	Cost (\$)	Cost (\$/ha)	No	Area (ha)	Cost (\$)	Cost (\$/ha)
Purchased	2	360	353 231	981	8	1 629	1 391 495	854	3	1 352	1 716 326	1 269
Covenanted	0	0	0	0	5	476	45,160	95	18	2 229	485 300	218
TOTAL	2	360	353 231	981	13	2 306	1 436 655	623	21	3 581	2 201 626	615

By 30 June 2001, the program had assessed CAR values of forests on more than 125 000 hectares of private land on over 500 properties. The number of properties approved for covenanting or purchase by the Advisory Committee of the program more than trebled during the year from 30 (30 June 2000) to 94 (30 June 2001). The total area of forests approved for protection more than doubled during this period from 6 500 hectares to 15 400 hectares (Table 2).

Table 2 Forested properties approved for purchase or covenants in perpetuity

	Year 1 1998/1999		Year 2 1999/2000		Year 3 2000/2001		TOTAL July 1998 to July 2001	
	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)
Purchased	9	2 450	5	1 050	2	300	16	3 800
Covenanted	5	1 050	11	1 950	62	8 602	78	1 602
TOTAL	14	3 500	16	3 000	64	8 902	94	15 402

Perpetual conservation covenants were registered on 18 properties during the year, more than three times the total number previously registered in the program. The total area of forests secured by perpetual conservation covenants increased from 476 hectares (30 June 2000) to 2 705 ha (30 June 2001) – a four-fold increase (Table 3). In the three months to 30 September 2001, the total covenanted area has increased to 4 020 hectares (28 covenants).

Table 3 Forested properties secured by purchase or covenants in perpetuity

	Year 1 1998/1999		Year 2 1999/2000		Year 3 2000/2001		TOTAL July 1998 to July 2001	
	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)	No.	Area (ha)
Purchased	2	360	8	1,629	3	1,352	13	3,341
Covenanted	0	0	5	476	18	2,229	23	2,705
Management Agreement	0	0	0	0	1	365	1	365
TOTAL	2	360	13	2,105	22	3,946	37	6,411

- (iv) The CAR values will, wherever possible, be secured in perpetuity.

To 30 September 2001, all of the properties except two have been secured in perpetuity by purchase or covenants. Hence, 94 percent of the forests on private land protected so far by this program have been secured in perpetuity.

- (v) Implementation of the program will be the responsibility of the State, in accordance with paragraphs 9 to 22 below.

The Tasmanian Government has responsibility for delivery of the program through the Secretary, Department of Primary Industries, Water and Environment. The General Manager of Resource Management and Conservation, who also chairs the Advisory Committee, is responsible for ensuring the agreed outputs and the program delivers outcomes.

- (vi) CAR values identified on Private Land as suitable for inclusion in the CAR Reserve System may be incorporated through a variety of approaches, including stewardship agreements and voluntary sale.

If a landowner is willing, and has forests that have been assessed by the CAR Scientific Advisory Group meeting the JANIS criteria for the CAR reserve system, then negotiations will be opened. The Program seeks to protect CAR values through perpetual conservation covenants. However, if forests have a very high conservation value, and the landowner rejects perpetual conservation covenants, then the negotiator may discuss the option of a fixed-term covenant (at least 20 years) or a fixed-term management agreement (at least 20 years). The financial incentive offered for a fixed-term covenant is proportionally less than for a perpetual covenant, and no up-front incentive payment is offered for a management agreement. Management agreements are with the landowner for the specified period and do not transfer with the title if the property is sold.

In exceptional cases, where it appears to be the only way of securing protection for a particular forest type, or for the best remaining example of a particular forest type, then purchase may be considered.

(vii) Valuations will be conducted by a registered valuer.

All valuations for purchases are prepared by registered valuers.

(viii) Private landowners will be afforded the opportunity of playing an active role in the formulation of management plans.

Conservation plans are jointly prepared with landowners for each covenanted property.

Strategic Plan and Identification of Priorities

1. A strategic plan for implementing the program will be prepared by the Department of Environment and Land Management [now Department of Primary Industries, Water and Environment, "DPIWE"] with advice from the Scientific Advisory Group referred to below. The strategic plan will be submitted to the Parties for joint approval following its consideration by the Advisory Committee also referred to below.

The strategic plan for the program was drafted with input from the CAR Scientific Advisory Group (CARSAG), re-drafted after input from the Advisory Committee, and then submitted to the Parties for joint approval.

2. The plan will be developed as soon as possible but no later than 3 months from the commencement of the Agreement. The plan will identify priorities in relation to the protection of CAR values. The priorities will be based on protecting the values identified during the Comprehensive Regional Assessment (CRA) process in accordance with the JANIS Reserve Criteria.

The strategic plan identified priorities for conservation of CAR values based on the results of the CRA process and in accordance with the JANIS reserve criteria. The Parties jointly approved it on 27 July 1998.

3. In the context of (2) above, priority attention will be given to protecting rare, vulnerable and endangered vegetation communities, rare and depleted old-growth forests and the Priority Species identified in Attachment 2. Attention will also be given to protecting National Estate values on Private Land.

The strategic approach to be used by the Private Forest Reserves Unit in establishing the CAR reserve system on private land is outlined in the strategic plan. The CAR Scientific Advisory Group has undertaken a comprehensive analysis of CAR values on private land that considers bioregional as well as State-wide priorities. It has developed the "Strategic Reserve Design" to facilitate identification and securing of the best possible reserve design on private land to protect CAR values. The design includes consideration of National Estate values.

4. The implementation of the strategic plan will source, in part, funds from the Natural Heritage Trust of Australia's reserve as established under the *Natural Heritage Trust of Australia Act 1997* (Commonwealth). The strategic plan will therefore be framed consistent with the purposes of the Reserve under the Act and the NHT Partnership Agreement, including the objectives and outcomes of relevant NHT programs under that Agreement. Subject to the agreement of the Parties, the strategic plan will formally be made an attachment to the Partnership Agreement.

The strategic plan is consistent with the purposes of the Trust's reserve under the *Natural Heritage Trust of Australia Act 1997* and the Natural Heritage Trust (NHT) Partnership Agreement and both parties have endorsed it. Funds are delivered in accordance with the Partnership Agreement and are provided through NHT Financial Agreements.

5. The plan will also identify:
 - required objectives;

- mechanisms for creating landowner awareness;
- priority setting including timelines; and
- implementation review and monitoring arrangements.

The strategic plan identifies objectives, mechanisms for creating landowner awareness, priority setting, and review and monitoring arrangements. In accordance with the plan, the program has progressed well towards its objectives. Considerable establishment work during the first phase of the project enabled solid and rapid growth after the formal launch (16 June 2000). The program grew exponentially in 2000 in terms of landowner interest, properties being assessed and approved by CARSAG, and properties approved by the Advisory Committee. The Private Forest Reserves Unit has applied project management methods to ensure clear priority setting and timeliness, and has in place a business plan, risk management strategy, and effective review and monitoring arrangements. The Tasmanian Department of Premier and Cabinet provides project management and quality advisory services, and independent quality review is undertaken quarterly by John Smyrk, a Project Management Consultant from Sydney.

A communication strategy has been developed and is being implemented. A program logo and metal signs have been produced and are widely used for promotional purposes. The program had displays at numerous agricultural shows and exhibitions, including Agfest.

The Web Site www.pfrp.tas.gov.au was significantly upgraded and revamped. It is now easily accessed by landowners, with monthly news articles and reports on the program's progress. It also provides access to relevant publications and links to related organisations and programs.

Advisory Committee

6. The Parties will establish an Advisory Committee that will include representatives nominated by Department of Primary Industries, Water and Environment (DPIWE), Private Forests Tasmania (PFT), the Forest Practices Board (FPB), the Tasmanian Farmers & Graziers Association (TFGA) and the Tasmanian Conservation Trust (TCT). The Committee will include a representative of each of the Parties and be chaired by the DPIWE representative.

The Advisory Committee was established in accordance with the RFA. As well as meeting quarterly, the committee considers property proposals out of session on a monthly basis, and provides *ad hoc* advice to the General Manager of Resource Management and Conservation on other matters, including draft discussion papers and submissions.

7. In addition to providing advice to the Parties on the strategic plan, the Committee will, on an ongoing basis, monitor the program and, where appropriate, make recommendations designed to improve the delivery and effectiveness of the program.

The Advisory Committee, from time to time, makes recommendations to improve the delivery and effectiveness of the program.

Scientific Advisory Group

8. DPIWE will establish a scientific advisory group to advise on formulating the strategic plan and conservation management prescriptions.

The CAR Scientific Advisory Group (CARSAG) meets fortnightly. The Chair is provided by DPIWE and the Private Forest Reserves Unit provides executive and secretariat support. The members, invited on the basis of their relevant scientific expertise, include officers of Forestry Tasmania, DPIWE Nature Conservation Branch, and Forest Practices Board, together with independent scientific consultants.

Implementation

9. The program will be administered in accordance with this schedule and the strategic plan agreed between the Parties.

The program is administered in accordance with the RFA and the strategic plan.

10. Overall responsibility for the administration of the program will reside with the State Minister ("the Minister") who administers the *National Parks and Wildlife Act 1970* (Tas.) in consultation with the Minister administering the *Private Forests Act 1994* (Tas.).

Overall responsibility lies with the State Minister for Primary Industries, Water and Environment.

11. DPIWE will be responsible for the day-to-day management of the program.

The Department of Primary Industries, Water and Environment are responsible for the day-to-day management.

12. Funds for the program, when made available to the State, will be placed in a trust account and dispersed in accordance with the mechanisms contained in this schedule and the strategic plan.

Funds for the program made available to the State are placed in a special trust account and dispersed according to the RFA and the strategic plan.

13. Projects for which funding is sought will be submitted by DPIWE to the Committee for their advice and recommendation on priorities consistent with the strategic plan.

Project proposals are submitted by DPIWE to the Advisory Committee in accordance with the strategic plan.

14. Following consideration by the Committee, DPIWE will submit to the Minister projects for approval and the Committee's advice.

Following consideration of the Committee, DPIWE submits projects and the Committee's advice to the Minister for approval.

15. Where funds are to be sourced from the NHT, the Commonwealth Minister will, in accordance with the *Natural Heritage Trust of Australia Act 1997* (Cwth), ensure that the appropriate procedures are followed in relation to the relevant proposals, with a view to the approval of disbursement of funds to the Tasmanian trust fund.

Where funds are to be sourced from the Natural Heritage Trust (NHT), the State Minister writes to the Commonwealth Environment Minister seeking funding from the trust fund to implement particular proposals.

The Commonwealth Minister or Ministers in accordance with the *Natural Heritage Trust of Australia Act 1997* consider funding proposals and the processes outlined in the Partnership Agreement, including the objectives and outcomes of relevant NHT programs.

The following criteria for assessing NHT proposals are outlined in the negotiating strategy, an attachment to the strategic plan:

- 1) will the project lead to lasting on-ground improvements in securing environmental values and management of natural resources?
- 2) is the project good value for taxpayers' money?
- 3) Is the project feasible and technically sound?
- 4) Is the Trust funding catalytic rather than displacing core business activities of the proponent?
- 5) Are the project proponents demonstrating ownership and long-term commitment to ongoing management?

The Commonwealth assesses each proposal and, where approved, funds are made available to the Tasmanian lead agency under the conditions of a financial agreement as prescribed in the Partnership Agreement.

16. The identification of potential areas for protection will be through two mechanisms:
 - Direct approach for priorities identified in the strategic plan; and
 - Timber Harvesting Plans [now Forest Practices Plans] and Private Timber Reserves processes.
17. Where potential areas for protection are identified through Forest Practices Plans and Private Timber Reserve processes, decisions will be made in a specified period to ensure the interests of private landowners are not compromised.

The program has been implemented in accordance with clauses 16 – 17.

Resourcing

18. The Commonwealth will provide funding for the program. Tasmania will contribute to the ongoing administrative costs of the program including monitoring.
19. Under the Natural Heritage Trust of Australia Act 1997 and through the Natural Heritage Trust Partnership Agreement between the Commonwealth and the State of Tasmania dated 7 October 1997, agreed commitments under that Agreement will be made available to facilitate private landholders of forested land to protect the environment and heritage values of that land in accordance with this Attachment. Funds may also be used to purchase land, with the agreement of the owner.

As at October 2001, the Commonwealth had approved expenditure of \$5,292,525 through the Natural Heritage Trust to protect the environment and heritage values of forests on private lands.

20. Funding proposals for the Natural Heritage Trust of Australia Reserve will be considered by the Commonwealth Minister or Ministers in accordance with the requirements of the Natural Heritage Trust of Australia Act 1997 and the processes outlined in the Partnership Agreement, including the objectives and outcomes of relevant Natural Heritage Trust programs.

Funding for the Private Forest Reserve Program is provided from a range of NHT programs managed by Environment Australia and the Ministry of Agriculture, Fisheries and Forestry Australia.

The choice of which program should fund a proposal is simplified by the strategic plan's requirement that proposals should also meet the objectives of an NHT program.

The proposals for Private Forest Reserves recommended by the Advisory Committee and approved by the State Minister fall in to a range of reserve types, in keeping with NHT program objectives.

21. Proposals may be considered quarterly for consideration. Submissions will be made by the relevant Tasmanian Minister direct to the Commonwealth Minister for the Environment outside of the State Assessment Panel process outlined in the Partnership Agreement to maintain confidentiality in recognition of the commercial-in-confidence and privacy issues involved for individual landholders.

The Parties have agreed that proposals may be submitted for NHT funding more often than quarterly to ensure that lengthy approval processes do not disadvantage landholders.

22. Each proposal submitted will be assessed by the Commonwealth and where approved, funds will be made available to the Tasmanian lead agency under the conditions of the Financial Agreement as prescribed in the Partnership Agreement and any other condition as agreed between parties.

Funds are provided through NHT Financial Agreements. Resourcing of the Program has been in accordance with clauses 18 – 22. The Commonwealth provided an initial \$10 million,

which has been deposited into the Tasmanian Trust Fund, and a further \$4.9 million (of a programmed \$20 million) to reimburse payments to June 2001. Interest on the Tasmanian Trust Fund accrues to the program.

Attachment 9 – Maintaining a Permanent Forest Estate

The State has developed a policy and arrangements to maintain a permanent Forest Estate on a State-wide basis.

5. Appropriate action will be taken by the State if the area of any Forest Community within an IBRA (Interim Biogeographic Regionalisation of Australia) region decreases to a level approaching the nominated minimum level for that region. The State will conduct a formal review of the area of Forest Communities within each IBRA region on a five-yearly basis and report on the findings in the 5 yearly review of the Agreement.

Section 4C(fa) of the *Forest Practices Act 1995* requires the Forest Practices Board monitor and report annually on harvesting and reforestation activity in relation to the maintenance of a permanent forest estate. The Permanent Forest Estate policy (PFE policy) is provided for in Attachment 9 of the Regional Forest Agreement. It prescribes that the area of native forest will be retained above minimum thresholds, expressed as a percentage of the native forest estate assessed in 1996 under the Regional Forest Agreement. Since 1997 these thresholds have been:

- Statewide level: 80% of the 1996 native forest estate to be maintained.
- Bioregional level: Interim Biogeographic Regionalisation for Australia (IBRA 4).

Current proportion of native forest in reserves	Proportion of native forest to be maintained
0–30%	>80%
30–60%	>60%
>60%	current reserve area

- Forest communities: At least 50% of the current area in each bioregion to be maintained.

During 1999/2000 the Board established administrative mechanisms to monitor and report on compliance with the Permanent Forest Estate policy. These mechanisms are based on the existing planning system, whereby forest practices officers preparing forest practices plans must notify the Board's senior botanist of any communities likely to have significance for conservation. Guidelines on the classification of communities have been provided to Forest Practices Officers. Field inspections are undertaken as necessary to verify the classification of communities and to consult with land managers on management options. The senior botanist consults with scientists in DPIWE with respect to any communities that have a priority for conservation. Suitable areas are referred to the Private Forest Reserve program.

Data on changes to the native forest estate by forest community within the Tasmanian bioregions are given in the *Annual Report of the Forest Practices Board* (available at www.fpb.tas.gov.au).

Overall, the reduction in the native forest estate, as recorded by the Forest Practices Board, over the four years from 1 July 1997 to 30 June 2001 amounts to approximately 62 831 hectares (2% of the estimated 1996 native forest estate) as a result of conversion (mainly for plantation or agriculture) under Forest Practices Plans. The maintenance of the native forest estate in each bioregion is summarised in Table 1 below. Caution is required in interpreting the data for the following reasons:

- The data relate to planned operations, some of which may not have been completed in the reporting period;
- Areas of forest communities given in forest practices plans are generally gross areas that do not exclude reserves such as streamside reserves. The figures relating to conversion of native forest are therefore likely to be overestimated for some communities;
- The proportions of forest communities converted are based on the area of each forest as mapped on the RFA Forest Communities Map (1996). The mapping of forest communities is continuously reviewed (see comments below), and in some cases the estimated 1996 extent of communities has been shown to be inaccurate;
- Some figures from previous years have been revised in the light of more accurate information.

The data do not include figures for clearing that is not subject to regulation under the *Forest Practices Act 1985*. Such clearing is considered to be negligible in more commercial forest types, but could be locally significant in some drier forests and woodlands, with low timber quality that have been cleared for agriculture.

The changes in extent of the Permanent Forest Estate reported here are not readily comparable with changes in extent of forest communities reported in Indicator 1.1.a of the report, *Sustainability Indicators for Tasmanian Forests, 1996-2001* for the reasons given above and the different methods used to collate data. In Indicator 1.1.a changes in the extent of forest communities are mapped by aerial-photo interpretation and from ground surveys of harvesting and other forestry operations. Forestry Tasmania maps annual changes on public land, and Private Forests Tasmania maps information supplied by large industrial companies and known records of farm-forestry activity on private land. Indicator 1.1.a maps the actual change in net area, but does not fully reflect agricultural clearing and small-scale activity on private property. Indicator 1.1.a indicator indicates a reduction in the native forest of 1.2% compared to the 2% reported above. Indicator 1.1.a presents an underestimate of clearing while the Permanent Forest Estate data presents an over-estimate of the change.

Table 1 Native forest in Tasmania and Tasmanian bioregions at 30 June 2001, relative to the estimated extent in 1996.

Bioregion	Native forest estate (as % of 1996 area)
Furneaux	100.0
Woolnorth	94.8
Ben Lomond	96.2
Midlands	98.6
Freycinet	99.3
Central Highlands	98.6
West Southwest	99.7
D'Entrecasteaux	97.4
STATE	98.0

In summary, Tasmania's native forest estate has been maintained to at least a level equivalent to 98 percent of the native forest area that existed in 1996. The current native forest area is

well in excess of the Permanent Forest Estate policy thresholds within all bioregions. The level of conversion of some communities is approaching the thresholds, but refusal of applications for conversion of native forest has not been required to date. Action will continue to be taken by the Forest Practices Board as necessary to ensure that all communities are maintained in accordance with the Permanent Forest Estate policy.

The accuracy of the mapping of forest communities within IBRA regions is being reviewed through several processes. New mapping, including corrections to areas incorrectly mapped on the RFA Forest Communities Map, is being incorporated onto DPIWE databases. Revised mapping has been, or will be, incorporated in revisions of conservation targets and strategies of the Private Forest Reserve Program, and in monitoring and guidelines related to the Tasmanian Permanent Forest Estate policy.

The main sources of updated forest mapping are:

- systematic surveys undertaken through the Tasmanian Vegetation Management Strategy (TASVEG mapping);
- opportunistic mapping by other DPIWE programs, including Bushcare and Private Forest Reserve Program;
- data collected by the Forest Practices Board and Forestry Tasmania;
- studies undertaken through NHT funding (eg natural–resource mapping in the Tasman/Sorell and Meander Valley municipalities); and
- targeted assessments of communities with a narrow regional distribution and a high priority for conservation, undertaken under the auspices of CAR Scientific Advisory Group and the Private Forest Reserve Program, with assistance from the Forest Practices Board and Forestry Tasmania.

The targeted assessments include specific consideration, by field survey and expert opinion, of many communities with localised distributions within IBRA Regions. In addition surveys (mainly Statewide) target the following threatened communities: *Eucalyptus brookeriana* wet forest; inland *Eucalyptus amygdalina* forest; *Eucalyptus viminalis* wet forest on basalt; and shrubby *Eucalyptus ovata* – *Eucalyptus viminalis* forest.

The surveys that have also provided better information on the distribution of other threatened communities (e.g. *Melaleuca ericifolia* coastal swamp forest, inland *E. tenuiramis* forest) are often associated with these communities.

8. The State will, in addition, in respect of Private Land introduce by the year 1999 mechanisms to encourage native vegetation retention and management including the protection of riparian vegetation, consistent with the agreed outcomes of the national Vegetation Initiative as set out in the Tasmanian Partnership Agreement.

The national goal of the Natural Heritage Trust's Bushcare Program is to reverse the long-term decline in the quality and extent of Australia's native vegetation cover. Under the respective "Partnership Agreement" between Tasmania and the Commonwealth, performance indicators, against which Tasmania's contribution to the national goal can be assessed, have been agreed. In addition there is a range of national and Tasmanian Bushcare (National

Vegetation Initiative) objectives and outcomes, which are elaborated in the Partnership Agreement.”

The Minister for Primary Industries, Water and Environment announced a policy framework on 3 July 2001 that comprised a package of related measures:

- amend the *Forest Practices Act 1985* and regulations to (a) include non-commercial tree clearing and (b) improve the definition of vulnerable land;
- review the Permanent Forest Estate Policy;
- complete and maintain the vegetation database (TASVEG) to enable the continued analysis of data for non-forest vegetation (and the updating of RFA maps);
- identify non-forest vegetation conservation priorities; and
- facilitate conservation on private land through incentives, conservation plans and education and awareness.

Legislation to amend the *Forest Practices Act 1985* has been passed by the Tasmanian Parliament with a commencement date of 1 January 2002. The legislation provides that all tree clearing is subject to the provisions of the Act, including the need to undertake environmental assessments and protect significant natural and cultural values in accordance with the Forest Practices Code. The definition of vulnerable land under the Forest Practices Regulations is also to be amended to protect areas set aside under previous forest practices plans, for example as riparian reserves.

The Permanent Forest Estate Policy is currently under review. The review is addressing the current vegetation retention thresholds, both the total threshold and the individual thresholds for different forest communities.

In addition, a program of consultations is under way with the Tasmanian Farmers and Graziers Association and other key stakeholders, including forestry interests, the Tasmanian Conservation Trust and the Local Government Association of Tasmania to develop mechanisms for managing native non-forest vegetation on private land. It is expected that the mechanisms will focus on the preparation and accreditation of property-based plans.

Incentive programs funded by the Natural Heritage Trust to fence off and manage riparian areas have been introduced. Funds for riparian vegetation management are available under Rivercare, Bushcare and Regional Natural Resource Management strategies, primarily through devolved grant schemes.

In addition, Tasmania has, with Natural Heritage Trust assistance, developed a Protected Areas on Private land program that, with landholder approval, covenants areas of non-forest conservation significance as well as forested areas that do not meet the priorities of the Private Forest Reserve Program. Land Tax relief and rate rebates are available in some municipalities as incentives. See also Attachment 8 for mechanisms under the Program to Protect CAR Values on Private land (the Private Forest Reserves Program).

11. The State agrees that the policy will be reviewed as part of the ongoing review of the Forest Practices Code and in accordance with the provisions for public comment and review set out in the *Forest Practices Act 1985*.

The *Forest Practices Act 1985* was amended in 1999 to require the Forest Practices Board to monitor and report on the maintenance of the Permanent Forest Estate. The reports of the

Board are tabled in Parliament and are publicly available in the annual reports of the Forest Practices Board (www.fpb.tas.gov.au).

The Forest Practices Code was amended in 2000 to require that forest operations be conducted in accordance with the State Policy on the Maintenance of the Permanent Forest Estate. It was decided that the thresholds stated in the policy should not be prescribed in the Code, as these are matters for broader governmental policy. During 2001, the Tasmanian Government initiated a review of the Permanent Forest Estate policy, to which the Scientific Advisory Group for the CAR Private Forest Reserve program submitted a technical report. The State has agreed to consult with the Commonwealth Government and with stakeholder groups before making any amendments to the policy.

This review is expected to be completed in 2002.

Attachment 10 – Improvements to Tasmania’s Forest Management Systems

The State intends to further improve its forest management systems across forest management agencies and land tenures by:

1. Implementing the State Policy Setting New Standards for Water Quality;

Tasmania’s *State Policy on Water Quality Management* came into operation in September 1997. The policy provides the mechanism for implementing the National Water Quality Management Strategy in Tasmania. Protected Environmental Values, which represent current values and uses of waterways, are being set for all surface waters in Tasmania, including surface waters in State forest, private and reserved land. The values-setting process is based on extensive community consultation. It is expected to be completed for surface waters by early 2002.

The Protected Environmental Values and subsequent Water Quality Objectives provide a framework for measuring the success of water-quality management strategies. The policy requires that:

- emissions from diffuse sources of pollution should be reduced and managed through developing and implementing best-practice environmental management, and so as not to prejudice the achievement of Water Quality Objectives;
- to protect and maintain water quality, forest practices as defined in the *Forest Practices Act 1985* should be carried out in accordance with the relevant provisions of the Tasmanian Forest Practices Code and have regard to the policy;
- the Forest Practices Code should be reviewed to ensure that it is consistent with the Policy. This review has been completed and the Code amended to reflect review recommendations; and
- the authorities responsible for resource management and environment protection should ensure that adequate monitoring is carried out to determine whether Water Quality Objectives are being achieved.

The requirements of the policy have been included in the draft Reserve Management Code of Practice. The policy provides a mechanism for auditing the efficacy of the Code with respect to water-quality management.

2. Developing a State Policy on integrated catchment management;

The development of a framework for Integrated Catchment Management in Tasmania in the form of a State Policy was deferred following a decision by the State Government to review the way in which State Policies were developed.

Shortly afterwards, in December 1999, the Commonwealth Government released, for public comment, the discussion paper *Managing Natural Resources in Rural Australia for a Sustainable Future*, which outlined a proposed framework for Natural Resource Management (NRM) in Australia after 2000. The paper highlighted the need for more effective regional structures and improved partnerships between the three levels of Government, industry and the community, to remove the barriers to progress in solving Australia’s natural-resource management problems. The framework focusses on a regional approach and on empowering

the community to achieve effective and long-term sustainable natural-resource management. This approach has been adopted in the National Action Plan for Salinity and Water Quality.

As a result, the Tasmanian Government has developed a strategic framework for natural resource management in Tasmania that incorporates integrated catchment management. See <http://www.dpiwe.tas.gov.au/nrm.html> for details.

3. Developing and implementing a Threatened Species Protection Strategy and recognising the role of sub-regional plans where appropriate (by 31 December 1998) and a Tasmanian Biodiversity Strategy (by 31 December 1999);

The Threatened Species Strategy was released in December 2000, but actions outlined in the strategy have been implemented since the first draft was published in 1999. A draft subregional plan for Bruny Island has been finalised and is expected to be published by March 2002.

Actions in relation to the management of threatened species are widely dispersed through the community in recovery plans and listing statements.

A draft of *Tasmania's Nature Conservation Strategy* was prepared by the State Biodiversity Committee in June 2001 and released for public comment. It contains 64 recommendations on ways of improving conservation and management of Tasmania's native vegetation, fauna and geodiversity on land, in freshwater and marine environments. The draft covers a huge range of issues from native vegetation retention, water resources, weeds and pest management, strategic planning, key industry and general public involvement. It identifies 15 priority areas including land clearance, long-term resourcing, pests, improving freshwater protection and increasing public involvement. The document is in line with the *National Strategy for the Conservation of Australia's Biological Diversity* (1996), but because it includes geological processes and geodiversity in its scope, the title was broadened to reflect this.

During the 12 months of development, considerable public comment was received through the release of ten key issues papers. These covered such topics as weeds, pests and disease, land clearance, planning procedures, industry involvement, reservation targets and who pays. The public comment period closed mid-September 2001. The comments from diverse groups were largely in favour of the approach taken. They have been collated for the State Biodiversity Committee and provided to the Minister.

4. Implementing the *Historic Cultural Heritage Act 1995*;

The Tasmanian *Historic Cultural Heritage Act 1995* was brought into force on 28 February 1997. By 1 September 2001, 4 958 sites had been listed on the Tasmanian Heritage Register.

5. Developing new legislation in relation to Aboriginal cultural heritage to replace the *Aboriginal Relics Act 1975*;

Tasmania has not yet introduced legislation to replace the *Aboriginal Relics Act 1975*. However, reform of this legislation remains on the agenda of the current State Government.

In November 1998 a discussion paper was released for public comment. The Government then initiated a further period of consultation with the Aboriginal Community. This process

was overtaken by events associated with the Tasmanian Government program to return land to the Aboriginal community, which was given a higher priority.

Subsequently the consideration in the Commonwealth Parliament of the Aboriginal and Torres Strait Islander Heritage Protection Bill 1998 resulted in a decision to further defer consideration of Tasmanian legislation. The Bill has been subject to extensive consultation with indigenous people as well as State and Territory governments, the mining industry and farmers.

As the Bill sets standards that State legislation would be required to achieve in order to gain Commonwealth accreditation for State laws, it has been decided to await the outcome of the Commonwealth Parliament's consideration of the draft Bill.

6. Further developing and applying flexible silvicultural systems on Public Land to promote the sustainable production of long-rotation speciality timbers, particularly in the south and north-west regions;

This commitment has been met through the ongoing research and development detailed below.

Long-rotation specialty timbers grow in rainforests, as an understorey in wet eucalypt forests, and in blackwood swamp forests. In 1997, Forestry Tasmania prepared a technical bulletin on rainforest silviculture (Forestry Tasmania 1998) for managing rainforest areas designated for specialty timbers production. This bulletin is underpinned by decades of research (eg Hickey and Wilkinson 1999).

Further work has also been undertaken on rainforest resource estimates for long-term production of special species timbers and the designation of additional areas as special timbers management units. A special timbers management unit is an area set aside for long-term management of special timbers production. Intensive Forest Management including clearfelling is excluded from such units. They are located primarily in the north west in Murchison District but do occur in all five Forestry Tasmania Districts.

A major trial has been established in wet eucalypt forest at the Warra Long-term Ecological Research site to develop silvicultural alternatives to large clearfells for areas where habitat, specialty timbers or aesthetic values have additional emphasis (Hickey and Neyland 2000). The treatments are being established from 1998–2002 and include clearfell, burn and sow (CBS), CBS with understorey islands, stripfell/patchfell, 10% dispersed retention, 30% aggregated retention and single tree/small group selection. The treatments will be fully evaluated in 2005.

Blackwood swamps continue to be managed for sustainable production of blackwood sawlogs. In addition, Forestry Tasmania has begun a program to establish 750 ha, between 2000 and 2005, of fenced regeneration of wet eucalypt forests on sites with a rich source of ground-stored blackwood seed. The fencing is needed to exclude browsing animals.

This approach, described in Jennings and Dawson (1998), will be an important means of significantly increasing the blackwood resource. The program will also establish 250 ha of blackwood plantations over the same period. Blackwood is the fastest growing, and one of the most desirable, of the specialty timbers. The use of intensive silvicultural techniques to

increase the blackwood resource potentially allows the partial substitution of blackwood for slower-growing specialty timbers.

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7. Developing and implementing within the first five years of this Agreement, State-wide policies across all tenures on fire management, nature-based tourism and recreation management, cultural-heritage management on forest lands, and forest pest and disease management;

Progress has been made in all subject areas toward this milestone. Tasmania is assessing the policy framework and gaps in the suite of policies under each of the categories of fire management, nature-based tourism and recreation management, cultural-heritage management in forest, and forest pest and disease management.

There is a State-wide policy framework for fire management. This comprises a Tasmanian Fire Management Council, a State Fire Management Policy and an Inter-agency Fire Management Protocol. These are backed by a set of fire area plans. There is a full suite of legislation covering fire management on all land tenures and increasingly effective integration between the State and local tiers of government.

The issue raised by the Ecologically Sustainable Forest Management (ESFM) Expert Advisory Panel of the adequacy of the fire-research panel and its coverage of all land tenures needs further investigation.

Tourism Tasmania and Department of Primary Industries, Water and Environment are developing a policy on nature-based tourism and recreation management.

The Cultural Heritage Policy framework has been substantially advanced since the report of the ESFM Expert Advisory Panel. The *Historic Cultural Heritage Act 1995* is now operative, the new reserve system is in place, and there are interagency protocols governing the management of State-wide information databases, transfer of information and referral protocols for decisions on cultural-heritage management.

The significant gap in the policy framework is the need to replace the *Aboriginal Relics Act 1975* with a contemporary statute governing the management of Aboriginal Heritage (see response to point 5 above).

The Forest Pest and Diseases Management Policy is well served by the existing suite of policy and statutory instruments. A Tasmanian Forest Health Advisory Committee was established in September 2001. The Committee has two key roles and they are firstly incursion management and secondly to provide a network to stakeholder groups.

8. Ensuring that management plans are implemented for all State forest and National Parks by the year 2000, and all other reserves within the Formal Reserve element of the CAR Reserve System by the year 2003 or as soon as practicable thereafter. Management plans will include objectives and be periodically reviewed to assess performance against each objective;

Seven new district forest management plans for all State forests in Tasmania were developed with community input and approved during 1999 and 2000; Murchison, Bass, Huon, Derwent, Mersey, Circular Head and Eastern Tiers. The Plans are available at <http://www.forestrytas.com.au/forestrytas/pages/topics.html>. Their implementation will be reviewed annually. District management plans have all been amended to cater for the management requirements of formal reserves on State forest.

Management plans are in force for 13 of Tasmania's 18 national parks as at November 2001 and they are:

Ben Lomond 1998	Douglas-Apsley 1993
Freyinet 2000	Maria Island 1998
Narawntapu 2000	South Bruny 2001
Strzelecki 2000	Tasman 2001
Cradle Mountain/Lake St Clair 1999	Franklin/Gordon Wild Rivers 1999
Hartz Mountains 1999	Walls of Jerusalem 1999
Southwest* 1999	

* A management plan altering the 1999 plan in the East Cockle Creek area of the Southwest National Park has been prepared but has yet to be approved.

Of the five remaining national parks, draft management plans for Mt Field, Savage River and Mole Creek Karst National Parks have been released for public comment.

Following amendments to the *National Parks and Wildlife Act 1970*, effective June 2001, all representations made in response to these draft plans will be reviewed by the Resource Planning and Development Commission (RPDC) and a publicly available report to the Minister before the plans are approved. Reports on representations on these plans are currently being prepared for the RPDC. The management plans for Mt Field, Savage River and Mole Creek Karst are expected to be in force in 2002.

The development of management plans for Rocky Cape and Mt William national parks has been deferred pending negotiations on the possible transfer of the land to the Aboriginal community. Currently, options are being considered for State and Aboriginal community cooperation to progress management planning and subsequent park management of these national parks. Completion of these management plans depends on satisfactory working arrangements being agreed with the Aboriginal community.

The milestone of management plans for all reserves under the *National Parks and Wildlife Act 1970* by 2003 will be met by preparing generic management plans for each reserve category (State reserves, nature reserves, game reserves, conservation areas, nature recreation areas and regional reserves). Preparation of these plans will start in 2002, and they are expected to be in force by December 2003. Considerable material that will be useful for formulating these plans has already been prepared or identified.

Specific management plans for individual priority reserves will continue to be prepared as necessary.

Tasmania does not include in these commitments any reserves created independently of the RFA since its signing.

9. Implementing as a high priority the mechanisms for improving the transparency and independence of the Forest Practices Board;

This commitment has been met as explained below.

The *Forest Practices Act 1985* was amended in 1999 to formally separate the Forest Practices Board from Forestry Tasmania and establish the Board as an independent statutory authority.

The membership of the Board was also amended to remove the position previously held by the managing director of Forestry Tasmania. Two additional positions were created to bring expertise to the Board in the areas of local government, and the harvesting and processing of timber. The new composition of the Board is as follows

- (a) Secretary of the Department responsible for the *Environmental Management and Pollution Control Act 1994*;
- (b) Director of Private Forests Tasmania appointed under s.8(1)(c) of the *Private Forests Act 1994* (being a person with expertise in forest or related sciences);
- (c) Director of Forestry Tasmania appointed under s.12E(1)(b) of the *Forestry Act 1920* (being a person with expertise in forest or related sciences and knowledge of and experience in forestry);
- (d) a person having expertise and knowledge of local government, who is a representative of a municipal area in which forestry is a major land use;
- (e) a person having expertise in the harvesting and processing of timber.

The Chief Forest Practices Officer is responsible for overseeing the day-to-day administration of the forest practices system. The officer is appointed under s.4J of the *Forest Practices Act* as a person who must have:

- (a) extensive expertise in forestry; and
- (b) extensive experience in forest operations; and
- (c) knowledge of the sustainable management of forests; and
- (d) management skills.

The Chief Forest Practices Officer is assisted by a team of scientists and specialists, with expertise in the areas of botany, zoology, geomorphology, cultural heritage, soils water visual landscape, forest operations and auditing. These officers conduct research, monitor operations and provide assistance to Forest Practices Officers.

10. Continuing to adequately resource the system surrounding the Forest Practices Code (including compliance, implementation, education, training, review, research) and maintaining appropriate contributions by industry to ongoing management costs associated with the Code.

This commitment has been met and ongoing processes put in place as detailed below.

The objective of the Tasmanian forest practices system is to deliver sustainable forest management in a way that is, as far as possible, self-funding (Schedule 7 *Forest Practices Act 1985*). The Act also provides under Section 44 that certain functions of the Board will be paid out of money allocated by Parliament.

The industry has been self-funding in implementing the *Forest Practices Act* by providing the following services:

- preparation and certification of forest practices plans;
- supervision of forest practices;
- training and education of contractors, operators and forest practices officers.

The Board estimated the value of these services to be \$7 million per year. This is the cost that would otherwise be borne by the government if the forest industry did not employ forest practices officers to plan and supervise forest operations.

Self-funding of activities conducted by the Forest Practices Board

The self-funding activities of the Board are primarily related to the direct cost of the services provided by the Board's Research and Advisory programs. The arrangements for funding are:

- 50% of the funding is contributed through a voluntary contribution from Forestry Tasmania to cover the cost of operations on publicly owned forests;
- 50% of the funding is contributed for operations on privately owned forests by a voluntary contribution from wood processors to cover the cost of operations on privately owned forest.
- additional income from research grants and consultancies.

The total revenue received from the self-funding activities of the Board amounts to about \$1.1 million per year.

The Forest Practices Board, in accordance with Section 4E(1)(a) of the *Forest Practices Act*, reports to Parliament on the extent to which the forest practices system is self-funding. The Board has reported that the system has continued to be adequately self-funded. The Board has also reported that the Forest Industries Association of Tasmania and Forestry Tasmania have established a joint research fund to support projects that have a high priority for advancing the scientific knowledge that underpins the forest practices system.

Funding of the Forest Practices Board by Parliament

Section 44 of the *Forest Practices Act* provides that the costs and expenses incurred for the following activities are to be paid out of monies provided by Parliament:

- a) annual assessment of the forest practices system and forest practices plans;
- b) preparation of the Annual Report to Parliament under s.4F;
- c) detection and investigation of breaches of the Act;
- d) laying of complaints and prosecuting offences;
- e) payment of compensation for the refusal of Private Timber Reserves;
- f) remuneration of the Chief Forest Practices Officer;
- g) administrative support for the Chief Forest Practices Officer;

h) exercise of the Board's powers and functions.

Total revenue received for the independent regulatory functions of the Board amounts to about \$412 000 per year.

Full details on the funding of the Forest Practices Board are given in the annual reports available at the following website: www.fpb.tas.gov.au.

11. Developing and implementing by the year 2000, a code of practice for reserve management to cover all environmental practices, including guidelines concerning erosion risk from roads and tracks within reserves.

The process of developing the draft Reserve Management Code of Practice (the Code) has been overseen by a steering committee of experienced staff from the Department of Primary Industries, Water and Environment, (DPIWE), Forestry Tasmania, Mineral Resources Tasmania and the Department of Premier and Cabinet.

The development of the draft Code has been the subject of lengthy and extensive consultation with specialist staff, reserve (field) managers and middle-management staff from DPIWE and Forestry Tasmania.

Delays in finalising and releasing the draft code are attributable to a change in staff, the complexity of the document encompassing a wide range of reserve management activities, and the requirement for consensus on the Code's content.

The draft Code was released for public comment in late 2001. After incorporation of public comment and final editing, the Code is expected to be finalised in 2002.

Resourcing and enforcing the Code will be an ongoing issue, but will be particularly critical at the beginning when support systems must be developed and staff trained.

12. In relation to the Forest Practices System, including the Forest Practices Code, ensuring that:

- where the management intention for the Forest or Private Land is to regenerate forest, timber harvesting plans will specify best-practice reforestation standards and provide for ongoing monitoring; and
- where endangered species have been identified in an area for which timber-harvesting plan approval is sought by private landholders, the plan will include conditions which ensure the application of appropriate management prescriptions to those species.

The establishment and implementation of the ongoing processes detailed below has met these commitments.

Amendments to the *Forest Practices Act 1985* in 1999 provided that all reforestation activities must be covered by a forest practices plan certified in accordance with the Forest Practices Code. The amended Forest Practices Code 2000 details the reforestation standards that must be achieved.

The Forest Practices Code 2000 contains procedures that must be followed where threatened species occur, or potentially occur, on private land. The procedures have been agreed with the Director of the Parks and Wildlife Service, who administers the *Threatened Species Protection Act 1995*. Under the procedures, forest practices plans must contain endorsed prescriptions for any threatened species that may occur within the area covered by the plan. The prescriptions are derived from expert planning tools, including the Forest Botany Manuals, Threatened Fauna Manual, and the Threatened Fauna Advisor. Independent experts have scientifically endorsed these planning tools. Forest Practices Officers who have been trained and accredited use the tools, seeking further expert advice where necessary.

Specialists from the Forest Practices Board provide advice and monitor the implementation of the prescriptions in conjunction with specialists from the Threatened Species Unit of DPIWE.

Compliance with prescriptions for threatened species and with reforestation requirements is monitored at three levels under the general monitoring provisions of the *Forest Practices Act*, as follows:

1. Specialists from the Forest Practices Board in association with the Threatened Species Unit of DPIWE provide advice and monitor the implementation of prescriptions.
 2. Under amendments to the *Forest Practices Act* introduced in 1999, a certificate of compliance must be lodged with the completed forest practices plan. The certificate must be completed by a forest practices officer, who must report on compliance with all aspects of the forest practices plan, including compliance with threatened species prescriptions and of reforestation requirements.
 3. Compliance with the planning processes and implementation of prescriptions within the forest practices plan, including threatened species and reforestation requirements, is assessed in the Board's 15 per cent independent audit of forest practices plans.
13. Ensuring that management plans for Formal Reserve and Informal Reserve elements of the CAR Reserve System clearly identify the CAR values identified in the CRA and the actions being taken in each reserve to appropriately manage those values.

This commitment has been met for both State forest and National park tenures as detailed below.

Forest management plans identify the formal reserve and informal reserve elements of the CAR Reserve System on State forest. Management prescriptions for the protection of those values often coincide with routine protective measures. Where more specific measures are determined for recovery plans or particular vegetation or animal communities, the particular requirements are being, and will continue to be, implemented.

Management plans under the *National Parks and Wildlife Act 1970* for the Formal Reserve component of the CAR Reserve System identify the CAR values in the relevant reserve and provide objectives, policies and actions for managing them.

Attachment 11 – Public Reporting and Consultation Mechanisms

Existing Commitments

Current public reporting and consultative mechanisms relevant to the management of Tasmania's forests include:

- preparation and amendment of forest management plans under the *Forestry Act 1920* (Tas) every 10 years;

All current forest management plans were prepared with community input during the years 1999 and 2000.

- preparation of annual three-year wood production plans for State forest;

This process has continued during the first five years of the RFA. Before plans are approved, there is local consultation, particularly with local government.

- changes to the lists of species, preparation of and amendment to the Threatened Species Strategy, Recovery Plans and Threat Abatement Plans all of which have been developed under the *Threatened Species Protection Act 1995*;

Details of changes to the listing of species under the Act are contained in indicator 1.2.b of the "Sustainability Indicators for Tasmanian forests" report (available at www.dpac.tas.gov.au/divisions/policy/rfa/rfa2002.pdf). Lists under indicator 1.2.a of that report indicate which species are subject to recovery plans. Further details of activities under the *Threatened Species Protection Act* are given in responses to clauses 32 to 37 of the RFA.

- changes to the Register under the *Historic Cultural Heritage Act 1995*;

Reporting and consultation on additions to, or deletions from, the register are in accordance with the Act, and regularly published in the Tasmanian Government Gazette.

- reviews of guidelines to the Forest Practices Code (Tas) and comment on proposed revisions to that Code;

Since the signing of the RFA, the Forest Practices Code has been subject to three independent reviews and to a major revision, as reported under clause 94. Public comment on these processes was sought and considered by the Forest Practices Advisory Council, which is made up of representatives of key stakeholder bodies.

- preparation, amendment and review of management plans for reserves under the National Parks and Wildlife Act 1970;

It is standard practice to consult with stakeholders and interested parties when first preparing a reserve management plan. Issues papers are published to stimulate further public consideration and input; in all cases draft plans are published in accordance with the Act and public submissions invited (these, and the agency's intended responses, are now reviewed by the Resource Planning and Development Commission (RPDC). The RPDC advises the Minister before finalisation of a plan. The same procedures apply where plans are reviewed and intended to be amended.

- preparation of management plans for lands covered by the *Crown Lands Act 1976*;

Provisions for the preparation of management plans for Public Reserves were incorporated in amendments to the *Crown Lands Act 1976* contained in the *Regional Forest Agreement (Land Classification) Act 1998*. These requirements came into force on 31 December 2001.

- nomination, preparation and possible contravention of Recovery Plans and Threat Abatement Plans, all of which are prepared under the *Endangered Species Protection Act 1992* (Cwth);

Provisions for public reporting and consultation have continued to be implemented.

- listing of places on the Register of the National Estate under the *Australian Heritage Commission Act 1975* (Cwth);

Proposed and final listings are advertised in local and national newspapers, in the Commonwealth of Australia Gazette, and on the Internet at the following address:

<http://www.ahc.gov.au/heritage/register/index.html>.

- publication of annual reports by Forestry Tasmania, DPIWE, Private Forest Tasmania, the Forest Practices Board, the Cooperative Research Centre for Sustainable Production Forestry, and the Tasmanian Forest Research Council;

Annual reports have been produced by the above organisations during the review period.

- publication of five- yearly State of the Environment and State of the Forests reports;

The most recent *State of the Forests Report* and *State of the Environment Report* were published in 1998 and 1996, respectively. The next reports in both cases will be published in 2002.

New reports to be prepared by the State

1. Complete and publish silvicultural guidelines for the management of commercial forest types by 31 December 1998.

Two technical bulletins were required to meet this milestone. They were No.8 (Lowland Wet Eucalypt Forest) and No.9 (Rainforest Silviculture). Both were published in July 1998. A full list of the current Forestry Tasmania silvicultural bulletins follows:

1. Eucalypt Seed and Sowing (1991)
 2. High Altitude *Eucalyptus delegatensis* Forests (1990)
 3. Lowland Dry Eucalypt Forests (1991)
 4. High Altitude *E. dalrympleana* and *E. pauciflora* Forests (1990)
 5. Silvicultural Systems (1994)
 6. Regeneration Surveys and Stocking Standards (1996)
 7. Remedial Treatments (1992)
 8. Lowland Wet Eucalypt Forest (1998)
 9. Rainforest Silviculture (1998)
 10. Blackwood (1991)
 11. Silvicultural Use and Effects of Fire (1993)
 12. Monitoring and Protecting Eucalypt Regeneration (1999)
 13. Thinning Regrowth Eucalypts (1998)
2. Publish by 31 October 1998 a description of the methods of calculating sustainable yield on Public Land, including special-species timber sawlogs.

The document *Calculating the sustainable yield of Tasmania's State forests* by S. B. Whiteley was prepared in late 1998 and published in *Tasforests* Vol 11 (December 1999).

It is also available at <http://www.forestrytas.com.au/forestrytas/pages/tasforestsonline.html>

3. From the 1997/98 financial year, relevant agencies will include in their annual reports a report on the outcome of compliance audits for codes of practice, and the monitoring of forest regeneration success and trends.

The annual reports of the Forest Practices Board have reported on compliance audits for the Forest Practices Code since financial year 1989/90. The reports present the results of a stratified random sample equivalent to at least 15 percent of Forest Practices Plans certified over the preceding year. The audit covers compliance within the following categories:

- Rooding
- Bridges
- Harvesting
- Snig tracks
- Landings
- Stream reserves
- Site preparation
- Planning (Forest Practices Plan) and general compliance with plan provisions
- Reforestation
- Local government consultation
- Flora
- Fauna

Until financial year 1997/98, the area of native forest regenerated was reported in Forestry Tasmania's annual report. In subsequent years, Forestry Tasmania has also reported on the percentage of regenerated forest meeting the required stocking standard (see Technical Bulletin No. 6 above).

Regeneration surveys are carried out only after seedlings are clearly established and expected to develop into trees; this is generally between one and three years after harvesting. The trends in regeneration success are also reported on in Indicator 2.1g in the *Sustainability Indicators for Tasmanian Forests* report.

Private Forests Tasmania does not monitor or report on reforestation of private land.

Reporting on the success of reforestation on all lands is now a requirement of the *Forest Practices Act 1985*, through compliance reporting to the Forest Practices Board. In addition, the Board will monitor reforestation in its independent audit.

Once the Reserve Management Code of Practice is approved and in force, the Department of Primary Industries, Water and Environment will undertake an annual compliance audit of reserves under the *National Parks and Wildlife Act 1970*. The results will be published in the annual report.

5. By 30 April 1998, a document describing the Management Decision Classification System will be released. This document will include information on the classification criteria for each zone and summaries of special management zones.

The document, *Management Decision Classification: A system for zoning land managed by Forestry Tasmania*, written by S. Orr and A. M. Gerrand, was distributed to State agencies and the Commonwealth on 29 May 1998. It was later published in *Tasforests Vol 10* (December 1998) and is also available at

<http://www.forestrytas.com.au/forestrytas/pages/tasforestsonline.html>

By the 31 March 1999, prepare and release a revised manual for the Management Decision Classification System, including prescription guidelines for special management zones.

The revised *Management Decision Classification Users Manual* was publicly released in May 1999 and updated in August 2001. The system is in use in all Forestry Tasmania Districts. The manual is available at

<http://www.forestrytas.com.au/forestrytas/pages/publications.html>

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Attachment 12 - RFA Forests – Employment and Industries Development Strategy

Implementation

3. The Parties agree to contribute in appropriate ways to the implementation of the specified actions within this Strategy:
 - The Commonwealth agrees to support the Strategy by providing funding as in clause 101 of the Agreement for a number of specific actions; and
 - The Commonwealth agrees that its contribution to funding for other actions for which it is responsible, or jointly responsible, will be obtained through existing industry development and vocational skills programs. The Commonwealth will encourage Tasmanian applications for assistance under these programs, for actions included in this strategy.

The Commonwealth has provided \$13 million to Tasmania (as per clause 101(ii)) for implementation of the Employment and Industry Development Strategy initiatives.

Specifically funded initiatives include:

- \$10 million for eucalypt plantation development (see clauses 14 and 15 below);
- \$3 million for specific industry development initiatives as follows:
 - \$1.6 million to the Forests and Forest Industry Council for researching and assisting with the implementation of new processing technology to support the existing Helsham Industry Transition Development Fund (see clause 18 below);
 - \$0.4 million to Forestry Tasmania for planning and implementing long-rotation supply of special-species timbers (see clause 27 below);
 - \$0.6 million to Private Forests Tasmania for resource enhancement on private land; and
 - \$0.4 million to the Forest Practices Board for implementing of the Permanent Forest Estate monitoring requirements.

Other Commonwealth funding provided under clause 101 relevant to Attachment 12 initiatives are:

- \$57 million for implementing new forest-management initiatives on State forest (see clauses 14 and 15 below);
- \$10 million for three new infrastructure projects:
 - \$6 million for roads (see clause 17 below)
 - \$3 million for tourism (see clause 10 below);
 - \$1 million for reserve management (see clause 10 below).

Generic Industries Development Actions

4. The Parties agree to jointly implement the following generic actions:
 - microeconomic reforms, including those in the National Competition Policy and reforms for both land and sea transport, aimed at improving the competitiveness of Australian industry;

A review of the *Forestry Act 1920* under the National Competition Policy (see www.ncc.gov.au) was completed, and legislative amendments passed and enacted in 2000 (see clause 87). This has placed Forestry Tasmania on a similar competitive footing to other forest managers.

Along with Department of State Development service-delivery initiatives, the Department of Infrastructure, Energy and Resources is reviewing the introduction in Tasmania of Intelligent Vehicles on Tasmania's road system, which have greater productivity than standard vehicles.

The National Competition Council was to review State forestry activities against the competitive neutrality and structural reform clauses of the Competition Principles Agreement (1995). This was part of the assessment of whether States would receive their full third tranche payments under National Competition Policy by 30 June 2001.

The Commonwealth's Competitive Neutrality Complaints Office released a research report in May 2001 entitled *Competitive Neutrality in Forestry*. It noted that, for the purpose of competitive neutrality, Forestry Tasmania is classified as a Government Business Enterprise with full-cost attribution for equivalent regimes and a dividend regime

- facilitating production and marketing networks between existing and emerging industry participants, including by:
 - facilitating access to relevant Commonwealth assistance programs to develop integrated industry structures and strategic partnerships (ie networks); and
 - facilitating export.

The Tasmanian Department of State Development has supported three marketing networks: Style of Tasmania; Furniture Component Network; and the Business Builders Program. The Business Tasmania Division of the department has provided funds for a number of networks, including Tasmanian Kiln-dried Timber and Tasmanian Special-species Timber.

The Commonwealth Department of Industry, Science and Resources (DISR) delivered components of the Wood and Paper Industry Strategy (WAPIS) focussed on downstream and value adding aspects of the industry. This included funding for a Tasmanian-based Client Manager. The manager, together with Forestry Tasmania, the Department of State Development and the Forests and Forest Industry Council have actively promoted the following networking initiatives:

- exploration of export market opportunities for Tasmanian timber;
- creation of an export facilitation area to secure sales of both timber and furniture to Asian customers;
- advice to help clients access Commonwealth programs;
- support of production and marketing networks through making grants to Style of Tasmania, Tasmanian Kiln-dried Timber and Tasmanian Special Timber – Special Species timber accreditation; and
- development of a network to supply components to larger mainland manufacturers.

Tourism Tasmania is working with industry to establish key sector marketing groups, which are developing business and marketing plans, including joint marketing.

Austrade, through its Export Market Development Program, provided two grants to encourage businesses to promote exports by reimbursing some of their promotional expenses. These grants, one each in 1997/1998 and 1999/2000 totalled \$26,097.

- continuing to jointly assist in funding, where appropriate, prefeasibility and feasibility studies for forest-based industry projects which have strategic significance and economic potential for the State and the nation.

Forestry Tasmania's Forestry Growth Plan highlighted several significant proposals that required funding for feasibility studies. Complementing these initiatives, the Department of State Development has assisted eligible companies to access the Commonwealth's Feasibility Study Fund (see below for details).

The Forests and Forest Industry Council has funded, in full or in part, pre-feasibility studies into the manufacture of Orientated Strand Board (OSB) and engineered flooring. Aspects of the production of rotary-peeled veneer and ancillary products such as laminated-veneer lumber have also been investigated.

The Feasibility Study Fund program has supported one project in the timber industry in Tasmania since 1997. In January 2001, Invest Australia approved an application to the Feasibility Study Fund program from Kortas Veneer and Plywood Pty Ltd (KVP), an Australian subsidiary of the Korean-based company Sam-O Enterprises Pty Ltd. The pre-feasibility study examined the commercial viability of KVP establishing a \$35 million rotary-peeled hardwood veneer mill near Judbury in Southern Tasmania. The mill is expected to have a turnover of about \$30 million per annum, which will largely be exported, and generate direct employment of some 120 people.

Invest Australia committed \$37,500 towards the cost of the pre-feasibility study, which totalled \$150,000. The Tasmanian Government through the Department of State Development, also committed \$37,500, and KVP the remaining \$75,000. The pre-feasibility study has been completed and Sam-O is currently scoping a full feasibility study for the project.

The Commonwealth is encouraged by the findings of the Jaakko Poyry report "*Investment Opportunities in the Australian Forest Products Industry*" and is using it as a basis for attracting investment in timber growing and processing. The report is available from the publications (under the Forestry heading) of the following website: www.affa.gov.au

5. The State agrees to implement the following generic actions:
 - ensuring the dissemination of market information through key industry groups working with industry to develop voluntary product-quality systems, and where applicable, to develop packaging and presentation systems similar to those used by Tasmanian manufacturers that compete successfully in national markets;

The State Government is actively progressing market research programs, to provide industry with information on manufacturing customers, and multiple-use forest visitor information.

The *Tasmania Together* process developed goals and benchmarks that included increasing the proportion of businesses, agencies and Government business enterprises that are independently certified against State, national and international environmental, occupational health and safety, and quality-assurance standards.

Tasmania is actively supporting the development of the Australian Forestry Standard (AFS), which will provide a voluntary forest-management standard for all forest growers.

- introducing an integrated development-approval system and land-leasing system for Public Land which complements the principles and provisions of the State's planning and environmental legislation;

The Davis Review in 1999 examined the development-approval system in National Parks and reserved lands, and sought to bring the process under the *Land Use Planning and Approvals Act 1993* and the Resource Planning and Development Commission (RPDC). The *National Parks and Wildlife Act 1970*, was consequently amended to provide for independent reviews of representations on draft management plans. Tourism developments in State forest are also subject to the *Land Use Planning and Approvals Act*.

The Department of State Development has developed an integrated development-approval information service through the Business Licence Information Service as well as an on-line Aquaculture approval information, to complement the State's Resource Management and Planning System, which encompasses environmental and resource-management legislation.

- utilising the 'one-stop-shop' strategy for over-the-counter or electronic transactions involving approvals, licensing and payments; and

Along with the Business Licence Information Service and Aquaculture Business Approval information, the Department of State Development has developed a heavy-industry sites database, which examines infrastructure provisions for industrial sites. Both this department and the Department of Infrastructure, Energy and Resources have, through direct client-management programs, created one-stop 'seamless' facilitation through the conceptual to the approval phases of development.

The Tasmanian Government has expanded the network of Service Tasmania outlets throughout the State to provide a "one-stop-shop" approach to a range of approvals, licences and payments. Electronic approvals and payments are also available through the Service Tasmania website www.service.tas.gov.au.

- examining requirements for basic electricity, water and transport infrastructure in key areas for development to achieve international competitiveness.

The Department of State Development's audit of forestry, timber and paper industries in 1999 (www.dsd.tas.gov.au/publications/indaud2.html) identified significant infrastructure requirements, and complements the heavy-industry database and the Department of Infrastructure, Energy and Resources' State-wide infrastructure audit. Combined they to form a comprehensive strategic policy framework to address competitiveness.

Generic Employment and Skills Development Actions

6. Both Parties agree to facilitate the coordination of programs between Government departments, industry and training providers to ensure efficient and effective delivery of training covering the important areas of:
 - business management and technology;
 - use of technology in all aspects of industry;
 - safety and effective work practices;
 - marketing and marketing technology; and
 - design.

A major State Government initiative was the Department of State Development's 1999 audit of forestry, timber and paper industries (www.dsd.tas.gov.au/publications/indaud2.html), which investigated training needs and skills shortages in the industry. The Office of Vocational and Educational Training has supported programs that focus on quality assurance

and the implementation of quality systems and quality control in the forest-growing, forest-harvesting, sawmilling and processing sectors of the industry.

TAFE Tasmania and Tourism Tasmania have worked in conjunction with other agencies to ensure industry needs-based training is available and accessible. Initiatives have included:

- the Australian Outdoor Adventure Training Program;
- several customised industry/TAFE joint ventures in hospitality training;
- training programs for staff of Forestry Tasmania and the Department of Primary Industries, Water and Environment, as well as tourism operators who have licensed access to Crown land;
- a stronger focus on business-management skills in the 2001 Vocational Education and Training Strategy for the sector;
- in conjunction with the Tasmanian Forest Industry Training Board raising awareness of the Forestry Practices Code and its implications; and
- working with the industry and training providers to ensure heavier emphasis on occupational health and safety.

The Commonwealth, through the Australian National Training Authority, funds the Forest and Forest Products Employment Skills Company (FAFPESC) which is the industry owned and managed national training advisory body.

The Forests and Forest Industry Council, in conjunction with the FAFPESC and industry training providers, is currently reviewing existing competencies in timber drying to suit Tasmanian applications.

FAFPESC was given a \$120 000 grant from the Commonwealth Department of Industry, Science and Resources for an industry promotion and marketing strategy.

7. The State will work with industry to coordinate on-the-job training curricula with TAFE, University of Tasmania and other training providers to maximise consistency, efficiency and effectiveness of on-the-job and off-the-job training while minimising the disruption to operations.

The Skills Response Unit in the Department of State Development is responsible for identifying skills shortages and facilitating mechanisms for overcoming shortages.

TAFE Tasmania, Forestry Tasmania and the Department of Primary Industries, Water and Environment have worked to develop vocational training to maximise both on- and off-the-job training (also to be available to tourism industry operators), with minimal disruptions to operations. Initiatives include:

- development of a forestry vocational education and training strategy, detailing the sector's innovations and identifying skills shortages and training needs;
- liaison with Department of Education Development Officers responsible for raising awareness of opportunities in the industry and for vocational education and training;
- vocational education and training in schools;
- assistance with the Cooperative Research Centre on Temperate Forestry (now Sustainable Production Forestry) at the University of Tasmania; and
- close coordination with registered training organisations (including the Hollybank TAFE for forest skills training).

The Commonwealth Department of Industry, Science and Resources, through the Wood and Paper Industry Strategy, has made a number of grants for the development of industry skills, including training of sawmill operators, marketing and promoting skills development.

8. The Commonwealth will continue to provide advice and assistance through its industry programs to eligible businesses (including forest-based businesses) in the areas of:
 - research and development;
 - commercialisation;
 - business & strategic planning;
 - business networks;
 - business licensing; and
 - innovation.

The Commonwealth Department of Industry, Science and Resources, through the Wood and Paper Industry Strategy (WAPIS), has funded research and development projects at both national and regional levels through individual companies and through national bodies. These bodies are disseminating the projects' findings to their membership base in the regions, including Tasmania.

WAPIS funding supported an international conference in Tasmania in 1999 on the processing of young eucalypt solid wood. The Forests and Forest Industry Council was also a major sponsor, facilitator and supporter of the conference.

Tasmanian Kiln Dried Timber Pty Ltd was granted \$374,300 in 1999 under the Commonwealth R&D Start Program for the production of furniture timber from low-quality logs.

Ro-Tree Corporation Australia Pty Ltd was granted a \$273,300 loan for an R&D Concessional Loan to develop a spot cultivator for improving the preparation of tree plantation sites.

9. Through the Department of Industry, Science and Technology (now DISR), the Commonwealth will continue the funding of a dedicated Forest Industries Client Manager to promote the development of forest-based industries in Tasmania. The client manager will establish and maintain contact with all companies in the wood and paper sector, to assist them in identifying and accessing relevant industry-development programs.

The Commonwealth Department of Industry, Science and Resources (DISR) and the Tasmanian Department of State Development funded the appointment of a Tasmanian based wood and paper industries Client Manager for the period 1997–1999. The Client Manager was tasked with assisting wood and paper industry companies to become internationally competitive and to access State and Commonwealth industry-development programs. Funds of \$175 000 were made available to assist firms with enterprise initiatives. Over seventy enterprises received direct financial assistance, with many more receiving non-financial support.

Specific Tourism Industry Development Actions

The Parties will jointly facilitate sustainable tourism development by the following actions:

- providing resources to maintain the environment and heritage values of existing and new reserves;

To assist in planning and managing new reserves created under the RFA, \$1 million from RFA funds was allocated by the Commonwealth under clause 101(iii) to the Department of Primary Industries, Water and Environment (DPIWE). From 2000, \$1 million is being added to the DPIWE budget from State funds to cover the planning and management of new RFA reserves.

The State is providing \$8 million over 2000–2004 to maintain the environment and heritage values of existing and new reserves through the Parks and Reserves Strategy, with a primary mandate to repair basic visitor infrastructure.

Forestry Tasmania funds the management and protection of CAR reserves on State forest from its internal funding as part of its integrated management of State forest. Management requirements for environment and heritage values are outlined in district forest management plans.

- providing resources for the visitor infrastructure and services required by markets in existing and new reserves, including Commonwealth funding under the RFA for the establishment of two new major interpretation facilities at suitable locations;

The Commonwealth has provided \$3 million to Tasmania under clause 101(iii), that with associated interest payments and additional grants and State funds, has been allocated to develop two new forest interpretation centres; the Freycinet National Park Visitor Centre at Coles Bay and the Great Western Tiers.

A contract was signed in October 2000 for construction of the Freycinet centre and associated works (including improved camping, car parking and day use). The total project cost is \$2.382 million (RFA funding \$1.6 million, Natural Heritage Trust Nature-based Tourism Grant \$382 000 and State funds \$400 000). The work is scheduled for completion in April 2002.

Following the planning study for the Great Western Tiers /Kooparoona Niara project, the State decided to develop an integrated network of projects covering four main themes: caves, forests and wildlife, arts and crafts; indigenous culture; and integrated network and branding.

The projects include:

- Planning and development costs (RFA funding \$200 000).
- Enhancing the King Solomon's Cave (RFA funding \$100 000, State funds \$180,000)
- Improving the Alum Cliffs walk (RFA funding \$100 000)
- Improving visitor facilities at the Mersey River White Water Forest Reserve (RFA funding \$100 000)
- Supporting the Tasmanian Devil Education Research Centre at the Trowunna Wildlife Park (RFA funding \$150 000)
- Improving the YARNS artworks in silk display in Deloraine in partnership with the Deloraine Folk Museum and Meander Valley Council (RFA funding \$300 000, Tasmanian Community Fund \$250 000, Meander Valley Council \$50 000)
- Developing a Sculpture Trail with sculptures at key attractions sites (RFA funding \$250 000)
- Supporting an Aboriginal tourism project developed in partnership with the local Aboriginal community (RFA funding \$50 000)

- Implementing a comprehensive signage, marketing and regional branding strategy for the region (RFA funding \$300 000)

All projects are expected to be completed by June 2002.

Forestry Tasmania is implementing a state-wide tourism strategy that aims to benefit the local community by providing regional developments and employment. It has completed the AirWalk at Tahune Forest Reserve (\$4.3 million) and the Scottsdale Forest Eco-centre (\$1.2 million), and is developing visitor facilities at the Dismal Swamp Reserve (\$200 000).

The Department of Primary Industries, Water and Environment has taken a number of visitor infrastructure initiatives, including building new visitor centres at Mt Field National Park and Hastings Cave State Reserve and upgrading the infrastructure at Narawntapu National Park.

Major new visitor facilities have been built at Port Arthur Historic Site.

- examining opportunities for funding, through the Natural Heritage Trust, projects to implement elements of the Tasmanian State-wide Walking Track Strategy; and

An interagency team received \$2.2 million in Natural Heritage Trust funding to implement the Tasmanian Walking Track Strategy. The group was awarded the Royal Australian Planning Institute's Awards for Excellence in Planning in 1999. Funding is being sourced over three years, and most of the tracks are being upgraded to a high standard.

The Department of Primary Industries, Water and Environment has completed walks under the Strategy at Rocky Cape, Flinders Island, and the Penguin to Cradle Trail walks. Further track works are being developed on the Tasman Coastal Track.

Forestry Tasmania manages 11 of the 60 *Great Short Walks* on State forest. Forestry Tasmania facilitated a major upgrade of the Mersey White Water Forest Reserve under the Great Western Tiers RFA Interpretation Project.

Work has progressed at Duckhole Lake and Montezuma Falls, and a feasibility study was carried out for possible new access tracks to Mount Arthur. Around \$320 000 has been spent on these projects over the past two years.

- providing the opportunity for eligible organisations in Tasmania to apply for grants under Commonwealth government tourism-development programs.

The Department of State Development and Tourism Tasmania disseminates information to potential candidates to make them aware of various programs, and also assist with developing applications and initiatives.

10. Tasmania will facilitate tourism-industry development through the following marketing actions:
 - analysing markets and targeting State campaigns accordingly;
 - identifying the core preferred destinations of the 'free independent traveller' and facilitating the provision of appropriate infrastructure and services;
 - encouraging the year-round use of Tasmania's national parks and other reserves through marketing, information and interpretation; and

- introducing a State-wide tourism signs policy in light of the results of the recent Arthur Highway Pilot project.

The Tasmanian Visitor Survey identifies and analyses markets and why destinations appeal. The *Imagine* campaign promoted nature, escape and renewal as key benefits of visiting Tasmania. The touring product, together with niche products such as walking and fishing, are promoted in targeted advertising initiatives.

New tourism signage (yellow on blue) introduced in January 2000 has been extended State-wide. New tourism directional signs including photographs and information are being installed State-wide starting with Heritage Highway. Some local councils have adopted the new principles and standards for tourism signage. A guide has been prepared for tourism operators and administrators to assist in understanding the Tasmanian visitor information signs.

11. Tasmania will, on a continuing basis, examine opportunities under Commonwealth programs for research into sustainable tourism.

Tourism Tasmania is a funding partner in the Cooperative Research Centre for Sustainable Tourism. In collaboration with the Office of Vocational Education and Training, it is examining the potential for growth of environmental tourism and exploring development opportunities and training strategies that can support sustainable tourism.

A separately funded Commonwealth program supports an ecotourism training and employment initiative. The \$6.4 million program (nationally) builds on the work done to identify development opportunities by facilitating skill development for ecotourism business operators and the sector workforce. This initiative enhances the commercial viability of many of the projects developed out of RFA funding.

13. Tasmania will facilitate sustainable tourism resource development by the following actions:
 - detailing priority locations/areas that have significant potential for nature-based tourism development;
 - developing investment briefs for identified sites with potential for major investment in nature based tourism developments, (eg Freycinet, Cradle Mountain, Mt Wellington); and
 - consulting with the tourism industry, consistent with the Tourism Protocol Agreement for the management of visitor impact.

The Department of State Development chairs the Tourism Development Steering Committee, whose primary role is to prioritise tourism developments and locations, ensure successful implementation of projects, and develop policies and plans that facilitate the development of sustainable tourism. The department also chairs the Tourism Consultative Panel, which establishes a strategic link between the tourism industry and government.

With the Department of Primary Industries, Water and Environment developing precinct strategies for such areas as Cradle Valley, St Helens, Lake St Clair and Strahan, prioritisation of development and strategic visions are enhancing sustainable tourism resource development. A web-based database of Crown property sites is being developed to assist in attracting investment to sustainable locations.

The Wellington Park Trust drew up a brief for tourism accommodation at the Springs in Wellington Park and has selected a developer.

Wood and Wood Products Industry Development Actions

14. Both Parties agree to implement the national “Plantations for Australia: The 2020 Vision” for expanding plantations in the Tasmanian context.

Implementation of Vision 2020 (see <http://www.plantations2020.com.au>) is continuing. The structure and actions of 2020 Vision are being reviewed nationally although the goal remains unchanged at 3 million hectares by the year 2020. Both Parties remain committed to the Vision.

The National Forest Inventory Report entitled *Plantations of Australia 2001*, prepared by the Bureau of Rural Sciences, indicates progress to September 2000 with establishing plantations in Tasmania. Refer to http://www.affa.gov.au/nfi_plantations2001 for further information.

Table 1 below shows that the plantation areas in Tasmania increased by 55,900ha during the period 1996-2001. The major increase has been in the area of Eucalypt plantation established. The updated total area of both Eucalypt and Softwood plantation is 198,000ha as at 30 June 2000.

Table 1: Tasmanian Plantation Areas

Reporting Year	Eucalypt Plantation (ha)	Softwood Plantation (ha)
1996 (June 30)	73,600	68,500
2001 (June 30)	117,600	80,400
Difference	44,000 (60%)	11,900 (17%)

Private Forests Tasmania, through its Farm Forestry and Plantation Strategy, is working with local government to explore the potential of farm forestry and plantation in local government areas to specifically address Goal 2, Action 3 and Goal 4, Action 6 of *Plantations for Australia: The 2020 Vision*.

15. Both parties will jointly facilitate development of the resource, on which the forest industries and related employment depend, by the following actions for which specific funding will be provided by the Commonwealth under the Agreement:
- expanding the level of intensive forest management by hardwood forests on public land, including:
 - pre-commercial thinning of very young eucalypt plantations and regrowth forests;
 - commercial thinning of young eucalypt plantations and regrowth forests;
 - establishment of new eucalypt plantations for sawlog production; and
 - improved planning to facilitate subsequent thinning in newly regenerated native forests;

The Commonwealth has provided \$67 million to Tasmania under clause 101 for new intensive forest-management initiatives on State forest, partly to replace resource foregone in the expanded CAR reserves system and partly to assist expansion of the resource.

The introduction of new and innovative planning and assessment procedures has resulted in more than 20 000 hectares of native State forest being assessed for commercial and pre-commercial thinning. Since July 1997 Forestry Tasmania has pre-commercially thinned a

total of 2 377 hectares of eucalypt forest and commercially thinned 2 163 hectares. This thinning program is ongoing.

The RFA program target was for 20 000 hectares of new eucalypt plantation to be established on State forest over five years. At the close of the 2001 planting season the fourth year 16 000 hectares of new eucalypt plantation will have been established on public land. This area figure includes 14 000 hectares directly owned and managed by Forestry Tasmania. The remaining area includes joint venture and other contractual arrangements.

All new plantations are being established with the objective of producing logs suitable for 'solidwood' products.

The Farm Forestry Program of the Natural Heritage Trust has provided assistance with improving the Farm Forestry Toolbox software program, which helps private forest growers to manage their native forests and plantations to produce high-quality products.

- establishing new special-species timber resources (eg blackwood plantations and fenced regeneration); and

New blackwood plantations and enrichment of native forest with blackwood is being implemented by Forestry Tasmania in the integrated forest management program. After extensive silvicultural research into the best methods of growing blackwood, the program was redefined to concentrate on blackwood enrichment (fenced regeneration). A small blackwood plantation program has been maintained for further research.

- supporting R&D into alternative, chemical-free pest and weed control systems for intensively managed forests.

With RFA plantation funding, Forestry Tasmania has established new research and technical programs into ways of controlling weeds and pests with non-chemical or environmentally friendly chemical methods.

A summary of the key projects is given below. Further details can be found in the annual reports of Forestry Tasmania (www.forestrytas.com.au) and its Division of Research and Development.

Insect control

Several environmentally friendly insecticides have been tested for managing the two main insect pests of young eucalypts in Tasmania: chrysomelid leaf beetles and autumn gum moths. The only registered insecticide currently available is cypermethrin, a broad-spectrum, synthetic pyrethroid. Autumn gum moth outbreaks have been managed successfully with Novodor[®] (based on a toxin produced by the bacterium *Bacillus thuringiensis* var. *tenebrionis*), Success[®] (based on a toxin, spinosad, derived from an ascomycete) and Mimic[®] (active ingredient: tebufenozide, specific for moth larvae only).

An Integrated Pest Management System was successfully introduced to utilise natural enemies to hold chrysomelid insect populations below economic thresholds. The system allows time for the natural enemies to control the population before chemical control needs to be considered.

Browsing mammals

An industry-wide coordinated research program has focussed on developing and evaluating alternatives to poisoning browsing mammals. It is identifying the situations under which the alternatives adequately protect seedlings from browsing. The aim of this research is to facilitate a phased transition from use of 1080 poison to an integrated approach to managing browsing mammals and eventually phasing 1080 out. The main elements of the current research are:

- pre-planting browsing-risk assessment;
- fencing and visual barriers;
- repellents;
- shooting; and
- tree guards.

Weeds

In the past four years Forestry Tasmania has moved towards integrated weed management. This has entailed:

- targeting problem weeds only, and synchronising the timing of the control with eucalyptus planting dates in order to maximise control of these targeted weeds, using the minimum amount of herbicide;
- using non herbicide weed control techniques including fire, hay-cutting, or cropping; and
- improving the application technique and the quality control standards of spray contractors.

In this way, both the need to apply herbicide after planting and the occurrence of residual herbicides in the soil have been markedly reduced.

16. The State will facilitate the development of the softwood plantation development and related employment opportunities by expanding the current rate of softwood plantation development;

The expansion of softwood plantations has continued, primarily on State forest as a joint venture between Forestry Tasmania and GMO Renewable Resources (See the report on item 14 above for areas planted).

17. The Commonwealth will provide specific funding under the Agreement for the construction of essential infrastructure to provide more efficient access to forest resources, and reduce haulage impacts on existing routes, noting that these new roads will also give access for other forest users and the general public.

The Commonwealth has provided Tasmania with \$6 million under clause 101(iii) of the RFA for roading to increase productivity of the forest industry.

The funds have been spent on the following projects:

- upgrading the Mathinna Plains/Mt Albert road in north-east Tasmania to more efficiently cart logs from forests north and east of Mathinna (\$2 million RFA funds);

- constructing a new major link road between the Huon and Derwent valleys to move wood more efficiently from forests in both valleys to existing and proposed industries (\$1.9 million RFA funds); and
- upgrading the Paradise Gorge section of the Tasman Highway west of Orford, which is a busy vehicle route to the Triabunna woodchip mill as well as a major tourist and community route (\$1 million RFA funds).

Acquittal of the \$1.1 million Commonwealth loan to Forestry Tasmania for additional roading required to maintain timber supply during the period of the Interim Forest Agreement.

Work on all of the projects has been completed.

18. The Parties will jointly facilitate wood and wood-products industry development and related employment opportunities by the following actions:

- continuing to support programs to educate the public on issues of forest management and on the sustainability of wood as an environmentally acceptable raw material for a wide range of uses;

Both Governments are supporting initiatives through a variety of programs.

The Commonwealth has continued to promote the benefits and outcomes of the RFA process for delivering sustainable forest management, for example:

- RFA News <http://www.rfa.gov.au> ; and
- the recently updated brochure titled *Australia's Forests—the Path to Sustainability*.

Through the Wood and Paper Industry Strategy and Natural Heritage Trust programs the Commonwealth has funded the Forest and Wood Products Research and Development Corporation (FWPRDC) to support a number of projects related to:

- silvicultural research to increase the productivity of plantations and native forests;
- developing criteria and indicators for assessing Australia's progress towards sustainable management and uses of forest resources; and
- research and development activities aimed at improving the environmental performance of the wood-product industry in Australia.

The FWPRDC under its National Timber Development Program funds a variety of activities aimed at improving the durability of timber in service and promoting the environmental benefits of timber compared to alternative building and construction materials. Brochures on environmentally friendly housing using timber principles and environmental properties of timber (available at <http://www.fwprdc.org.au/publications/nocharge/nocharge.htm>) promote the use of wood as an environmentally sound product.

Forestry Tasmania has produced a range of publications, media stories and advertisements, and offered many interpreted in-forest opportunities, to educate the public on issues of forest management.

The forest industry and Forestry Tasmania have continued to support the Forest Education Foundation (<http://www.forest-education.com>), which develops and delivers school based educational resources, field experiences for students, and personal development programs for

teachers. These cover an understanding of Tasmania's forests, forestry processes and the use and management of forest resources in Tasmania. The Forest Education Foundation works with all sections of the education sector including; students and teachers (Kindergarten–Year 12), curriculum developers, University of Tasmania teacher training and TAFE Tasmania.

Private Forests Tasmania has prepared a series of Plantation Information Sheets <http://www.privateforests.tas.gov.au/pubindex.htm> to inform the public on the issues arising from the recent expansion of the plantation estate in Tasmania.

All Tasmanian and Commonwealth agencies involved with aspects of forest management have developed and maintained web sites that provide information on a range of issues concerning forest management. These sites include:

Department of Premier and Cabinet <http://www.dpac.tas.gov.au/divisions/policy/rfa>

Department of Primary Industries, Water and Environment <http://www.dpiwe.tas.gov.au>

Forest Practices Board <http://www.fpb.tas.gov.au/fpb>

Forestry Tasmania <http://www.forestrytas.com.au>

Private Forests Tasmania <http://www.fpb.tas.gov.au/fpb>

Agriculture, Fisheries and Forestry Australia

<http://www.affa.gov.au/content/output.cfm?ObjectID=3E48F86-AA1A-11A1-B6300060B0AA0000>

CSIRO Forest and Forest Products <http://www.ffp.csiro.au>

Environment Australia <http://www.erin.gov.au/index.html>.

Forestry Tasmania and the Department of Primary Industries, Water and Environment fund and actively promote whole-of-chain (forest to timber products) education and interpretation programs. The Commonwealth [through the Department of Agriculture, Fisheries and Forestry – Australia, (AFFA)], and the State (through the Department of Infrastructure, Energy and Resources, Forestry Tasmania, the Department of State Development and the Forests and Forest Industry Council) have actively disseminated information on the Australian Forestry Standard, certification and labelling <http://www.forestrystandard.org.au>.

- continuing the funding of research, including specific funding under the Agreement, into new processing technologies and market opportunities to assist in the transition from old-growth to regrowth and plantation resources including:
 - new sawing and seasoning techniques,
 - technologies for manufactured wood products, and
 - commercialisation of new technologies;

A total of \$1.6 million of RFA funds have been allocated under clause 101(ii) by the Commonwealth to the Forests and Forest Industry Council to facilitate strategic research and development of new sawing and seasoning techniques, technologies for manufactured wood products and commercialisation of new technologies and processes. The funds will assist a variety of projects, focussing on sawing and seasoning of young eucalypts and disseminating results to the industry.

The Office of Vocational Education and Training is implementing national training packages to enhance skills to support the forest industry's development.

The Commonwealth Department of Industry, Science and Resources helped fund an international research and development conference in Tasmania. The conference focussed on

the production of wood products from eucalypts. The department also funded national research and development projects of specific relevance to the Tasmanian industry.

The Commonwealth has recently increased funding for the Forest and Wood Products Research and Development Corporation from the previous \$1 for every \$2 contributed by industry to a \$1 for \$1 basis.

- supporting a new emphasis on furniture design and marketing that complements Tasmania's existing success in 'one-off' design for high value, but focuses on product lines more suited to large-scale production for medium- to high-value markets; and

A variety of initiatives have been taken to facilitate expansion of production of medium- to high-value furniture and for design and marketing. They include development of furniture-design courses, and the 'Style Tasmania' marketing network, and facilitation of interstate and overseas trade exhibitions such as 'Furnitex' (supported by the Forests and Forest Industry Council and the Department of State Development). Tasmanian furniture manufacturers have been very successful in recent years at national exhibitions.

The Commonwealth Department of Industry, Science and Resources, through the Wood and Paper Industry Strategy, has funded export-marketing brochures and marketing and promotion strategies for the Australian fine-furniture industry. These national projects, which have provided indirect benefits to the Tasmanian industry, include:

- Furnishing Industry Action Agenda (*Meeting the Challenge*), developed with industry, to improve competitiveness. The Commonwealth has provided an assistance package of \$4 million.
- Cooperative Research Centre (CRC) for Innovative Wood Manufacturing was announced in January 2001. It was offered \$16.3 million in Commonwealth funding over seven years from 1 July 2001, matched with \$47.2 million from the participants. Furnishing-industry members of the centre include the Furnishing Industry Association of Australia and the Australasian Furnishing Research and Development Institute Ltd, which is based in Tasmania. The CRC will research and develop such issues as innovative techniques for manufacturing high quality and high-performance, value-added wood products. In an industry that historically has had extremely low levels of investment in research and development, the CRC represents an outstanding opportunity.
- investigating opportunities to improve forest-harvesting technologies by, for example, the design of log trucks.

A number of investigations have been or are being conducted to improve forest-harvesting technologies. The Department of Infrastructure, Energy and Resources is trialing high-productivity vehicles (B-doubles and mini-B-doubles) and increases to the B-double routes aimed at increasing vehicle load capacity, improving efficiency, reducing vehicle numbers and enabling industry to convert to newer technologies. Significant efforts have been made to explore the merits of off-site segregation of logs and cooperative development of whole-of-chain harvesting, as well as transport quality-assurance systems to optimise recovery and value of all forest products. In particular, Forestry Tasmania has recently submitted a Development Proposal to establish 'Southwood' in Southern Tasmania, an off-site segregation complex combining milling, peeling, chipping and energy production. Forestry Tasmania is also considering the potential for a similar complex in northern Tasmania.

The Forest and Wood Products Research and Development Corporation funds projects through the Forest Technology Program aimed at improving harvesting and timber-transport technologies.

19. The State will facilitate wood and wood-products industry development by the following actions:

- supporting the development by industry of comprehensive reports on market trends, commodity and log-price information, and supply and demand factors facing the timber, pulp and paper, panel and woodchip industries;

The Department of State Development in 1999 conducted a Forestry, Timber and Paper Industry Audit (<http://www.dsd.tas.gov.au/publications/indaud2.html>) to identify constraints to, and opportunities for growth. The audit provides a benchmark for assessing changes.

Private Forests Tasmania, using National Heritage Trust funding, is producing market information reports for farm forestry (refer to para. 20 below).

- amending the terms of reference of the Forests and Forest Industry Council to provide advice on:
 - a strategic overview of the market for forest products and the preference for maintaining and increasing domestic processing in Tasmania; and
 - the encouragement of the development of downstream processing in Tasmania, such that the preferred market for growers is within the State

The Forests and Forest Industry Council's (FFIC) Terms of Reference were updated in 2000 (and the Instruments of Appointment for members appropriately amended) to include wider stakeholder membership and to incorporate the additional roles identified in Attachment 12 of the RFA.

The FFIC coordinates forestry advice to government from across the forestry sector. It assists forest growers and industry find new markets. It is active in assisting industry in the transition from processing only old growth logs to processing both old growth and regrowth/plantation logs. The FFIC also promotes and supports value-adding by industry and fosters the development of the timber furniture industry.

- maintaining an internet site for Tasmanian timber, open to all industry participants, to provide a new method of marketing and increasing awareness of individual products; and

The 'Tasmanian Timber' website (www.tastimber.tas.gov.au) has been established through the timber research unit of the University of Tasmania and funded by the Tasmanian Timber Promotion Board who are responsible for its regular updating.

- continuing to support the Tasmanian Wood Design Collection through:
 - sponsorship and other assistance by Forestry Tasmania;
 - continuing the biennial exhibition and purchase program; and
 - seeking further opportunities to use the collection to advertise Tasmanian wood design nationally and overseas.

The Tasmanian Wood Design Collection (TWDC) now emphasises sustainable wood-use and design, value-adding regrowth and plantation timbers together with a renewed focus on high-quality timber items for commercial sale. The Department of State Development's Trade Marketing and Major Events Division assists Forestry Tasmania when the TWDC is exhibited overseas, and the Forests and Forest Industry Council uses the TWDC in its promotional activities.

Forestry Tasmania provides sponsorship of \$15,000 per year to enable TWDC expansion.

The Tasmanian Government has continued to support the TWDC through:

- allocating \$100 000 towards including the collection in major trade delegations to Japan (1999) and China (2000) to provide examples of high quality eucalypt and regrowth eucalypt applications;
- providing \$450 000 towards building a permanent home for the collection in Launceston; and
- organising biennial exhibitions of the collection.

20. The Commonwealth will facilitate, through its the Forest Industry Structural Adjustment Program program and other programs, industry development for the Private Forests sector by the following actions:

- assisting in the expansion of private planting, including by encouraging partnerships and joint ventures between property owners and investors; and

The Commonwealth, through the Farm Forestry Program of the Natural Heritage Trust has allocated \$4.4 million to Tasmania to encourage the development of plantations on cleared agricultural land and the management of private native forests.

One of the projects supported by the Farm Forestry Program is the Integrated Farm Forestry Planning & Forest Establishment Project, managed by Private Forests Tasmania. This is a devolved grant scheme fostering the participation of landholders in planning and planting a projected 500 hectares of plantations

In partnership with the States and industry, the *Plantations for Australia: the Vision 2020* framework has been implemented to remove impediments to the development of plantations.

- assisting the State in programs aimed at achieving increased numbers of private forest owners managing and improving productivity in their forests.

Refer to paragraph 3 of Attachment 12 for specific funding initiatives.

The Commonwealth, through the National Heritage Trust, has assisted Private Forests Tasmania to implement a range of projects for private landowners to better manage their forests. These include:

- assessing the area of private land suitable for plantation development
- preparing a model joint-venture agreement
- developing the Private Forestry Toolbox to provide landowners with practical software to help them manage their forests
- providing a forest-planning service to landowners to develop whole farm plans.

21. The Commonwealth will facilitate, through the Forest Industry Structural Adjustment Program and other programs, overall industry development by the following actions:

- providing assistance for sawmilling industry redevelopments on a case-by-case basis, designed to help industry adjust to predominantly regrowth and plantation resource supplies, while achieving value-adding investments, improved productivity and international competitiveness;

Refer to paragraph 3 of Attachment 12 for specific funding initiatives.

The Commonwealth, through agencies such as AusIndustry, provides a range of programs to assist companies and industries become internationally competitive, improve their productivity and develop their product and business activities.

Tasmanian Kiln Dried Timber Pty Ltd was granted \$374 300 in 1999 under the R&D Start Program for the production of furniture timber from low-quality logs. However no specific Forest Industry Structural Adjustment Package (FISAP) funds have been made available to Tasmania.

- encouraging the use of 'Crown Cut' regrowth veneer for construction and renovation projects that involve the Commonwealth, including by promotion: within Commonwealth purchasing agencies; and within design specifications; and

The Forests and Forest Industry Council have sponsored competitions to encourage greater use of Crown Cut veneer by manufacturers, with winning designs exhibited at Furnitex and other exhibitions. Unfortunately there has been limited interest from manufacturers and purchasers, though the objective is seen as a high priority.

- advocating the use of wood and wood products sourced from regions covered by RFAs and from regions where the Commonwealth has removed export controls on wood sourced from plantations, on the basis that they:
 - are recognised as sustainably managed; and,
 - will be considered by the Commonwealth to have environmental credentials such that there is no basis for discrimination against such products on the issue of sustainability.

The Commonwealth has articulated its support for the use of wood and wood products from RFA regions as they are sustainably managed. This includes the *Statement on Sustainable Forest Management in Tasmania* (see item 22), and its approaches in the *Regional Forest Agreement Bill* and the *Renewable Energy (Electricity) Act 2000* (the Regulations under this Act stipulate which wood waste can be used for biomass energy and be recognised as renewable energy). The State, however has concerns that the *Renewable Energy (Electricity) Act* and its associated regulations do not automatically accept that wood produced from RFA regions have "environmental credentials such that there is no basis for discrimination against such products on the issue of sustainability."

22. The Parties, based on the Agreement, will promote the sustainability of Tasmanian wood products in domestic and international markets.

A joint *Statement on Sustainable Forest Management in Tasmania* was signed by State and Commonwealth Ministers in January 1999 and distributed widely to producers in Tasmania. The corresponding marketing strategy is being supported principally by the Tasmanian Timber Promotion Board and the Forests and Forest Industry Council.

23. The Commonwealth, as part of the WAPIS and other programs, will facilitate skills development in enterprises and workplaces by:

- developing programs within the harvesting, sawmilling and furniture manufacturing sectors as part of the National Small Business Best Practice Professional Development Program;

The Small Business Professional Development Program was funded by the Commonwealth and managed by the Office of Vocational Education and Training, Tasmania. Detailed information about the program and its resources and projects is available on the program's website www.smallbusiness.info.au/

The program worked closely with State and Territory training authorities, and through its action research, developed and trialed different approaches to training to encourage small businesses to take control of their own learning. The learning models developed included mentoring, networks, clusters and tool kits.

The program also supported projects where small businesses first identified their needs and problems, and then tried out solutions in real situations. In the last two years of the Program 1,402 small business people were involved nationally (Tasmanian figures unavailable), not only as participants, but also as partners in designing, testing and evaluating approaches.

The Commonwealth Department of Industry, Science and Resources, through the Wood and Paper Industry Strategy, has funded projects related to skills development (training of sawmill instructors), marketing development (through the Furnishing Industry Association of Australia), network development (through the National Association of Forest Industries) and furniture industry networks (through collaboration of furniture designers). The Tasmanian-based Client Manager (see item 9) directed the forest industry towards specialised skill-improvement initiatives.

- providing assistance in the form of Network grants for sawmilling and furniture small- to medium-sized enterprises in the Commonwealth's Technology Support Centre Program for technology transfer. Grants for sawmilling enterprises would assist in the use of advanced timber-seasoning concepts; and for furniture-manufacturing enterprises, would assist the adoption of intricate and high-volume computer-controlled processing; and

The Industry Training Assistance Board markets the training packages to industry. The Department of State Development has ensured the Client Manager is aware of the training packages available and has assisted the sector to receive a grant for a GIS database to develop a model for optimising logistics for the sawmilling and furniture sector.

Development of electronic tools for log-sales administration and tracking of sawn product within processing facilities is being investigated by Tasmanian Electronic Commerce Centre, the Forest Industries Association of Tasmania, the Tasmanian Country Sawmiller's Federation and the Forests and Forest Industry Council.

- working cooperatively with relevant agencies to promote and market National Vocational Education Training packages in Tasmanian forestry and ecotourism;

The Office of Vocational Education and Training has continued to market the available training packages to industry. In September 2000 the Commonwealth entered into a Memorandum of Understanding with the Tasmanian Government to support the new ecotourism training and employment initiative based on national training packages.

Funding for the initiative totals \$6.4 million nationally (Tasmanian figure unavailable) over the four years of the program and is in addition to on going Commonwealth support for the promotion and marketing of training packages.

- encouraging Tasmanian applications under the Industry Skills Centres Program in the areas of:

- silviculture
- sawing and seasoning
- packaging and export consignment
- merchandising and marketing
- catchment management and
- ecotourism;

The Commonwealth's Infrastructure Program provides capital funding through the Australian National Training Authority to the States and Territories for vocational education and training.

The Office of Vocational Education and Training has actively supported the development of industry skills centres for school students in rural Tasmania.

- encouraging the uptake of the Commonwealth's work-based New Apprenticeships Program.

The Commonwealth has developed a range of programs designed to encourage the uptake of new apprenticeships. The Commonwealth programs included a marketing campaign targeting rural and regional communities.

The Office of Vocational Education and Training has actively encouraged the uptake of apprenticeships in the industry; for example, a Pulp and Paper Traineeship was instituted at Norske Skog's Boyer Mill.

24. The Parties will jointly facilitate skills development by:

- encouraging Australian National Training Authority assistance, through the Forest and Forest Products Education Skills Company and the Tasmanian Forest Industry Training Board, of Vocational Education and Training in Schools in the areas of:
 - ecotourism
 - IT including mapping
 - communication, engineering and construction and
 - forestry;
- encouraging the adoption of the Commonwealth's School-Industry Links Demonstration Program by local forestry and ecotourism businesses in regional centres in Tasmania.

See responses to items 22 and 23 above.

Minerals Industry Development Actions

25. The Parties will jointly facilitate minerals industry development and related employment by the following actions:

- implementing the Regional Minerals Program for the Western Tasmanian Minerals Province to enable development of an optimal development strategy for the minerals industry;

A number of projects are underway to improve the quality of geoscientific data in order to enhance opportunities for mineral exploration and investment. The projects are due to be completed in 2003. Commonwealth funding has been received for digitisation of Tasmanian geological data (\$4.17 million).

In 2001 the Department of State Development contracted consultants to begin preparatory work on the re-zoning at Port Latta for an investment-ready industrial site. The consultant will provide:

- a description of the industries that might set up or move to the site over the next 20 years
 - a Circular Head Council Planning Scheme Amendment report
 - a water supply report
 - an environmental baseline report
 - an area management plan
 - a generic development proposal and environmental management plan;
 - an infrastructure requirement report, and
 - a marketing handbook.
- actively advocating and supporting the Agreement as providing secure access to those areas having land tenure suitable for minerals exploration and mining; and

The Tasmanian Government at various trade conferences and other relevant forums promotes the guaranteed access for mineral exploration and mining.

Access to land for exploration and mining continues to be provided under the Tasmanian Government's *Mineral Resources Development Act 1995* and *Mining (Strategic Prospectivity Zone) Act 1993*.

- through data acquisition and research, support the development of an improved geoscientific knowledge base at regional and continental scale to promote investment in mineral exploration.

Mineral Resources Tasmania through its own programs and joint projects with Australian Geological Survey Organisation and the Centre for Ore Deposit and Exploration Studies, continues to support the development of an improved geoscientific knowledge base.

The first geoscientific data from the Western Tasmanian Regional Minerals Program was publicly released in October 2001 and the dataset is now available from Mineral Resources Tasmania. The information was highlighted and promoted at the Mining 2001 Conference in Melbourne in November.

26. The State will provide and maintain relevant databases and search and retrieval systems online to clients.

The State Government-funded project TIGER is establishing a database with an online search-and-retrieval system, over the triennium 2000-01 to 2002-03.

Actions to Develop Other Industries Dependent on Access to Forests

27. Tasmania will facilitate industry development and related employment for woodcraft industries dependent on special- species timbers by the following actions:

- assessing the potential for additional areas of State Forest in Tasmania to be managed for the long-term production of special-species timbers and implementing appropriate zoning and management for those areas that are suitable;

Forestry Tasmania has undertaken a review of special-species timbers, including location, potential resource and access. As a consequence, additional special timber management

zones have been proposed. These zones, which form part of Forestry Tasmania's Management Decision Classification System, have recently been redefined under the system to state the special-timber management objectives more clearly. In addition, Forestry Tasmania has developed rainforest management guidelines, as part of its strategic planning, to protect both conservation values and future special-species production.

- Promoting access to unprocessed and semi-processed special species timbers and craftwood and by developing new opportunities for the use of species such as silver wattle and white sassafras, noting that these actions are currently being addressed through Forestry Tasmania's 'Island Specialty Timbers';

The Forests and Forest Industry Council, in conjunction with Forestry Tasmania and the Forest Industries Association of Tasmania, has established the special-species Working Party. The working party has reported to the Minister for Forests on how to improve communications and remove impediments in the special-species supply chain.

Forestry Tasmania has maintained its Island Specialty Timbers business to facilitate access to special-species timbers and craftwood.

- supporting the establishment of the 'Living Boat Trust' for registration, preservation and study of Tasmania's wooden boats and for recording of associated history;

The site for the "Living Boat Trust" at Franklin has been secured. The building is intended to be a key feature of a plan for revitalising the site as a Maritime Centre, demonstrating Franklin's marine heritage and the modern revival of boat building. The wharf development has been completed. Forestry Tasmania has continued to support the Trust.

- assisting in the construction of appropriate mooring facilities adjacent to the Shipwrights Point School of Wooden Boat Building;

The Forests and Forest Industry Council and Forestry Tasmania, by way of an assistance grant, have developed a mooring facility. Construction is complete and ownership and management have been vested in the Franklin Progress Association.

- promoting and fostering the further development of a viable wood design and fine craft industry;

Forestry Tasmania maintains a program of sponsorship and support for the design and craft industries, including the Tasmanian Wood Design Collection Trust (see item 19). The Forests and Forest Industry Council maintains a direct interest in this area via its directorship on the Centre for Furniture Design and the relationships embedded in the *Style of Tasmania* furniture network with young furniture designers.

- providing seeding funds to boost the marketing role of the Tasmanian Design Development Company, with particular emphases on:
 - marketing
 - developing potential retail outlets, and
 - pursuing new markets for corporate crafts through representation at fine-craft and design fairs throughout Australia; and

The Tasmanian Design Development Company became Island Design during 1996-2001. It assisted in the pursuit of markets and the development of marketing skills. Once craftsmen and designers acquired this knowledge the services were no longer required. Island Design closed in 2000.

- conducting a study to identify the best potential locations in which to establish 'focus areas' for wood design and other fine craft, and to foster the establishment of such focus areas in other locations that are shown to be commercially viable.

Investigation of these issues by the Forests and Forest Industry Council identified no need for such study. No real interest was shown by the industry, and this needs to be considered in context that there is a Tasmanian School of Furniture Design in Hobart and the Australian School of Fine Furniture in Launceston.

28. The Commonwealth will assist the State in:

- maximising the recovery of special-species timbers from forests managed for these timbers and from all other harvested forests; and

Commonwealth RFA funding (\$0.4 million) has been used to appoint a Special-species Officer to review the availability and yield of special species, with particular focus on the deep-red myrtle resource review (see clause 55), and to work with the industry on maximising recovery of special-species timbers from other harvested forests.

- establishing a trading house and permanent storage facility for wooden boat boards, such that irregular supply and demand patterns can be managed to optimise the long-term State-wide recovery of boards suited to wooden-boat building from sawmillers processing Huon pine and celery top pine (in particular);

Preliminary discussions have been held with industry, which is supportive of the concept. A project plan is to be developed and finalised with industry by 2003. The Forest and Forest Industries Council received \$1.6 million RFA funds of which \$0.2 million was for this project.

29. Tasmania will facilitate industry development and employment for other industries dependent on forests by the following actions:

- developing and implementing an agreed management plan and licensing system for the harvest of *Dicksonia antarctica* tree ferns across all available land tenures, to be administered by Forestry Tasmania and DPIWE and to meet the requirements of the *Wildlife Protection (Regulation of Exports and Imports) Act 1982* (Commonwealth); and

The Forest Practices Board, Forestry Tasmania and the Department of Primary Industries, Water and Environment have jointly developed a management plan for the harvesting of tree ferns in Tasmania. Following a Commonwealth public consultation process, the Commonwealth with respect to meeting export regulatory requirements approved the plan. Legislation to amend the *Forest Practices Act 1985* and the Forest Practices Regulations 1997 has been passed in the Tasmanian Parliament and will enable implementation of the management plan and harvesting licences through the forest practices system from 1 January 2002.

- completing the implementation of the protocol for leatherwood honey management on all Public Land tenures throughout the State, as agreed between the Tasmanian Beekeepers' Association, Forestry Tasmania and DPIWE.

A Community Forest Agreement between Forestry Tasmania and the Tasmanian Beekeepers' Association Inc was completed and signed in November 2000. The Agreement implements the protocol for leatherwood-honey management on State forest.

The Honey Liaison Committee, consisting of representatives of Forestry Tasmania, Hydro Tasmania; the Department of Primary Industries, Water and Environment; and the Tasmanian Beekeepers' Association, meet regularly to resolve State-wide issues of mutual interest.

Attachment 14 – Data Use and Access

3.5 Versions and upgrades

The latest version of all jointly owned data will be exchanged within three months of the commencement of this Agreement.

Copies of the latest version of all jointly owned data were exchanged by 31 May 1998.

A full set is now held by each of the nominated custodians: the Bureau of Rural Sciences and Environment Australia (for the Commonwealth), and Forestry Tasmania and the Department of Primary Industries, Water and Environment (for the State). Reports and associated maps can be accessed at www.rfa.gov.au. They have also been archived on compact disks.

4. Other Data

Not later than one month after signing this Agreement each Party will delete and cause not to be accessed all copies of data that they do not own but were provided for RFA purposes, unless otherwise agreed to in writing by the respective data owners.

All State and Commonwealth custodian agencies have deleted copies of data that they do not own but were provided for RFA purposes. This was completed by 31 May 1998.

4.1 Data Archive

A copy of data used for RFA purposes will, where permitted by the data providers, be securely archived and maintained by the data owner or agreed custodian of that information. Listing and archiving of that data is to be completed within three months of the commencement of this Agreement.

All custodian agencies have listed and archived key datasets they were responsible for providing for RFA purposes. This was completed by 31 May 1998.

APPENDIX 1- Priority Species (clause 69)

Species	Common name	Prescription source	Changes	Recommendation
FAUNA				
<i>Accipiter novaehollandiae</i>	Grey goshawk	Threatened Fauna Advisor		
<i>Antipodia chaostola</i>	Chaostola skipper	Threatened Fauna Advisor		
<i>Aquila audax</i>	Wedge-tailed eagle	Recovery Plan/Threatened Fauna Advisor		
<i>Astacopsis gouldi</i>	Giant Freshwater Crayfish	Recovery Plan/Threatened Fauna Advisor		
<i>Austrochloritis victoriae</i>	Southern hairy red snail	Threatened Fauna Advisor	Rediscovered; TSPA listed as Rare	Add to RFA priority species list
<i>Beddomeia angulata</i>	Hydrobiid Snail (Rabid River)	Threatened Fauna Advisor		
<i>Beddomeia averti</i>	Hydrobiid Snail (West Gawler)	Threatened Fauna Advisor		
<i>Beddomeia bellii</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Beddomeia bowryensis</i>	Hydrobiid Snail (Bowry Creek)	Threatened Fauna Advisor		
<i>Beddomeia briansmithi</i>	Hydrobiid Snail (Fern Creek)	Threatened Fauna Advisor		
<i>Beddomeia camensis</i>	Hydrobiid Snail (Cam River)	Threatened Fauna Advisor		
<i>Beddomeia capensis</i>	Hydrobiid Snail (Table Cape)	Threatened Fauna Advisor		
<i>Beddomeia fallax</i>	Hydrobiid Snail (Heathcote Creek)	Threatened Fauna Advisor		
<i>Beddomeia forthensis</i>	Hydrobiid Snail (Wilmot River)	Threatened Fauna Advisor		
<i>Beddomeia franklandensis</i>	Hydrobiid Snail (Frankland River)	Threatened Fauna Advisor		
<i>Beddomeia fromensis</i>	Hydrobiid Snail (Frome River)	Threatened Fauna Advisor		
<i>Beddomeia fultoni</i>	Hydrobiid Snail (Farnhams Creek)	Threatened Fauna Advisor		
<i>Beddomeia gibba</i>	Hydrobiid Snail (Salmon River Road)	Threatened Fauna Advisor		
<i>Beddomeia hallae</i>	Hydrobiid Snail (Buttons Rivulet)	Threatened Fauna Advisor		
<i>Beddomeia hermansi</i>	Hydrobiid Snail (Viking Creek)	Threatened Fauna Advisor		
<i>Beddomeia hullii</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Beddomeia inflata</i>	Hydrobiid Snail (Heathcote Creek)	Threatened Fauna Advisor		
<i>Beddomeia kershawi</i>	Hydrobiid Snail (Macquarie River)	Threatened Fauna Advisor		
<i>Beddomeia kessneri</i>	Hydrobiid Snail (Dip Falls)	Threatened Fauna Advisor		
<i>Beddomeia krybetes</i>	Hydrobiid Snail (Great Lake)	Threatened Fauna Advisor		
<i>Beddomeia launcestonensis</i>	Hydrobiid Snail (Cataract Gorge)	Threatened Fauna Advisor		
<i>Beddomeia lodderae</i>	Hydrobiid Snail (Upper Castra Rivulet)	Threatened Fauna Advisor		
<i>Beddomeia mesibovi</i>	Hydrobiid Snail (Arthur River)	Threatened Fauna Advisor		
<i>Beddomeia minima</i>	Hydrobiid Snail (Scottsdale)	Threatened Fauna Advisor		
<i>Beddomeia petterdi</i>	Hydrobiid Snail (Blyth River)	Threatened Fauna Advisor		
<i>Beddomeia phasianella</i>	Hydrobiid Snail (Keddies Creek)	Threatened Fauna Advisor		
<i>Beddomeia protuberata</i>	Hydrobiid Snail (Emu River)	Threatened Fauna Advisor		
<i>Beddomeia ronaldi</i>	Hydrobiid Snail (St. Patricks River)	Threatened Fauna Advisor		
<i>Beddomeia salmonis</i>	Hydrobiid Snail (Salmon River)	Threatened Fauna Advisor		
<i>Beddomeia tasmanica</i>	Hydrobiid Snail (Terrys Creek)	Threatened Fauna Advisor		

Species	Common name	Prescription source	Changes	Recommendation
<i>Beddomeia topsiae</i>	Hydrobiid Snail (Williamson Creek)	Threatened Fauna Advisor		
<i>Beddomeia trochiformis</i>	Hydrobiid Snail (Bowry Creek)	Threatened Fauna Advisor		
<i>Beddomeia tumida</i>	Hydrobiid Snail (St. Pauls River)	Threatened Fauna Advisor		
<i>Beddomeia turnerae</i>	Hydrobiid Snail (Minnow River)	Threatened Fauna Advisor		
<i>Beddomeia waterhouseae</i>	Hydrobiid Snail (Clayton's Rivulet)	Threatened Fauna Advisor		
<i>Beddomeia wilmotensis</i>	Hydrobiid Snail (Wilmot river)	Threatened Fauna Advisor		
<i>Beddomeia wiseae</i>	Hydrobiid Snail (Blizzards Creek)	Threatened Fauna Advisor		
<i>Beddomeia zeehanensis</i>	Hydrobiid Snail (Little Henty River)	Threatened Fauna Advisor		
<i>Catadromus lacordairei</i>	Catadromus carabid beetle	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Charopidae "Skemps"</i>	"Skemps" snail	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Dasyurus maculatus</i>	Spotted tailed quoll	Threatened Fauna Advisor		
<i>Diplectrona lyella</i>	Caddisfly	Threatened Fauna Advisor		
<i>Ecnomina vega</i>	Caddisfly	Threatened Fauna Advisor		
<i>Engaeus orramakunna</i>	Mt. Arthur Burrowing Crayfish	Recovery Plan/Threatened Fauna Advisor		
<i>Engaeus spinicaudatus</i>	Scottsdale Burrowing Crayfish	Recovery Plan/Threatened Fauna Advisor		
<i>Engaeus yabbimunna</i>	Burrowing Crayfish (Burnie)	Recovery Plan/Threatened Fauna Advisor		
<i>Fraus latistria</i>	Broad-striped ghost moth	Threatened Fauna Advisor		
<i>Galaxias auratus</i>	Golden galaxias	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Galaxias fontanus</i>	Swan galaxias	Recovery Plan/Threatened Fauna Advisor		
<i>Galaxias johnstoni</i>	Clarence galaxias	Recovery Plan/Threatened Fauna Advisor		
<i>Galaxias parvus</i>	Swamp galaxias	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Galaxias tanycephalus</i>	Saddled galaxias	Threatened Fauna Advisor		
<i>Galaxiella pusilla</i>	Dwarf galaxias	Recovery Plan/Threatened Fauna Advisor		
<i>Glacidorbis pawpela</i>	Hydrobiid Snail (Great Lake)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Goedetrechus mendumae</i>	Cave Beetle (Ida Bay)	Threatened Fauna Advisor		
<i>Goedetrechus parallelus</i>	Cave Beetle (Jurnee-Florentine)	Threatened Fauna Advisor		
<i>Helicarion rubicundus</i>	Burgundy snail	Threatened Fauna Advisor		
<i>Hickmanoxyomma cavaticum</i>	Cave Harvestman	Threatened Fauna Advisor		
<i>Hickmanoxyomma gibbergunyar</i>	Cave Harvestman	Threatened Fauna Advisor		
<i>Hoplogonus bornemisszai</i>	Bornemisszas stag beetle	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Hoplogonus simsoni</i>	Simsons stag beetle	Threatened Fauna Advisor		
<i>Hoplogonus vanderschoori</i>	Vanderschoors stag beetle	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Hydrobiosella armata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Hydrobiosella sagitta</i>	Caddisfly	Threatened Fauna Advisor		
<i>Hydroptila scamandra</i>	Caddisfly	Threatened Fauna Advisor		
<i>Idacarabus cordicollis</i>	Cave Beetle (Hastings Cave)	Threatened Fauna Advisor		
<i>Idacarabus troglodytes</i>	Cave Beetle (Precipitous Bluff)	Threatened Fauna Advisor		
<i>Lathamus discolor</i>	Swift parrot	Recovery Plan/Threatened Fauna Advisor		
<i>Leptocerus sounta</i>	Caddisfly	Threatened Fauna Advisor		
<i>Lissotes latidens</i>	Broad-toothed stag beetle	Threatened Fauna Advisor		

Species	Common name	Prescription source	Changes	Recommendation
<i>Lissotes menalcas</i>	Mt Mangana stag beetle	Threatened Fauna Advisor		
<i>Litoria raniformis</i>	Green and gold frog	Listing Statement/Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Mesacanthotelson setosus</i>	Isopod (Great Lake)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Mesacanthotelson tasmaniae</i>	Isopod (Great Lake)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Micropathus kiernani</i>	Cave Cricket	Threatened Fauna Advisor		
<i>Migas plumleyi</i>	Spider (Cataract Gorge)		Does not occur in production forest	Remove from list
<i>Miselaoma weldi</i>	Stanley Snail		Does not occur in production forest	Remove from list
<i>Oecetis gilva</i>	Caddisfly	Threatened Fauna Advisor		
<i>Olgania excavata</i>	Cave Spider (Bubs Hill Cave)	Threatened Fauna Advisor		
<i>Onchotelson brevicaudatus</i>	Isopod (Great Lake & Shannon Lagoon)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Onchotelson spatulatus</i>	Isopod (Great Lake)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Ooperipatellus cryptus</i>	Northwest velvet worm	Threatened Fauna Advisor		
<i>Oreixenica ptunarra</i>	Ptunarra brown butterfly	Threatened Fauna Advisor		
<i>Orphninostrichia maculata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Orthotrichia adornata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Oxyethira mienica</i>	Caddisfly	Threatened Fauna Advisor		
<i>Paragalaxias dissimilis</i>	Shannon paragalaxias	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Paragalaxias electroides</i>	Great Lake paragalaxias	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Paragalaxias mesotes</i>	Arthurs paragalaxias	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Pardalotus quadragintus</i>	Forty-spotted pardalote	Threatened Fauna Advisor		
<i>Pasmaditta jungermanniae</i>	"Cataract Gorge" snail	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Perameles gunni</i>	Eastern barred bandicoot	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Phrantela annamurrayae</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Phrantela conica</i>	Hydrobiid Snail (Little Henty River)	Threatened Fauna Advisor		
<i>Phrantela marginata</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Phrantela pupiformis</i>	Hydrobiid Snail (Tyenna River)	Threatened Fauna Advisor		
<i>Prototroctes maraena</i>	Australian grayling	Threatened Fauna Advisor		
<i>Pseudomys novaehollandiae</i>	New Holland mouse	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Pseudotyrranochthonius typhlus</i>	Cave Pseudoscorpion (Mole Creek)	Threatened Fauna Advisor		
<i>Ramiheithrus kocinus</i>	Caddisfly	Threatened Fauna Advisor		
<i>Roblinella agnewi</i>	Silky Snail		Does not occur in production forest	Remove from list
<i>Schayera baiulus</i>	Schayers grasshopper	Threatened Fauna Advisor		
<i>Stenopsychodes lineata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Tasimia drepana</i>	Caddisfly	Threatened Fauna Advisor		
<i>Tasmanipatus anophthalmus</i>	Blind velvet worm	Threatened Fauna Advisor		
<i>Tasmanipatus barretti</i>	Giant velvet worm	Threatened Fauna Advisor		
<i>Tasmanotrechus cockerilli</i>	Cave Beetle (Mole Creek)	Threatened Fauna Advisor		

Species	Common name	Prescription source	Changes	Recommendation
<i>Tasmaphena lamproides</i>	Keeled snail	Threatened Fauna Advisor		
<i>Tasniphargus tyleri</i>	Amphipod (Great Lake)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list
<i>Uramphisopus pearsoni</i>	Isopod (Great Lake)	Threatened Fauna Advisor	TSPA listed	Add to RFA priority species list

SPECIES NOT LISTED UNDER LEGISLATION

FAUNA

<i>Bettongia gaimardi</i>	Tasmanian bettong	Threatened Fauna Advisor		
<i>Dasyurus viverrinus</i>	Eastern quoll	Threatened Fauna Advisor		
<i>Haliaeetus leucogaster</i>	White bellied sea eagle	Threatened Fauna Advisor		
<i>Anoglypta launcestonensis</i>	Northeast forest snail	Threatened Fauna Advisor		
Hollow dependant species		Forest Practices Code	Delisted SAC	Remove from list
Karst species		Forest Practices Code		

Species FLORA	Common name	Prescription source	Changes	Recommendation
<i>Acacia axillaris</i>	Midlands Wattle	Recovery plan/listing statement/Forestry Tas technical Report Phytophthora/Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report/RFA Management Prescription Report		
<i>Acacia mucronata var dependens</i>		Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Acacia pataczekii</i>	Wally's Wattle	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Forest Botany Manual/Recovery Research Report		
<i>Acacia ulicifolia</i>	Juniper Wattle	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Agrostis aemula var aemula</i>	Blown Grass		is a forest dwelling species	Add to RFA priority species list
<i>Agrostis aemula var setifolia</i>	Blown Grass	Forest Botany Manual		
<i>Agrostis aff australiensis</i>	Similar to Australian or Southern Bent		is a forest dwelling species	Add to RFA priority species list
<i>Allocasuarina crassa</i>	Cape Sheoak	Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Allocasuarina duncanii</i>	Duncan's Sheoak	Forest Botany Manual		
<i>Alternanthera denticulata</i>	Lesser Joyweed	Forest Botany Manual	marginal forest species	remove from RFA priority list
<i>Amphibromus macrorhinus</i>	Long-nosed Swamp Wallaby-grass	Forest Botany Manual		
<i>Anogramma leptophylla</i>	Annual Fern	RFA Report Threatened Ferns/Forest Botany Manual		
<i>Aphelia gracilis</i>	Slender Aphelia	Forest Botany Manual		
<i>Aphelia pumilio</i>	Dwarf Aphelia	Forest Botany Manual		
<i>Argentipallium spiceri</i>	Spicer's Everlasting	Forest Botany Manual	rediscovered now listed as endangered State and National	
<i>Aristida benthamii</i>	Three-awned Spear Grass		is a forest dwelling species	Add to RFA priority species list
<i>Arthrochilus huntianus ssp huntianus</i>	Elbow Orchid	Recovery Plan	Was Arthrochilus huntianus now split into two subspecies	Add to RFA priority species list
<i>Arthrochilus huntianus ssp nothofagicola</i>	Elbow Orchid	Recovery Plan	Was Arthrochilus huntianus now split into two subspecies	Add to RFA priority species list
<i>Arthropodium minus</i>	Small Vanilla-lily	Forest Botany Manual		
<i>Asperula minima</i>	Grassy Woodruff		is a forest dwelling species	Add to RFA priority species list
<i>Asperula scoparia var scoparia</i>	Prickly Woodruff	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Asperula subsimplex</i>	Water Woodruff	Forest Botany Manual		
<i>Asplenium hookerianum</i>	Hooker's Spleenwort	RFA Report Threatened Ferns/Recovery Plan/Forest Botany Manual		
<i>Australina pusilla ssp muelleri</i>	Mueller's Small Shade Nettle	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Australopyrum velutinum</i>	Mountain Wheat Grass		is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Changes	Recommendation
<i>Austrodanthonia popinensis</i>	Wallaby-grass	Forest Botany Manual/community Recovery Plan	Was Danthonia popinensis	Change name to accord with 1999 plant census
<i>Austrodanthonia remota</i>	Remote Wallaby-grass		is a forest dwelling species	Add to RFA priority species list
<i>Austrostipa bigeniculata</i>	Spear-grass	Forest Botany Manual		
<i>Austrostipa blackii</i>	Crested Spear-grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Austrostipa nodosa</i>	Spear Grass		is a forest dwelling species	Add to RFA priority species list
<i>Austrostipa scabra</i>	Rough Spear-grass	Forest Botany Manual		
<i>Ballantinia antipoda</i>	Southern Ballantine	Forest Botany Manual/community Recovery Plan		
<i>Banksia serrata</i>	Saw Banksia			
<i>Barbarea australis</i>	Native Wintercress	Forest Botany Manual		
<i>Baumea articulata</i>	Jointed Twig-rush		is a forest dwelling species	Add to RFA priority species list
<i>Baumea gunnii</i>	Slender Twig-rush	Forest Botany Manual		
<i>Bedfordia arborescens</i>	Blanket leaf (Mainland)		is a forest dwelling species	Add to RFA priority species list
<i>Bertya rosmarinifolia</i>	Bertya	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Blechnum cartilagineum</i>	Gristle-fern	RFA Report Threatened Ferns/Threatened Flora Manual NE Tas		
<i>Bolboschoenus medianus</i>	Marsh Club-rush, River Bullrush	Forest Botany Manual		
<i>Bossiaea obcordata</i>	Spiny Bossiaea	Forest Botany Manual/Recovery Plan/listing statement/Forestry Tas Technical Report Phytophthora/Recovery Research Report		
<i>Botrychium australe</i>	Austral Moonwort, Parsley- fern		is a forest dwelling species	Add to RFA priority species list
<i>Brachyglottis brunonis</i>	Brown's Tree-daisy			
<i>Brachyloma depressum</i>	Spreading Brachyloma		is a forest dwelling species	Add to RFA priority species list
<i>Brachyscome radicata</i>	Rooted Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Brachyscome rigidula</i>	Hairy Cutleaf Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Brachyscome sieberi var gunnii</i>	Sieber's Daisy	Forest Botany Manual		
<i>Brachyscome tenuiscapa var pubescens</i>	Hairy Mountain Daisy	Forest Botany Manual		
<i>Brunonia australis</i>	Blue Pincushion	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Caesia calliantha</i>	Blue Grass-lily	Forest Botany Manual		
<i>Caladenia anthracina</i>	Black-tipped spider orchid		is a forest dwelling species	Add to RFA priority species list
<i>Caladenia caudata</i>	Tailed Spider Orchid	Forest Botany Manual/Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Caladenia congesta</i>	Black-tongue Caladenia	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Caladenia filamentosa var filamentosa</i>	Daddy Long-legs	Forest Botany Manual		

Species	Common name	Prescription source	Changes	Recommendation
<i>Caladenia lindleyana</i>	Lindley's Spider Orchid	Forest Botany Manual/Recovery Plan		
<i>Caladenia pallida</i>	Rosy Spider Orchid	Forest Botany Manual/Recovery Plan		
<i>Caladenia saggicola</i>	Sagg spider orchid	Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Caladenia sylvicola</i>	Forest Fingers		is a forest dwelling species	Add to RFA priority species list
<i>Caladenia tonellii</i>	Robust fingers	Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Calandrinia granulifera</i>	Grainy Purslane	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Callitris aff oblonga</i>	South Esk Pine	Forest Botany Manual/Recovery Plan/listing statement/Threatened Flora Manual NE Tas/RFA Management Prescription Report	now <i>Callitris oblonga</i> ssp <i>oblonga</i>	change name to accord with 1999 plant census
<i>Calocephalus citreus</i>	Lemon Beauty-heads	Forest Botany Manual		
<i>Calocephalus lacteus</i>	Milky Beauty-heads	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Calochilus campestris</i>	Copper beard orchid		is a forest dwelling species	Add to RFA priority species list
<i>Carex gunniana</i>	Sedge			
<i>Carex longebrachiata</i>	Bergalia Tussock, Drooping Sedge	Forest Botany Manual		
<i>Centaurium spicatum</i>	Australian Centaury		is a forest dwelling species	Add to RFA priority species list
<i>Centipeda cunninghamii</i>	Common Sneezeweed	Forest Botany Manual		
<i>Chamaesyce drummondii</i>	Caustic Weed	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Cheilanthes distans</i>	Cloak Fern	RFA Report Threatened Ferns/Threatened Flora Manual NE Tas		
<i>Chiloglottis trapeziformis</i>	Broad-lip Bird Orchid	Recovery Plan		
<i>Colobanthus curtisiae</i>	Curtis' Colobanth	Threatened Flora Manual NE Tas/Forest Botany Manual/Community Recovery Plan		
<i>Conospermum hookeri</i>	Variable Smoke-bush	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Cotula vulgaris var australasica</i>	Slender Cotula	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Cryptandra amara</i>	Bitter Cryptandra	Forest Botany Manual		
<i>Cryptostylis leptochila</i>	Small Tongue Orchid		is a forest dwelling species	Add to RFA priority species list
<i>Cyathea X marcescens</i>	Skirted Tree-fern	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Cynoglossum latifolium</i>	Forest Hound's Tongue		is a forest dwelling species	Add to RFA priority species list
<i>Cyphanthera tasmanica</i>	Tasmanian Ray-flower	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Cyrtostylis robusta</i>	Large Gnat Orchid	Forest Botany Manual/Recovery Plan		
<i>Desmodium gunnii</i>	Slender Tick Trefoil	Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report		
<i>Deyeuxia apsleyensis</i>	Apsley Bent Grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia benthamiana</i>	Bent Grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia brachyathera</i>	Bent Grass		is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia decipiens</i>	Trickerey-grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia lawrencei</i>	Lawrence's Bent Grass	Forest Botany Manual		
<i>Deyeuxia minor</i>	Bent Grass			

Species	Common name	Prescription source	Changes	Recommendation
<i>Dianella longifolia</i> var <i>longifolia</i>	Pale or Smooth Flax-lily	Forest Botany Manual		
<i>Dichopogon strictus</i>	Chocolate-lily, Grass-lily - N.S.W.	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Discaria pubescens</i>	Druce Thorn-bush	Forest Botany Manual/Recovery Research Report		
<i>Diuris palustris</i>	Swamp Diuris	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Doodia caudata</i>	Small Rasp-fern	RFA Report Threatened Ferns/Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Dryopoa dives</i>	Giant Mountain Grass	Forest Botany Manual		
<i>Ehrharta juncea</i>	Forest Wire-grass	Forest Botany Manual		
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		is a forest dwelling species	Add to RFA priority species list
<i>Epacris acuminata</i>	Clasping-leaf Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris apsleyensis</i>	Apsley Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris barbata</i>	Bearded Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris curtisiae</i>	Curtis' Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora		
<i>Epacris exserta</i>	South Esk Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris glabella</i>	Funnel Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris grandis</i>	Great Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris limbata</i>	Border Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris stuartii</i>	Stuart's Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora	Not a forest species	Remove from RFA priority List
<i>Epacris virgata</i>	Pretty Heath, Drumstick Heath	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Forest Botany Manual/Recovery Plan		
<i>Epacris virgata sens strict</i> <i>Beaconsfield</i>			listed on TSPA 1995 as <i>E. virgata</i>	

Species	Common name	Prescription source	Changes	Recommendation
<i>Eryngium ovinum</i>	Blue Devil	Forest Botany Manual		
<i>Eucalyptus barberi</i>	Barbers Gum	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Eucalyptus globulus ssp pseudoglobulus</i>	Gippsland Blue Gum		is a forest dwelling species	Add to RFA priority species list
<i>Eucalyptus morrisbyi</i>	Morrisby's Gum	Forest Botany Manual/wwf report		
<i>Eucalyptus perriniana</i>	Spinning Gum	Forest Botany Manual		
<i>Eucalyptus radiata ssp robertsonii</i>	Narrow-leaf Peppermint	Forest Botany Manual	now ssp radiata will be in next census	
<i>Eucalyptus risdonii</i>	Risdon Peppermint	Forest Botany Manual/wwf report		
<i>Euphrasia collina ssp deflexifolia</i>		Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Euphrasia collina ssp tetragona</i>			is a forest dwelling species	Add to RFA priority species list
<i>Euphrasia fragosa</i>	Shy Eyebright			
<i>Euphrasia scabra</i>	Yellow Eyebright	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Euphrasia semipicta</i>	Peninsula Eyebright	Forest Botany Manual		
<i>Gahnia rodwayi</i>	Rodway's Saw-sedge		is a forest dwelling species	Add to RFA priority species list
<i>Genoplesium nudum</i>	Tiny Midge Orchid	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Glycine latrobeana</i>	Dwarf Clover or Purple Glycine	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/Recovery Research Report/RFA Management Prescription Report		
<i>Glycine microphylla</i>	Small-leaved Glycine	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Gompholobium ecostatum</i>	Dwarf Wedge-Pea		is a forest dwelling species	Add to RFA priority species list
<i>Goodenia amplexans</i>	Clasping Goodenia		is a forest dwelling species	Add to RFA priority species list
<i>Goodenia barbata</i>	Purple Goodenia		is a forest dwelling species	Add to RFA priority species list
<i>Gratiola pubescens</i>	Hairy Brooklime	Forest Botany Manual		
<i>Grevillea australis var linearifolia</i>	Southern Grevillea	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Gynatrix pulchella</i>	Common Hemp Bush	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Gyrostemon thesioides</i>	Didymotheca	Threatened Flora Manual NE Ta/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Hakea ulicina</i>	Furze Hakea	Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Haloragis aspera</i>	Rough Raspwort	Forest Botany Manual		
<i>Haloragis heterophylla</i>	Variable Raspwort	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Hardenbergia violacea</i>	False Sarsparilla	Forest Botany Manual/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Changes	Recommendation
<i>Hedycarya angustifolia</i>	Austral Mulberry		is a forest dwelling species	Add to RFA priority species list
<i>Hibbertia calycina</i>	Lesser Guinea-flower	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Hibbertia obtusifolia</i>	Hoary Guinea-flower	Forest Botany Manual		
<i>Hibbertia rufa</i>	Brown Guinea-flower	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Hibbertia virgata</i>	Twiggy Guinea-flower	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Hierochloe rariflora</i>	Cane Holy-grass, Scented Holy-grass		is a forest dwelling species	Add to RFA priority species list
<i>Hovea corrickiae</i>	Corrick's Hovea,	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Hyalosperma demissum</i>	Drooping Hyalosperma	Forest Botany Manual		
<i>Hydrocotyle comocarpa</i>	Mueller's Pennywort		is a forest dwelling species	Add to RFA priority species list
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	Forest Botany Manual		
<i>Hypolepis distans</i>	Scrambling Ground-fern	RFA Report Threatened Ferns		
<i>Hypolepis muelleri</i>	Harsh Ground-fern	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Hypoxis vaginata</i>	Purple Star	Forest Botany Manual		
<i>Isoetopsis graminifolia</i>	Grass Cushions	Forest Botany Manual		
<i>Isolepis habra</i>	Habra Club-rush	Forest Botany Manual		
<i>Isolepis setacea</i>	Bristly Club-rush	Forest Botany Manual		
<i>Isolepis stellata</i>	Star Club-rush	Forest Botany Manual		
<i>Juncus amabilis</i>	Gentle Juncus	Forest Botany Manual		
<i>Juncus prismatocarpus</i>	Branching Rush			
<i>Juncus vaginatus</i>	Clustered Rush	Forest Botany Manual		
<i>Lasiopetalum micranthum</i>	Tasmanian Velvet Bush	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report		
<i>Lepidium hyssopifolium</i>	Peppercress	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report		
<i>Lepidium pseudotasmanicum</i>	Peppercress	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Lepidosperma tortuosum</i>	Tortuous or Twisting Rapier-sedge	Forest Botany Manual		
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge		is a forest dwelling species	Add to RFA priority species list
<i>Leptorhynchos elongatus</i>	Lanky Buttons	Forest Botany Manual		
<i>Leucochrysum albicans</i> ssp <i>albicans</i> var <i>tricolor</i>	Grassland Paper Daisy	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Leucopogon lanceolatus</i>	Lance Beard-heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora		

Species	Common name	Prescription source	Changes	Recommendation
<i>Leucopogon virgatus</i> var <i>brevifolius</i>			is a forest dwelling species	Add to RFA priority species list
<i>Levenhookia dubia</i>	Hairy Stylewort		is a forest dwelling species	Add to RFA priority species list
<i>Lobelia pratioides</i>	Poison Lobelia	Forest Botany Manual		
<i>Lobelia rhombifolia</i>	Branched Lobelia	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Lomatia tasmanica</i>	King's Lomatia			
<i>Melaleuca pustulata</i>	Cranbrook Paperbark	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Micrantheum serpentinum</i>	Serpentine Micrantheum	Forest Botany Manual		
<i>Millotia muelleri</i>	Common Bow-flower		is a forest dwelling species	Add to RFA priority species list
<i>Millotia tenuifolia</i>	Soft Millotia	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Mirbelia oxylobioides</i>	Mountain Mirbelia		is a forest dwelling species	Add to RFA priority species list
<i>Monotoca submutica</i> var <i>autumnalis</i>	Round-leaf Monotoca	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Odixia achlaena</i>		Forest Botany Manual		
<i>Olearia hookeri</i>	Hooker's Daisy Bush	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Ozothamnus lycopodioides</i>	Lycopoid Everlasting	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Ozothamnus selaginoides</i>	Clubmoss Everlasting		Rediscovered – now listed as Endangered	Add to RFA priority species list
<i>Pandorea pandorana</i>	Wonga Vine		is a forest dwelling species	Add to RFA priority species list
<i>Pellaea calidrupium</i>	Hot-rock Fern	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Pentachondra ericifolia</i>	Matted Pentachondra	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Persicaria decipiens</i>	Slender Knotweed	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Persicaria subsessilis</i>			is a forest dwelling species	Add to RFA priority species list
<i>Persoonia muelleri</i> var <i>angustifolia</i>	Mueller's Geebung			
<i>Phebalium daviesii</i>	Davies' Wax-flower	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Phyllangium distylis</i>	Tiny Mitrewort		is a forest dwelling species	Add to RFA priority species list
<i>Phyllangium divergens</i>	Wiry Mitrewort			
<i>Pilularia novae-hollandiae</i>	Austral Pilwort		is a forest dwelling species	Add to RFA priority species list
<i>Pimelea axiflora</i> ssp <i>axiflora</i>	Bootlace Bush		is a forest dwelling species	Add to RFA priority species list
<i>Pimelea curviflora</i> var <i>gracilis</i>	Slender Curved Rice-flower	Forest Botany Manual		

Species	Common name	Prescription source	Changes	Recommendation
<i>Pimelea curviflora</i> var <i>sericea</i>	Curved Rice-flower		is a forest dwelling species	Add to RFA priority species list
<i>Pimelea filiformis</i>	Trailing Rice-flower	Forest Botany Manual		
<i>Pimelea flava</i> ssp <i>flava</i>	Yellow Rice-flower	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pimelea pauciflora</i>	Poison Rice-flower	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Plantago debilis</i>	Shade Plantain	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Plantago gaudichaudii</i>	Gaudichaud's Plantain		is a forest dwelling species	Add to RFA priority species list
<i>Pneumatopteris pennigera</i>	Lime Fern	RFA Report Threatened Ferns/Forest Botany Manual		
<i>Poa mollis</i>	Soft Poa Grass	Forest Botany Manual		
<i>Podotheca angustifolia</i>	Sticky Long-heads	Forest Botany Manual	a recent record near Ulverstone found for this species, Status not yet changed TSPA 1995	
<i>Polyscias aff sambucifolia</i>	Elderberry Panax	Threatened Flora Manual NE Tas		
<i>Pomaderris elachophylla</i>	Small-leaf Pomaderris	Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report		
<i>Pomaderris intermedia</i>	Tree Pomaderris		is a forest dwelling species	Add to RFA priority species list
<i>Pomaderris oraria</i>	Coast Pomaderris	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Pomaderris paniculosa</i> ssp <i>paralia</i>	Paralia Dogwood		is a forest dwelling species	Add to RFA priority species list
<i>Pomaderris phyllicifolia</i> ssp <i>phyllicifolia</i>	Narrow-leaf Pomaderris	Forest Botany Manual/Threatened Flora Manual NE Tas	listed on RFA priority list as <i>Pomaderris phyllicifolia</i> should be ssp <i>phyllicifolia</i>	Change name to accord with to 1999 plant census
<i>Prasophyllum apoxychilum</i>	Tapered leek orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum correctum</i>	Gaping leek orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum milfordense</i>	Milford leek orchid	Recovery Plan		
<i>Prasophyllum montanum</i>	Mountain Leek Orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum perangustum</i>	Knocklofty leek orchid	Forest Botany Manual/Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum robustum</i>	Robust Leek Orchid	Recovery Plan	Rediscovered – now listed as Endangered	Add to RFA priority species list
<i>Prasophyllum stellatum</i>	Ben Lomond leek orchid	Recovery Plan		
<i>Prasophyllum tadgellianum</i>	Tadgell's Leek Orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prostanthera cuneata</i>	Alpine Mint-Bush	Forest Botany Manual		
<i>Prostanthera rotundifolia</i>	Round-leaved Mint Bush	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Pterostylis atriola</i>	Snug greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis commutata</i>	Midland Greenhood	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis cynnocephala</i>	Swan Greenhood		is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Changes	Recommendation
<i>Pterostylis falcata</i>	Sickle Greenhood	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis grandiflora</i>	Cobra or Superb Greenhood	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis sanguinea</i>	Banded Greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis squamata</i>	Ruddy Greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis tunstallii</i>			is a forest dwelling species	Add to RFA priority species list
<i>Pultenaea hibbertioides</i>	Guinea-flower Bush-pea	Forestry Tas Technical Report Phytophthora		
<i>Pultenaea humilis</i>	Dwarf Bush-pea			
<i>Pultenaea prostrata</i>	Bush Pea	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Pultenaea selaginoides</i>	Clubmoss Bush-pea	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Research Report/RFA Management Prescription Report		
<i>Ranunculus pumilio</i>	Ferny Buttercup	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Ranunculus sessiliflorus</i>	Small-flowered Australian Buttercup	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Rhodanthe anthemoides</i>	Chamomile Sunray	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Rutidosia multiflora</i>	Small Wrinklewort	Threatened Flora Manual NE Tas		
<i>Rytidosperma procerum</i>	Tall Wallaby-grass		was <i>Danthonia procera</i>	Change name to accord with to 1999 plant census
<i>Scaevola aemula</i>	Fairy Fan-flower	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Schoenoplectus validus</i>	River or Lake Club-rush	Forest Botany Manual		
<i>Schoenus latelaminatus</i>	Medusa	Forest Botany Manual		
<i>Scleranthus diander</i>	Knawel	Forest Botany Manual		
<i>Scleranthus fasciculatus</i>	Knawel	Forest Botany Manual		
<i>Scutellaria humilis</i>	Dwarf Sculcap	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Senecio macrocarpus</i>	Fluffy Groundsel		is a forest dwelling species	Add to RFA priority species list
<i>Senecio squarrosus</i>	Rigid Grassland Groundsel	Forest Botany Manual		
<i>Senecio velleioides</i>	Forest Groundsel	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Spyridium eriocephalum</i>	Heath Spyridium	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Spyridium lawrencei</i>	Small-leaf Spyridium	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report/Recovery Research Report	was <i>Spyridium microphyllum</i>	Change name to accord with to 1999 plant census
<i>Spyridium obcordatum</i>	Creeping Spyridium	Recovery Plan/Forest Botany Manual/Recovery Research Report		
<i>Spyridium parvifolium var molle</i>	Soft Furneaux Spyridium	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Changes	Recommendation
<i>Spyridium parvifolium var parvifolium</i>	Australian Dusty Miller		is a forest dwelling species	Add to RFA priority species list
<i>Spyridium vexilliferum</i>	Winged Spyridium	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Stackhousia gunnii</i>	Gunn's Mignonette	Threatened Flora Manual NE T/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Stackhousia viminea</i>	Slender Stackhousia	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Stellaria multiflora</i>	Rayless Starwort	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Stenanthemum pimeleoides</i>	Spreading Stenanthemum	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report/Recovery Research Report		
<i>Taraxacum aristum</i>	Austral Dandelion		is a forest dwelling species	Add to RFA priority species list
<i>Tetradlea gunnii</i>	Serpentine Black-eyed Susan	Forestry Tas Technical Report Phytophthora/Forest Botany Manual/RFA Management Prescription Report/Recovery Plan		
<i>Teucrium corymbosum</i>	Forest Germander	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Thelymitra mucida</i>	Plum Orchid	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Thesium australe</i>	Austral Toadflax	Forest Botany Manual/Recovery Report ,extension Survey	not yet located in Tas.	
<i>Thismia rodwayi</i>	Fairy Lanterns	Forest Botany Manual		
<i>Thryptomene micrantha</i>	Heath Myrtle, Ribbed Thryptomene,	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Tmesipteris parva</i>	Small Fork-fern		is a forest dwelling species	Add to RFA priority species list
<i>Tricoryne elatior</i>	Yellow Rush-lily, Yellow Autumn Lily	Forest Botany Manual		
<i>Triptilodiscus pygmaeus</i>	Common Sunray		is a forest dwelling species	Add to RFA priority species list
<i>Uncinia elegans</i>	Handsome Hook-sedge		is a forest dwelling species	Add to RFA priority species list
<i>Velleia paradoxa</i>	Spur Velleia	Forest Botany Manual		
<i>Veronica notabilis</i>	Forest Speedwell	Forest Botany Manual	Now extant Collingwood River status not yet changed TSPA 1995	
<i>Veronica novae-hollandiae</i>	New Holland Veronica		is a forest dwelling species	Add to RFA priority species list
<i>Veronica plebeia</i>	Trailing Speedwell	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Viminaria juncea</i>	Native Broom	Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Viola caleyana</i>	Swamp Violet	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Viola cunninghamii</i>	Cunningham's Violet	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Changes	Recommendation
<i>Vittadinia cuneata</i>	Fuzzy New Holland Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Vittadinia gracilis</i>	Graceful New Holland Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Vittadinia megacephala</i>	Giant New Holland Daisy		is a forest dwelling species	Add to RFA priority species list
<i>Vittadinia muelleri</i>	Narrow-leaf New Holland Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Westringia angustifolia</i>		Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Westringia brevifolia</i> var <i>raleighii</i>		Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Wurmbea latifolia</i>	Early Nancy, Harbinger-of-spring			
<i>Xanthorrhoea bracteata</i>	Grass-tree, Black-boy	Recovery Plan/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/RFA Management Prescription Report		
<i>Zieria cytisoides</i>	Downy or Dwarf Zieria	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Zieria veronicea</i>	Pink Zieria	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list

SPECIES NOT LISTED UNDER LEGISLATION

FLORA

<i>Arthrochilus huntianus</i>	elbow orchid		Been split into two subspecies	remove from RFA priority list
<i>Arthropodium minus</i>	Small Vanilla-lily	Forest Botany Manual		
<i>Asplenium trichomanes</i> ssp <i>trichomanes</i>	Maidenhair Spleenwort	RFA Report Threatened Ferns		
<i>Austrofestuca hookeriana</i>		Forest Botany Manual	delisted	remove from RFA priority list
<i>Boronia rhomboidea</i>				
<i>Carex bichenoviana</i>	Sedge	Forest Botany Manual		
<i>Carex tasmanica</i>	Curly Sedge	Forest Botany Manual	Listed On EPBCA 1999 considered forest dependant	List on RFA priority list
<i>Cyathea cunninghamii</i>	Slender Tree-fern	RFA Report Threatened Ferns/Forest Botany Manual	Forest Botany Manual	
<i>Epacris</i> aff <i>exerta</i> Union Bridge			Listed on TSPA 1995 as <i>E. exerta</i>	
<i>Epacris graniticola</i>			listed on TSPA 1995 as <i>Epacris virgata</i>	
<i>Epacris marginata</i>	Stiffly Erect Heath	Forest Botany Manual		

Species	Common name	Prescription source	Changes	Recommendation
Epacris virgata Kettering		Recovery Plan	listed on TSPA 1995 as E. virgata	
Epacris virgata sens strict		Recovery Plan	listed on TSPA 1995 as E. virgata	
Beaconsfield				
Eucalyptus archeri	Alpine Cider Gum	Forest Botany Manual		
Eucalyptus cordata	Silver Gum	Forest Botany Manual/wwf report		
Festuca plebeia		Forest Botany Manual		
Gahnia sieberiana	red fruit saw sedge	Forest Botany Manual	delisted	remove from RFA priority list
Grevillea australis var tenuifolia	Southern Grevillea			
Rytidosperma nitens		Forest Botany Manual		

**Sustainability Indicators for
Tasmanian Forests
1996 – 2001**

SUSTAINABILITY INDICATORS FOR TASMANIAN FORESTS

1996-2001

Version - 25. 2.02

**PREPARED BY THE TASMANIAN AND
COMMONWEALTH GOVERNMENTS FOR THE
2002 REVIEW OF THE TASMANIAN REGIONAL
FOREST AGREEMENT**

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ACRONYMS

ABARE	Australian Bureau of Agricultural Research Economics
ABS	Australian Bureau of Statistics
AFFA	Agriculture, Fisheries and Forestry Australia
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZSIC	Australian and New Zealand Standard Industrial Classification
AUSRIVAS	Australian River Assessment System
CAR	Comprehensive, Adequate and Representative
CFFP	CSIRO Division of Forestry and Forest Products
CRC	Cooperative Research Centre
CRCSPF	Cooperative Research Centre for Sustainable Production Forestry
DIER	Department of Infrastructure, Energy and Resources
DPIWE	Department of Primary Industries, Water and Environment
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESRI	Environmental Systems Research Institute
FEF	Forest Education Foundation
FPB	Forest Practices Board
FRA	Forest Resource Assessment
GDP	Gross Domestic Product
GIS	Geographic Information System
GST	Goods and Services Tax
GTSPOT	Geo Temporal Species Point Observation Tasmania
IGP	Industry Gross Product
ISO	International Standards Organisation
IVA	Industry Value Added
LIST	Land Information System Tasmania
LTER	Long-term Ecological Research
MDC	Management Decision Classification
NCAS	National Carbon Accounting System
NVIS	National Vegetation Information System
PFE	Permanent Forest Estate
PI-Type	Photo-interpreted Forest Type
RAMSAR	International Convention on Wetlands of International Importance
RFA	Regional Forest Agreement
RPDC	Resource Planning and Development Commission
RSE	Relative Standard Error
SAC	Scientific Advisory Committee
TAFE	Technical and Further Education
TALC	Tasmanian Aboriginal Land Council
TASVEG	Tasmanian Vegetation Management Strategy
TSPA	<i>Threatened Species Protection Act 1995</i>

EXECUTIVE SUMMARY

The Sustainability Indicators for the first five-year review of the Tasmanian Forest Agreement were agreed upon by the State and the Commonwealth in 2000, after stakeholder input in 1999. The 41 indicators and 11 research indicators agreed upon are all part of a set of indicators developed by 12 countries, including Australia, known as the Montreal Process Criteria and Indicators. The 12 countries together contain more than 90 percent of the world's temperate and boreal forests.

This report covers the period July 1996 (the date of the data used for the Tasmanian RFA) to June 2001, however, for some indicators baseline information was not available until some time later and these indicators have been measured over a shorter timeframe.

The key results under each criterion and the progress being made with research applicable to indicator development are summarised below.

Criterion1: Conservation of Biological Diversity

Ecosystem Diversity

Over the five year period there has been a net increase of 0.3% (10,700 hectares) in the total area of mapped forest in Tasmania to 3,364,000 hectares largely due to the development of the plantation sector. Expansion of the plantation estate (by 48,800 hectares) has slightly exceeded the recorded reductions in the area of native forest. Native forest communities have decreased by 38,100 hectares or 1.2% since 1996. The majority of the loss is in the Wet Eucalypt communities, which decreased by 25,000 hectares.

The analysis of growth stages showed a higher proportion of regrowth and regeneration on multiple use State forest and private land than on conservation reserves where mature forest predominates.

The Comprehensive, Adequate and Representative (CAR) forest reserve system on both public and private land in Tasmania now exceeds 2.7 million hectares. Within this reserve system 1,271,200 hectares of forested land, or 40.1% of Tasmania's native forests, are now protected, mostly (86%) in Formal Reserves. This represents an increase of 293,300 hectares of forest reserved, or 30.0%, since 1996.

More than 850,000 hectares (69%) of Tasmania's old growth forest are protected in reserves. This is an increase of 168,900 hectares or 25% since 1996. From 1996 to 2001 7,100 hectares, or 0.6%, of old growth forest in Tasmania was logged, the majority in the Wet Eucalypt communities. There has been no mapping since 1996 of old growth forest burnt by wildfire or new areas gained through ageing of forest.

Species Diversity

During the period 1996-2001 no forest dwelling vertebrates became extinct and no new species were scientifically recognised. An additional 129 plants listed under the *Tasmanian Threatened Species Protection Act 1995* have been identified as forest dwelling species on the basis of new information. Thirty six listed species have changed status with nine species having an improved status and twenty-seven species with “worsened” status for a variety of reasons. These reasons include taxonomic changes, loss of habitat, mining, shooting, inappropriate fire regimes, prolonged drought and introduced species. Two flora species and one fauna species thought to be extinct in Tasmania were rediscovered during the period. A further three species have been de-listed from the *Threatened Species Protection Act* since the signing of the RFA, due to increased knowledge providing a better understanding of their conservation status..

Monitoring of representative species across their range has increased during 1996-2001. Plants, birds, mammals, fish and invertebrates are included in the program. For most species it is too early to report on trends although the mammal populations monitored can be reported as being stable. Monitoring the effectiveness of management practices under the Forest Practices Code into the future is a key component of this program.

Criterion 2: Maintenance of Productive Capacity of Forest Ecosystems

The net area of public forest available for timber production has decreased by 2.9% since 1996. This is largely due to the transfer of State forest to the reserve system as a result of the RFA, which has been partly compensated by land purchase and access to other public land. Private Forests Tasmania will complete their scheduled resource review for private land during 2002.

An increase in the area of plantation in Tasmania is a significant element in the longer-term sustainability and growth of the timber industry. During the period 1996-2001 softwood plantation increased by 11,900 hectares (17%) and eucalypt plantation increased by 44,000 hectares (60%).

On public native forest the actual eucalypt sawlog cut was within the determined sustainable yield for each of the five years, 1996-2001. Pulpwood was obtained as a significant byproduct of sawlog operations. The harvest of Special Species Timbers (blackwood, celery top pine, myrtle, huon pine and sassafras) remained low averaging 18 000 cubic metres annually. No sawlogs and only a small volume of pulpwood was sold from eucalypt plantations while sawlogs, veneer and pulpwood were obtained from the older *Pinus radiata* plantations. Sustainable yields have not been determined for the pine plantations with the annual cut remaining fairly stable but limited by age class distribution.

On private land there is no sustainable sawlog cut determined however the annual cut for all products was within the 1996 estimate for each of the five years, 1996-2001.

Non-timber forest products assessed under this criterion included honey, tree ferns, seeds and game. The use of apiary sites to source leatherwood honey remained stable during the period.

Reliable information on tree fern harvest is not available for this review but the introduction of a tagging system for all tree ferns taken from 2002 on should ensure data is available for the next five-year review. Private collectors and Forestry Tasmania continue to collect seed primarily for their own use in forest regeneration and for propagating nursery stock. The harvest of game is largely determined by market factors. Populations of harvested wild game species have remained stable during this review period.

Data is not available on effective plantation stocking one year after planting. All of the major plantation growers have internal management systems that provide for assessment of plantation stocking and remedial treatment. The Forest Practices Code prescribes that where survival is less than 50% re-establishment should be considered.

Regeneration of harvested native forest is required for all forest but is only reported for State forest. The results for the three years for which data are available show that the prescribed stocking standard was achieved in coupes comprising over 92% of the area subject to clearfelling, and in coupes comprising over 97% of the area subject to partial logging.

Criterion 3: Maintenance of Ecosystem Health and Vitality

Annual or biennial health surveillance is carried out in plantations, to protect the investment they represent. The most damaging agent in eucalypt plantations is mammal browsing with 8,400 hectares requiring the application of browsing controls in 2000-2001. Spring needle cast fungus is the most significant agent affecting pine plantations. It has a severe impact at elevations above 400 metres.

Native forests require a lower intensity of health management, as outbreaks are often part of the natural ecosystem dynamics. Severe drought during 1999-2001 in south-eastern Tasmania caused extensive mortality of both eucalypts and understorey species. Management prescriptions are in place to minimise the potential spread of Myrtle Wilt and root rot fungus (*Phytophthora cinnamomi*) as a result of forest operations.

The area of forest burnt annually by wildfire during 1996-2001, while variable, was consistently lower than the 50 year average of 26,900 hectares despite the drought conditions experienced in some areas of the State.

Criterion 4: Conservation and Maintenance of Soil and Water Resources

Under the Forest Practices Code all forest areas subject to forest practices must be assessed for soil erosion potential. Where soils have a high or very high erodibility the Soil and Water Scientist at the Forest Practices Board must be notified and advice sought. In 1999-2000 171 notifications were received and in 2000-2001, 198 notifications were received. An external review of the soil and water provisions of the Code took place during the review period resulting in the provisions for preventing erosion being improved.

In reserves managed for conservation values only a small percentage of the land is subject to human pressures with priority for erosion control work given to walking tracks, particularly in alpine areas.

Criterion 5: Maintenance of Forest Contribution to Global Carbon Cycles

Forests are important natural pools of carbon. Estimates of forest biomass provide a measure of their contribution to global carbon cycles. Within the Australian Greenhouse Office, the National Carbon Accounting System (NCAS) has been developed to provide comprehensive national capacity to report carbon emissions and sink activities for land based (largely forestry and agricultural) activities.

The first phase of development of the National Carbon Accounting System is currently nearing completion. The biomass estimate for Tasmania of 721 million tonnes is known to be an over-estimate, as it assumes a mature condition for all forests. It does not take into account past disturbance events such as fire or harvesting. It is not possible to measure trends in this indicator at present, however accuracy will improve over time.

Criterion 6: Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits to Meet the Needs of Societies.

Production and Consumption

The volume of logs harvested in Tasmania has remained largely constant during the period. The volume of sawn, peeled or sliced timber produced shows a gradual increase in volumes, particularly for softwood plantation material. Turnover value from the forest industry sectors exceeds \$1.2 billion per year. The annual turnover since the RFA has increased by over \$100 million.

Very little information is available on the value and production of non-wood forest products. The reported value of honey and beeswax production over the last five years has ranged from \$1.4 to \$2.1 million annually. This is probably about 80% of total productions as only apiarists with more than 200 hives are surveyed.

The value of the wood and paper products manufacturing industries remains significant to the Tasmanian economy, providing more than 22% of all manufacturing value. The value of the sawmilling and timber dressing industry as a percentage of the manufacturing sector value has remained relatively constant. However, the total value of wood and paper products, as a percentage of the value of the Tasmanian manufacturing sector, has declined.

Recreation and Tourism

The overwhelming majority of public forested land including wilderness in Tasmania is available for recreation and tourism. Recreation is not a management objective for Nature Reserves and on State forest recreation is restricted for limited periods from current operational areas for safety reasons.

The proportion of high quality wilderness reserved reached 95% by 2001, an increase of 9% since 1996. However, this figure does not allow for the possibility of some reduction in wilderness values in some areas due to developments outside reserves.

Private forested land (whether or not reserved) is available for recreation at the owner's discretion.

There is a wide range of recreation activities available on forest. Some activities such as hunting, horse-riding and trail bikes are restricted to specific tenures or sites.

Visits to recreational sites on forested public tenures remain strong with some areas increasing in visitor numbers over the period. The most visited sites have been Freycinet, Cradle Mountain/Lake St. Clair, Tasman and Mt Field National Parks. Visitation to the new Tahune AirWalk in the Southern Forests, since opening in July 2001, indicates similar popularity to the above National Parks.

Cultural, social and spiritual needs and values

Tasmanian legislation, including the *Aboriginal Relics Act 1975*, *Aboriginal Lands Act 1995*, *National Parks and Wildlife Act 1970* and the *Forestry Act 1920*, provides for the protection and management of Aboriginal heritage values. About 7,500 hectares of State forest are currently zoned for indigenous cultural heritage management. Since 1998, thirteen areas of public land have been transferred to the Aboriginal Land Council of Tasmania.

There are 112 places within State forest specifically managed to protect non-indigenous heritage values. These sites lie within special management zones covering 18,000 hectares. Twenty eight places are designated Historic Sites under the *National Parks and Wildlife Act*. These occur on an area of 16,064 hectares of which 4,320 hectares is forested.

Employment and Community Needs

The Australian Bureau of Statistics (ABS) compiles annual data on employment in the wood, paper and paper products manufacturing sector. ABS reported that this sector employs more than 3,600 people in Tasmania representing nearly 18% of the total manufacturing sector. There has been a slight decline in percentage of people employed in the wood and paper manufacturing sector during 1996-2001 as a percentage of total employment in Tasmania. ABS, however, does not report separately employment in the forest management, harvesting and transport sectors.

In order to gain a better understanding of employment the Australian Bureau of Agricultural Research Economics (ABARE) was commissioned by the Department of Agriculture, Fisheries and Forestry – Australia (AFFA) to prepare two reports. The first study reported that for 1998-1999 there were 6,000 directly employed positions in the forest industry, which provided an estimated additional 2,640 indirect positions. The second study found that for the year 1999-2000 there were 8,259 full-time equivalent workers in the Tasmanian forestry sector excluding forest product transport.

Salary/wage rates for a sample of forest related occupations indicated that there have been increases ranging from 14.8%-19.3% over the period 1996-2001.

While annual fatalities in the forestry and logging sector remain at a consistent but low level (1 to 2 per year) the overall safe working practices across the industry have improved as evidenced by the decreasing injury frequency rate over the period 1996 to 2001.

Indigenous participation and management

The management framework maintains and enhances indigenous values through employment of officers, clearly stated objectives in management plans and ongoing communication with Aboriginal communities. For example the Department of Primary Industries, Water and

Environment (DPIWE) has an Aboriginal Heritage Section currently employing five officers and the Forest Practices Board employ a full-time permanent Aboriginal Heritage Officer. Processes are in place to ensure that all operational areas, irrespective of tenure, that are likely to contain Aboriginal sites are assessed prior to commencement of operations.

Criterion 7: Institutional and Economic Framework for Forest Conservation and Sustainable Management

The legal framework

There are numerous Acts referred to throughout this report that support conservation and sustainable management of forests.

The Regional Forest Agreement provides the framework and context for forest management in Tasmania. There is provision for management plans for both State forest and National Park tenures with plans subject to periodic review. The *Forest Practices Act 1985* provides the framework for operational planning across tenures. The Management Decision Classification system ensures that State forest is zoned to protect special values. All formal policies, strategies, codes of practice and plans listed in this report are available to the public and those specific to Tasmania provide opportunity for stakeholder input into development and review.

Best practice in forest management is encouraged through the Forest Practices Code for forestry operational activities and the same will apply for reserves when the draft Reserve Management Code of Practice is finalised and implemented in 2002.

The Tasmanian Parliament has from time to time approved the transfer of land to the Aboriginal community and there are mechanisms to provide for Aboriginal input into forest/park management. However, the *Aboriginal Relics Act 1975* (currently under review) does not specifically provide for participation by the Aboriginal community in planning for protection and management of Aboriginal sites located in forested areas.

The Institutional Framework

There are numerous provisions for public involvement activities and public education, awareness and extension programs. These provisions include various forms of agency consultation and liaison; formal programs such as Wildcare, Bushcare, Land for Wildlife and Landcare; visitor information centres, websites and publications; farm forestry advice; and field interpretive signs.

Forest planning in Tasmania is largely the responsibility of the relevant landowner. The principal public forest managers, Forestry Tasmania and DPIWE, have developed statutory planning systems to meet their needs. Private Forests Tasmania assists private forest owners in their planning processes as required. Some recent changes at both the National and State levels will assist cross-sectoral planning. These changes include the new Ministerial Councils on Primary Industries and Natural Resource Management at the national level. At the State level DPIWE and the Department of Infrastructure, Energy and Resources were formed in 1999 to better integrate the State's approach to natural resource management.

The requirement to develop and maintain essential skills is recognised by forest managers. These skills include relevant tertiary and technical training in forest practices, operational

competencies, safety, fire management and visitor services. It is recognised that there is a need to improve operational training particularly amongst the smaller operators.

The Forest Practices Board is the principal regulatory authority for forestry operations. From July 1999 the Board has required a certificate of compliance within 30 days of expiry of a Forest Practices Plan. The Board carries out independent random audits of Forest Practices Plans and responds to community complaints. It has the authority to apply sanctions where breaches of the Forest Practices Code and the Plan have been identified. In January 2000 the *Forestry Act 1920* was amended to remove most of Forestry Tasmania's regulatory powers in compliance with the National Competition Policy. DPIWE has trained Enforcement and Compliance Officers to ensure implementation its Acts and Regulations. Their responsibilities include investigation of illegal activities in reserves.

Capacity to Measure and Monitor Change

The availability of data to monitor indicators is generally good although there are some deficiencies. The data for private forest are generally not as good as for public forest. Comprehensive employment data are not available and dependent on industry specific studies. Forest biomass information is still in the early stages of development. The availability of non-wood production data is limited but improving.

Routine timber inventory, photographic interpretation mapping, special values assessments, regeneration assessments, forest health surveys, forest practices audits, water quality sampling and threatened species monitoring have continued during the period.

Several notable new initiatives since the RFA are:

- an enhancement of Tasmania's forest vegetation communities mapping, known as TASVEG 2000, is almost complete and will provide an improved basis for management and future RFA reporting;
- Forestry Tasmania and Gunns Limited now have Environmental Management Systems certified to ISO 14001;
- a Certificate of Compliance must support the successful achievement of reforestation upon completion of each Forest Practices Plan;
- the Forest Practices Board now reports on the Maintenance of the Permanent Forest Estate in Tasmania; and
- the Australian Greenhouse Office in conjunction with Tasmanian agencies is developing systems to undertake routine inventories of forest biomass as part of the National Carbon Accounting System.

Research and Development

Tasmania has maintained a very active program of research and development into the scientific understanding of forest ecosystem characteristics and functions. Research has been carried out by agencies, industry, universities, CSIRO and the Cooperative Research Centre for Sustainable Production Forestry. A major initiative has been the development of the Warra Long Term Ecological Research (LTER) site. The main focus of research at Warra is on the ecology of *Eucalyptus obliqua* wet forest.

Research is also being carried out in the areas of soil and water; threatened species; fire ecology; forest practices on biodiversity; and pests, weeds and diseases.

All commercial native forests and plantations in Tasmania are supported by research. Silvicultural research applicable to Tasmania is supported by a total of 99 scientists, technicians and university students.

Wood utilisation research is supported by 12.7 research staff (full-time equivalents).

Research Indicators

The research indicators provide narrative descriptions of the current research status of various Indicators under development from Criteria 1-6 and appear at the end of this report. The purpose of Research Indicators is to develop more easily captured, cost-effective and meaningful indicators that can then become part of routine sustainability monitoring and reporting.

Progress towards development of 10 of the 11 Indicators is reported with a number of relevant scientific research reports published. Not all the work is being carried out in Tasmania but will be of relevance to Tasmania.

The research Indicator most lacking direct research effort to date relates to the annual removal of firewood compared to sustainable volume. Some current ecological research on habitat requirements and maintenance will ultimately be relevant to this indicator.

Many of these studies being carried out are long term but it is anticipated that significant progress could be made in most areas by the time of the next five-year review.

INTRODUCTION

The Tasmanian Regional Forest Agreement (RFA) between the State of Tasmania and the Commonwealth of Australia was signed on 8 November 1997. Under Clause 91, required the Parties to develop agreed sustainability indicators as detailed below:

91. *The parties agree to develop and establish by the first of December 1999 an appropriate, practical and cost-effective set of Sustainability Indicators which:*

- *have regard to the Montreal Process Criteria (as amended from time to time), the current form of which is specified in Attachment 4, and take account of the processes and regional framework of indicators developed by the Montreal Process Implementation Group; and*
- *assess the criteria for sustainable forest management for the whole of the Tasmania Region; and*
- *take account of the results of the Warra Case Study to develop effective regional indicators; and*
- *include appropriate social and economic indicators; and*

In the development of those indicators, the Parties agree to:

- *Determine the frequency of monitoring and reporting; and*
- *Provide for public consultation and to take account of those comments; and*
- *Develop efficient linkages to the ongoing work being carried out on the Commonwealth and Tasmanian State of the Forests and State of the Environment Reports to avoid duplication of effort.*

The sustainability indicators for the first review developed by Tasmania and the Commonwealth in accordance with RFA requirements were published in June 2000. The paper “Sustainability Indicators for the first review in 2002” is available at: www.rfa.gov.au

This report for the 2002 review of the Tasmanian Regional Forest Agreement is the first to present the data and trends in sustainability indicators for forest management in Tasmania. It will be used as a basis for future reports. In general, the data are presented as at June 2001, five years after data were collected for the Tasmanian RFA. Where possible, indicators use data and information from the whole period: July 1996 to June 2001. However, some indicators whose baseline measures could not be established until later, have a shorter reporting period for this review; in subsequent reviews, in subsequent reviews these indicators will also cover the full five years the reporting period. The indicators may be amended prior to the 2007 five-year review.

This document will be the basis for the Tasmanian State of the Forests Report, 2002. It will also provide data and information for the Tasmanian State of the Environment Report, 2002. Both documents will be Tasmania’s contribution to national-level reporting.

Principal input to the development of this report was coordinated through the RFA Review Working Group which has representatives from the following agencies:

- Forest Practices Board
- Department of Premier and Cabinet
- Department of Infrastructure, Energy and Resources
- Department of Primary Industries, Water and Environment
- Forestry Tasmania
- Private Forests Tasmania
- Agriculture, Fisheries and Forestry Australia
- Environment Australia.

Other Tasmanian and Commonwealth agencies also contributed information when requested by the Working Group. Private-forestry sector information was provided through Private Forests Tasmania.

The format of this report is to follow the indicator numbering system and indicator name from the paper “Sustainability Indicators for the first review in 2002” referenced above. Large tables have been removed from the body of the document to Appendices with the same indicator number. Indicators that are currently being researched or developed are listed separately after the criteria and indicators covered in this report.

Criteria and the indicators for each criterion in this Report:

Criterion 1: Conservation of Biological Diversity

- **1.1.a** Extent of area by forest type and tenure
- **1.1.b** Area of forest type by growth-stage distribution by tenure
- **1.1.c** Extent of area forest type and reservation status
- **1.1.d** Area of old growth by forest type by reservation status
- **1.2.a** A list of forest-dwelling species
- **1.2.b** The status (rare, vulnerable, endangered or extinct) of forest-dwelling species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment
- **1.2.c** Population levels of representative species from diverse habitats monitored across their range

Criterion 2: Maintenance of Productive Capacity of Forest Ecosystems

- **2.1.a** Area of forest land and net area of forest land available for timber production
- **2.1.c** The area, age class and future yield of plantations of native and exotic species
- **2.1.d** Annual removal of wood products compared to sustainable volume

- 2.1.e Annual removal of non-timber products
- 2.1.f Area of plantation established meeting effective stocking one year after planting
- 2.1.g Area and percent of harvested area of native forest effectively regenerated

Criterion 3: Maintenance of Ecosystem Health and Vitality

- 3.1.a Area and percentage of forest affected by processes or agents that may change ecosystem health and vitality

Criterion 4: Conservation and Maintenance of Soil and Water Resources

- 4.1.a Area and percent of forest land systematically assessed for soil erosion hazard, and for which site-varying scientifically based measures to protect soil and water values are implemented

Criterion 5: Maintenance of Forest Contribution to Global Carbon Cycles

- 5.1.a Total forest ecosystem biomass and carbon pool

Criterion 6: Maintenance and Enhancement of Long-term Multiple Socio-economic Benefits to Meet the Needs of Societies

- 6.1.a Value and volume of wood and wood-products production, including value-adding through downstream processing
- 6.1.b Value and quantities of non-wood forest products
- 6.1.d Value of wood and non-wood-products production as percentage of regional value of production
- 6.2.a Area and percent of forest land available for general recreation and tourism
- 6.2.b Number, range and use of recreation/tourism activities available in a given region
- 6.2.c Number of visits to recreational sites per annum
- 6.4.a(i) Area and percent of forest land in defined tenures, management regimes and zonings which are formally managed in a manner which protect Indigenous peoples' cultural, social, religious and spiritual values, including non-consumptive appreciation of country
- 6.4.a(ii) Number of places of non-Indigenous cultural values in forests formally managed to protect these values
- 6.5.a Direct employment in the forest sector and forest-sector employment as a proportion of total employment
- 6.5.b Average wage rates and injury rates in major employment categories within the forest sector
- 6.6.a Extent to which the management framework maintains and enhances Indigenous values, including customary, traditional and native title use by Indigenous peoples and for Indigenous participation in forest management

Criterion 7: Legal, Institutional and Economic Framework for Forest Conservation and Sustainable Management

- 7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests

- **7.1.a** Provides mechanisms to clarify property rights and establish appropriate land-tenure arrangements that recognise traditional management practices and self-management as well as the existence of native title and the customary and traditional rights of indigenous people
 - **7.1.b** Provides for periodic forest-related planning, assessment, and policy review that recognises the range of forest values, including coordination with relevant sectors
 - **7.1.c** Provides opportunities for public participation in public policy and decision-making related to forests and public access to information
 - **7.1.d** Encourages the development and application of best practices codes for forest management
 - **7.1.e** Provides for the management of environmental, cultural, social and/or scientific values in forests and ensures the participation of Indigenous peoples in all aspects of forest planning and management processes
- **7.2** Extent to which the institutional framework supports the conservation and sustainable management of forests
 - **7.2.a** Provide for public involvement activities and public education, awareness and extension programs and make available forest-related information
 - **7.2.b** Undertake and implement periodic, forest-related planning, assessment, and policy review, including cross-sectoral planning and coordination
 - **7.2.c** Develop and maintain human resource skills across relevant disciplines
 - **7.2.e** Enforce laws, regulations and guidelines
- **7.4** Capacity to measure and monitor changes in the conservation and sustainable management of forests
 - **7.4.a** Availability and extent of up-to-date data, statistics and other information important to measuring or describing indicators associated with criteria 1-7
 - **7.4.b** Scope, frequency and statistical reliability of forest inventories, assessments, monitoring and other relevant information
- **7.5** Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services

- **7.5.a** Development of scientific understanding of forest ecosystem characteristics and functions
- **7.5.d** Enhancement of ability to predict impacts of human intervention on forests
- **7.5.f** Percent of native forest and plantations that is formally supported by silvicultural and utilisation research support

Indicators that are Currently being Researched and or Developed

- **1.1.e** Fragmentation of forest types
- **1.2.c** Population levels of representative species from diverse habitats monitored across their range
- **2.1.d** Annual removal of wood products compared to the sustainable volume – fuelwood/firewood aspects
- **2.1.e** Annual removal of non-timber products – water-supply aspects
- **3.1.c** Area and percentage of forest land with diminished or improved biological, physical and chemical components indicative of changes in fundamental ecological processes
- **4.1.e** Area and percent of forest land with significant compaction or change in soil physical properties resulting from human activities
- **4.1.f** Percent of water bodies in forest areas (eg stream kilometres, lake hectares) with significant variance of biological diversity from the historic range of variability
- **5.1.a** Total forest-ecosystem biomass and carbon pool, and if appropriate, by forest type, age class and successional stage
- **6.3.a** Value of investment, including investment in forest growing, forest health and management, planted forests, wood processing, recreation and tourism
- **6.5.a** Direct and indirect employment in the forest sector and forest-sector employment as a proportion of total employment
- **6.5.c (i)** Viability and adaptability to changing social and economic conditions of forest dependent communities

CRITERION 1: CONSERVATION OF BIOLOGICAL DIVERSITY

1.1 Ecosystem Diversity

This sub-criterion measures the current extent of forest cover, by forest type and growth stage, and its distribution across land tenures and reserve types. The focus on the area and growth stage of each forest community provides a measure of the extent and diversity of ecosystems, while the focus on land tenure and reservation status provides a measure of the comprehensiveness, adequacy and representativeness of the conservation reserve system.

Land tenure broadly reflects the intended use and legislative rights and responsibilities under which land and forests are managed. The tenure groups reported in this sub-criterion reflect the new public-land classification system implemented by the *Regional Forest Agreement (Land Classification) Act 1998*. Reservation status for conservation purposes is more specifically reported under Indicator 1.1.c.

Land tenure is recorded as at 30th June 2001, and is based on Department of Primary Industries, Water and Environment and Forestry Tasmania land classification mapping.

The Ecosystem Diversity sub-criterion is broken down into four indicators, each reported separately below.

1.1.a EXTENT OF AREA OF FOREST TYPES

The extent of each of the different vegetation communities is a measure of the forests' biological diversity at the species and ecosystem levels.

During the Tasmania RFA process in 1996, the State's native forest was classified and mapped into 50 communities as a basis for assessing their extent and conservation status and for monitoring change. For this assessment, the original 1996 RFA forest maps are compared with mid-2001 maps. (It is proposed that the new higher resolution TASVEG mapping be used as the basis for comparison over the next five year period, subject to its coverage extending statewide, implementation of agreed update procedures, and documentation of its relationship to the 1996 RFA vegetation mapping.)

Under the RFA, a comprehensive, adequate and representative forest-reserve system was established under a revised land-tenure system to ensure that each forest community is securely protected for conservation purposes. Other communities on public land will be protected wherever prudent and feasible. In addition, the un-reserved native forests are to be managed so as to maintain most of them as an extensive and permanent forest estate.

Changes in the extent of forest communities are mapped by aerial-photo interpretation and from ground surveys of harvesting and other forestry operations. Forestry Tasmania maps annual changes on public land, and Private Forests Tasmania maps information supplied by the large industrial companies and known records of farm-forestry activity on private land. This information was used for the mid-2001 maps.

The areas of forest communities and old growth as mapped in 1996 have been revised as a result of improved GIS processing. In 1996, tiny polygon slivers created in the GIS processing were not added into their community types in the RFA reports. These slivers are now fully accounted for. As a result, the reported area of some forest communities has

changed: some have increased slightly, a few have increased considerably and a few have decreased slightly.

The changes in the extent of communities reflected in this indicator are not readily comparable with data used by the Forest Practices Board for reporting on the Permanent Forest Estate (PFE). The PFE data gives the gross areas approved for future harvesting or clearing for agriculture based on multi-year Forest Practices Plans. Approved Forest Practices Plans may not be implemented yet or the land manager for a variety of reasons may decide not to implement a particular plan. Forest Practices Plans indicate the gross area of forest, all of which may not be harvested or cleared. Indicator 1.1.a maps the actual change in net area, but does not fully reflect agricultural clearing and small-scale activity on private property. Thus, the Indicator 1.1.a data underestimate, and the PFE data overestimate the extent of change.

Data for each forest community for the five-year period ending 30 June 2001 are presented in Appendix 1.1a and are summarised in Table 1.1.a below. To reflect the resolution of forest mapping, areas are generally quoted to the nearest 100 hectares; areas smaller than 50 hectares are quoted to the nearest 10 hectares.

The main trends evident from the data are:

- There has been a net increase of 10,700 hectares, or 0.3%, in the total mapped area of forest in Tasmania. Expansion of the plantation estate has slightly outstripped recorded reductions in the area of native forest vegetation.
- The mapped extent of native forest communities has decreased by 38,100 hectares, or 1.2%, since 1996. Most of the loss was in the Wet eucalypt group of communities, which decreased by 25,000 hectares, or 2.9%.
- The native forest communities for which the biggest area decreases were recorded were Tall *E. obliqua*, tall *E. delegatensis*, *E. regnans*, silver wattle, Dry *E. obliqua*, *E. viminalis/ ovata/ amygdalina/ obliqua* damp sclerophyll, and tall rainforest.
- Eight native forest communities decreased in area by more than 2%: *E. regnans*, Wet *E. viminalis* on basalt, Silver wattle, *E. viminalis/ ovata/ amygdalina/ obliqua* damp sclerophyll, tall *E. obliqua*, Tall *E. delegatensis*, *A. melanoxylon* on rises, and Wet *E. brookeriana*.
- Plantation areas have expanded by 48,800 hectares, a 33.3% increase since 1996. Some of the new areas are on previously cleared agricultural land, and some on land newly cleared of native forest.
- Most of the expanded plantation area grows hardwood species (primarily *E. globulus* and *E. nitens*), which now constitute 60% of the total plantation area.

Table 1.1.a Extent of forest types by tenure groups as at 30 June 2001

RFA Forest Vegetation Community	Land Classification (Tenure)				TOTAL (ha)	Area change since RFA 1996 %
	Conservation Reserves (ha)	Other State forest (ha)	Other publicly managed land (ha)	Private freehold land (ha)		
	(a)	(b)				
Dry eucalypt forests	418,500	352,200	59,300	732,500	1,562,600	-0.5
Wet eucalypt forests	227,600	481,000	10,800	128,000	847,500	-2.9
Sub-alpine euc. forests	46,400	8,400	3,500	6,500	64,800	0.0
Non-eucalypt forests	411,900	220,600	6,800	55,000	694,300	-0.7
Plantations	1,200*	78,000	300	115,800	195,300	+33.3
TOTAL	1,105,700	1,140,300	80,700	1,037,700	3,364,500	+0.3

* Working plantations in Hollybank, Oldina and Dalgarth Forest Reserves used for educational and recreational purposes.

(a) NPW Act, Crown Lands Act, and Forest Reserves

(b) Includes Multiple-use forest

1.1.b AREA OF FOREST TYPES BY GROWTH STAGE DISTRIBUTION BY TENURE

The spread of age classes across forest communities is a measure of ecosystem diversity, since the structure and species composition of forest change as it grows older. Sustainable forest management requires the maintenance of a full range of age-classes across the forest estate.

This indicator is intended to reflect the general distribution of the growth stages of the different forest communities across broad land-management categories.

Mature forest as reported in this indicator is a different concept from what has been defined as old growth forest under the RFA. Old growth forest is defined as having been subject to negligible unnatural disturbance and being in the late mature to over-mature growth phases. The specific reservation status of old growth forest for conservation purposes is reported under Indicator 1.1.d.

The age of a natural forest can be difficult to define, because some of the trees may be older than others, understorey species may have colonised well after canopy trees, and precise tree ages are expensive to measure. However, for the purposes of broad-scale categorisation, the crown characteristics (or “growth stage”) of trees are a reliable surrogate for age-class, particularly for eucalypt species. Growth-stage cannot readily be mapped for most non-eucalypt communities. In Tasmania, forest-type mapping by photo interpretation is routinely used to classify growth stages in eucalypt forests: young regeneration, regrowth (typically aged 20 - 100 years), and mature (including over-mature or senescent). The whole State is progressively remapped on a rolling 20-year cycle.

As outlined under Indicator 1.1.a, changes in the forest’s extent are also updated from ground surveys of harvesting and other forestry operations. Forestry Tasmania maps annual changes on public land, and Private Forests Tasmania maps information supplied by the large industrial companies and by records of farm-forestry activity on private land. This updated information on forest types has been used to subdivide the 1996 RFA forest-community mapping by growth stage.

As also outlined under Indicator 1.1.a, the areas of forest communities as mapped in 1996 have been revised as a result of improved GIS processing.

Because the growth-stage mapping and the forest-community mapping are compiled independently, reflecting different definitions and attributes of forests, there are some areas mapped as eucalypt communities for which no growth-stage could be determined from the structural mapping.

The results for the five-year period ending 30 June 2001 are presented in Appendix 1.1.b and summarised in Table 1.1.b below. To reflect the resolution of forest mapping, areas are generally quoted to the nearest 100 hectares; areas smaller than 50 hectares are quoted to the nearest 10 hectares.

The most notable matters evident from the data are:

- The practical limitations of growth-stage mapping have made the data difficult to interpret. Because there was a high degree of spatial congruence in 1996 between the

RFA vegetation mapping and PI-type mapping, few areas were then classified as Unknown; greater discrepancies in recent mapping has meant a larger extent of Unknown growth-stage in 2001. Analysis of the non-eucalypt communities is not possible since they are not readily growth-staged.

- Of the forest for which growth-stage mapping is available, the majority (74%) is Mature.
- Conservation reserve tenures include 20% of the forest mapped as Regrowth and 32% of the forest mapped as Mature.
- The areas mapped as Regeneration are strongly linked to commercially managed communities. However, areas of Regeneration are generally only identifiable in State forest, where harvest records can be used to determine stand age. Such data are not available for operations on private land and other tenures.
- In dry eucalypt forests of known growth-stage, the proportion of Regeneration and Regrowth is relatively low, averaging 15% across all tenures. However, the proportion of younger forests on State forest, 46%, is nearly double the proportion of other tenures.
- In the wet eucalypt forests of known growth-stage, the proportion mapped as younger growth-stages (ie. Regeneration and Regrowth) is 39% which is significantly higher than in the dry eucalypt forests. This is due in part to the ecology of wet eucalypt communities, which tend to grow in single-age stands in which regrowth is readily identifiable. Dry eucalypt forests usually grow in multi-age stands, so that even forests mapped as Mature growth-stage usually contain a proportion of younger trees.
- Within the wet eucalypt forests, the highest proportions of younger growth-stages are on private land (54%) and State forest (46%). On conservation reserve tenures, only 17% of these communities are identifiable as younger forests.

Table 1.1.b Area of native forest types by growth stage and tenure groups as at 30 June 2001

RFA Forest Vegetation Community (ha)	Growth Stage (ha)	Land Classification (Tenure)				TOTAL (ha)
		Conservation reserves (ha) (a)	Other State forest (ha) (b)	Other publicly managed land (ha)	Private freehold land (ha)	
Dry eucalypt forests	Regeneration	500	35,000	600	500	36,600
	Regrowth	55,100	58,000	7,100	118,200	238,500
	Mature	355,900	250,300	49,400	569,600	1,225,200
	Unknown	7,000	8,900	2,200	44,200	62,300
Wet eucalypt forests	Regeneration	200	49,700	400	1,000	51,300
	Regrowth	38,200	167,700	3,500	64,200	273,600
	Mature	188,500	255,900	6,600	55,100	506,100
	Unknown	700	7,800	400	7,600	16,500
Sub-alpine eucalypt forests	Regeneration	0	200	0	0	200
	Regrowth	9,200	2,100	500	800	12,600
	Mature	34,100	5,400	2,500	4,600	46,700
	Unknown	3,200	600	400	1,000	5,300
Non-eucalypt forests (c)	Unknown	411,900	220,600	6,800	55,000	694,300
TOTAL	Regeneration	800	84,900	1,000	1,500	88,100
	Regrowth	102,500	227,800	11,100	183,200	524,700
	Mature	578,400	511,700	58,500	629,400	1,778,000
	Unknown	422,800	237,800	9,900	107,900	778,400
	TOTAL	1,104,500	1,062,300	80,500	922,000	3,169,200

(a) NPW Act, Crown Lands Act, and Forest Reserves

(b) multiple-use forest

(c) Non-eucalypt communities cannot readily be mapped by growth stage

1.1.c EXTENT OF AREA BY FOREST TYPE AND RESERVATION STATUS

The extent of reservation of different forest vegetation communities is a measure of the degree of protection of biological diversity at the species and ecosystem levels.

Under the RFA, comprehensive, adequate and representative (CAR) reserves were established under a revised land-tenure system to ensure that each forest community is securely protected for conservation purposes. Other communities on public land will be protected wherever prudent and feasible. In addition, the un-reserved native forests are to be managed so as to maintain most of them as an extensive and permanent forest estate.

The RFA recognised three levels of reservation: *Formal reserves*, which are publicly managed land-tenures that cannot be revoked without Parliamentary approval; of these, *dedicated formal reserves* exclude mining. *Informal reserves* on public land are protected through administrative instruments by public authorities. *Private CAR reserves* are areas of private land whose owners have either agreed to their land being reserved for conservation purposes by proclamation or have voluntarily entered into an agreement with the Minister to manage the land for conservation purposes.

During the Tasmanian RFA process in 1996, the State's native forest was classified and mapped into 50 communities as a basis for assessing their extent and conservation status and for monitoring change. For this assessment, the original 1996 RFA forest maps are compared with mid-2001 maps. (It is proposed that the new higher resolution TASVEG mapping be used as the basis for comparison over the next five year period, subject to its coverage extending statewide, implementation of agreed update procedures, and documentation of its relationship to the 1996 RFA vegetation mapping.)

Changes in forest extent are mapped by aerial-photo interpretation and from ground surveys of harvesting and other forestry operations. Forestry Tasmania maps annual changes on public land, and Private Forests Tasmania maps information supplied by the large industrial companies and known farm-forestry activity on private land. This information was used to update the 1996 RFA forest community mapping.

As outlined under Indicator 1.1.a, the areas of forest communities as mapped in 1996 have also been revised as a result of improved GIS processing, generally resulting in a slight increase in their reported areas at 1996.

The forest extent changes reflected in this indicator are not readily comparable with data used by the Forest Practices Board for reporting on the Permanent Forest Estate (PFE). The PFE data reports on gross areas approved for future harvesting or clearing for agriculture, based on multi-year Forest Practices Plans. Indicator 1.1a maps actual change in net area, but does not fully reflect agricultural clearing and small-scale activity on private property. Thus, the Indicator 1.1a data underestimates the extent of change, whilst the PFE data overestimates change.

The extent of formal and informal reserves and private protected areas is recorded as at 30 June 2001, and is based on Department of Primary Industries, Water and Environment land tenure-mapping, Forestry Tasmania Management Decision Classification zonation, and Department of Primary Industries, Water and Environment mapping of private protected areas.

The results for the five-year period ending 30 June 2001 are presented in Appendix 1.1c and summarised in Tables 1.1.c(i) and 1.1.c(ii) below. To reflect the resolution of forest mapping, areas are generally quoted to the nearest 100 hectares; areas smaller than 50 hectares are quoted to the nearest 10 hectares. Appendix 1.1.c also reports the area of communities in each IBRA4 biogeographic region (Thackway and Cresswell, 1995) to reflect their spatial distribution in Tasmania.

The main trends evident from the data are:

- Implementation of the comprehensive, adequate and representative (CAR) reservation framework agreed under the RFA has resulted in an extended system of public and private CAR reserves, totalling over 2.7 million hectares (*Report on the Implementation of the Tasmanian Regional Forest Agreement 1997-2002, Attachment 6*). Within this framework, 1,271,200 hectares of forested land, or 40.1%, of Tasmania's native forests, are now protected, up from the 1996 extent of 977,900 hectares or 30.5%. This represents an increase of 293,300 hectares, or 30.0% of the 1996 area.
- As well as the major changes in public land tenure, progress has been made in implementing private sanctuaries and covenants on private freehold land. Under these mechanisms, 2,800 hectares of forest have been protected.
- Most protected forests are on public land: 86% is in Formal Reserves, of which 49% is unavailable for mining and 37% is subject to the *Mineral Resources Development Act 1995*. Informal reserves and private CAR reserves account for the remaining 14% of reserved native forests.
- More than 25% of the current areas of 34 native forest communities, including all sub-alpine eucalypt and non-eucalypt communities, are now in reserves.
- Seven communities have less than 15% of their current extent in reserves: six are dry eucalypt communities and one a wet eucalypt community. For all these communities, the majority of the remaining extent is on unreserved private land.
- Of the 50 native forest communities, 34 have at least 15% of their estimated pre-1750 extent protected in reserves. All sub-alpine eucalypt, most non-eucalypt, and wet eucalypt communities exceed this level of reservation.
- 10 communities, mainly from the dry eucalypt group, have less than 7.5% of their estimated pre-1750 extent protected in reserves. For most of these communities, the remaining extent is on chiefly unreserved private land.

Reference: Thackway, R. and Cresswell, I.D. (Eds) 1995 *An Interim Biogeographic Regionalisation of Australia for Australia: a framework for establishing the national system of reserves*. Version 4.0 Australian Nature Conservation Agency: Canberra

Table 1.1.c (i) Area of forest type by reservation status as at 30 June 2001
(All areas in hectares)

Reservation Status	RFA Forest Vegetation Community				TOTAL (ha)
	Dry eucalypt forests (ha)	Wet eucalypt forests (ha)	Sub-alpine eucalypt forests (ha)	Non-eucalypt forests (ha)	
Public Land					
Dedicated formal reserve	216,300	143,900	30,400	238,700	629,300
Other formal reserve (<i>Min*</i>)	196,200	83,100	16,200	172,600	468,100
Informal reserve	76,100	59,500	4,400	31,100	171,000
Total public reserves	488,600	286,500	51,000	442,400	1,268,400
Other public land	341,500	433,000	7,300	197,000	978,800
Private Land					
Private CAR reserve	2,300	200	50	200	2,800
Other private land	730,200	127,700	6,500	54,800	919,200
TOTAL	1,562,800	847,500	64,800	694,300	3,169,200

* Subject to the *Mineral Resources Development Act 1995*.

Table 1.1.c (ii) Change in reservation status of forest types
(All area in hectares)

Reservation Status	RFA Forest Vegetation Community				TOTAL (ha)
	Dry eucalypt forests (ha)	Wet eucalypt forests (ha)	Sub-alpine eucalypt forests (ha)	Non-eucalypt forests (ha)	
Extent of forest					
Total area (ha)	1,562,600	847,500	64,800	694,300	3,169,200
Area in formal reserves (ha)	412,500	227,000	46,600	411,300	1,097,400
Area in informal reserves and private CAR reserves (ha)	78,400	59,700	4,400	31,300	173,800
Existing forest now in reserves	31.4%	33.8%	78.7%	63.7%	40.1%
Change in percentage points since RFA (1996)	+9.9	+7.6	+7.4	+11.5	+9.6
Pre-1750 forest now in reserves					
	18.3%	22.7%	73.1%	54.8%	26.4%
Change in percentage points since RFA (1996)	+5.7	+4.6	+6.9	+9.6	+6.1

1.1.d AREA OF OLD GROWTH BY FOREST TYPE BY RESERVATION STATUS

The spread of age classes across forest communities is a measure of ecosystem diversity, since the age structure and species composition of a forest change as it grows older. Sustainable forest management requires the maintenance of a full range of age-classes across the forest estate.

The concept of “old growth” is used as a measure of structural diversity; it is defined as ecologically mature forest where the effects of disturbances are now negligible. During the RFA process in 1996, old growth was mapped by classifying forests according to the proportion of senescent crowns in each stand and their history of disturbance by fire, harvesting and grazing.

To determine the area of old growth forest as at 30 June 2001, the 1996 RFA old growth mapping was updated by reducing the mapped extent of old growth stands to reflect recent known harvesting and clearing operations. Forestry Tasmania maps annual changes on public land, and Private Forests Tasmania maps information supplied by the large industrial companies and records of farm-forestry activity on private land. No new mapping of crown senescence or fire disturbance was undertaken; changes in these factors since 1996 were not believed to be as great as the effects of harvesting and land clearing.

As outlined under Indicator 1.1a, the areas of forest communities and old growth as mapped in 1996 have also been revised as a result of improved GIS processing, generally resulting in a slight increase in the areas reported in 1996.

The RFA recognised four levels of reservation: *Formal reserves*, which are publicly managed land-tenures that cannot be revoked without Parliamentary approval; of these, *dedicated formal reserves* exclude mining. *Informal reserves* on public land are protected through administrative instruments by public authorities. *Private CAR reserves* are areas of private land whose owners have either agreed to their land being reserved for conservation purposes by proclamation or have voluntarily entered into an agreement with the Minister to manage the land for conservation purposes.

The extent of formal and informal reserves and private protected areas is recorded as at 30 June 2001. It is based on Department of Primary Industries, Water and Environment land-tenure mapping, Forestry Tasmania Management Decision Classification zonation, and Department of Primary Industries, Water and Environment mapping of private protected areas.

The results for the five-year period ending 30 June 2001 are presented in Appendix 1.1d and are summarised in Tables 1.1.d (i) and 1.1.d (ii) below. To reflect the resolution of forest mapping, areas are generally quoted to the nearest 100 hectares; areas smaller than 50 hectares are quoted to the nearest 10 hectares.

The main trends from the data are:

- Implementation of the comprehensive, adequate and representative (CAR) reservation framework agreed under the RFA has resulted in an extended system of public and private CAR reserves totalling over 2.7 million hectares (*Report on the Implementation of the Tasmanian Regional Forest Agreement 1997-2002, Attachment 6*). Within this

framework, 850,800 hectares of old growth, or 69% of Tasmania's old growth native forests, are now in reserves, up from the 1996 extent of 681,900 hectares or 55%. This represents an increase of 168,900 hectares, or 25% of the 1996 area..

- Of the 42 forest communities in which old growth was mapped for the RFA, 24 have at least 60% of their extent of old growth reserved. With only a few exceptions, wet eucalypt, sub-alpine eucalypt, and non-eucalypt communities have high levels of old growth reservation.
- Seven forest communities have less than 30% of their extent of old growth in reserves; apart from one wet eucalypt community, these are Dry Eucalypt forest communities. For all seven communities, most of the remaining old growth is on unreserved private property.
- As well as the major changes in public-land tenure, progress has been made in implementing private sanctuaries and covenants on private freehold land. At 30 June 2001, 500 hectares of old growth forest had been protected under these mechanisms.
- Of the old growth forest in Tasmania which was mapped in 1996, 7,100 hectares, or 0.6%, has been harvested over the 5 years to June 2001. Most of the loss was in the wet eucalypt group of communities, which decreased by 4,800 hectares, or 1.9%.
- The native forest old growth communities in which the biggest area decreases were recorded were tall *E. delegatensis* and tall *E. obliqua*. Smaller losses were recorded in *E. regnans*; Callidendrous and thamnic rainforest; dry *E. delegatensis*, *E. pulchella/globulus/viminalis* grassy shrubby forest; and dry *E. obliqua* forest.
- Old growth in four native forest communities decreased in area by more than 1%: *E. brookeriana* wet forest; *E. regnans*; tall *E. obliqua*; and tall *E. delegatensis* forest.

Table 1.1.d (i) Extent of old growth by forest type and reserve type as at 30 June 2001
(All areas in hectares)

Reservation Status	RFA Forest Vegetation Community				TOTAL (ha)
	Dry eucalypt forests (ha)	Wet eucalypt forests (ha)	Sub-alpine eucalypt forests (ha)	Non-eucalypt forests (ha)	
Public Land					
Dedicated formal reserve	132,500	98,700	22,600	229,600	483,300
Other formal reserve (<i>Min*</i>)	94,300	39,900	10,300	146,400	290,800
Informal reserve	34,400	19,600	2,100	20,100	76,300
Total public reserves	261,200	158,200	35,000	396,100	850,400
Other public land	64,000	80,700	3,200	125,500	273,400
Private Land					
Private CAR reserves	300	100	10	100	500
Other private land	94,000	7,900	1,900	11,000	114,900
TOTAL	419,400	246,900	40,000	532,800	1,239,100
Area change since RFA (1996)	- 0.4%	- 1.9%	0.0%	- 0.1%	- 0.6%

* Subject to the *Mineral Resources Development Act 1995*.

Table 1.1.d (ii) Change in reservation status of old growth by forest types
(All areas in hectares)

Reservation Status	RFA Forest Vegetation Community				TOTAL (ha)
	Dry eucalypt forests (ha)	Wet eucalypt forests (ha)	Sub-alpine eucalypt forests (ha)	Non-eucalypt forests (ha)	
Extent of old growth forest					
Total area (ha)	419,400	246,900	40,000	532,800	1,239,100
Area in formal reserves (ha)	226,700	138,600	32,800	376,000	774,100
Area in informal reserves and private CAR reserves (ha)	34,600	19,700	2,100	20,200	76,700
Proportion of existing old growth forest now in reserves	62.3%	64.1%	87.3%	74.4%	68.7%
Change in percentage points since RFA (1996)	+18.2	+12.4	+6.9	+11.8	+14.0

1.2 Species Diversity

This sub-criterion tracks the presence, status and population levels of forest-dwelling species by reporting on representative species from a range of habitats. It focuses on flora and vertebrate fauna. The only invertebrate fauna considered is species listed as rare, vulnerable, endangered or extinct.

1.2.a A LIST OF FOREST-DWELLING SPECIES

This indicator will, over time, show the presence or absence of forest-dwelling species in Tasmanian forests. Vertebrate species and higher plants were chosen as the indicator species because the lack of information on invertebrates and lower plants makes their current use as indicator species problematic and of no practical use for adaptive management.

The list of forest dwelling vertebrates (Appendix 1.2.a – Table 1) is classified by class (fish, amphibian, reptile, etc) gives the scientific name of each species, its common name, and in the case of ‘sensitive’ species whether a recovery plan is being implemented and the conservation status of each species (‘widespread’, ‘rare’, ‘endangered’ or ‘presumed extinct’).

During the period 1995/96 to 2000/01, no species on this list became extinct and no new species were identified. However four species presumed extinct were rediscovered during the period (see Indicator 1.2.b).

This list has been derived from GTSPOT, a web-based atlas for flora and fauna records maintained by the Department of Primary Industries, Water and Environment (DPIWE). GTSPOT also records the conservation status of species. New location records are added to GTSPOT with regular updates from incidental observations by DPIWE staff and others, and with data provided by the Forest Practices Board and Forestry Tasmania.

Table 2 of Appendix 1.2.a lists forest-dwelling plant species. There are 908 higher-plant taxa (including subspecies and varieties) that are considered to be forest-dwelling and are indigenous to Tasmania. This is 51 per cent of the Tasmanian vascular flora. These species comprise:

Dicotyledons	579 taxa
Monocotyledons	231 taxa
Pteridophytes	88 taxa
Gymnosperms	10 taxa
Total Forest-dwelling Species	908 taxa

Since 1995-96, an additional 129 higher-plant species listed under the *Threatened Species Protection Act 1995* have been identified as forest dwelling species on the basis of new information.. These species are not currently on the RFA Priority Species List but meet the criteria for inclusion (see clause 71- *Report on the Implementation of the Tasmanian Regional Forest Agreement 1997-2002*).

Taxonomic revisions of a number of taxa have resulted in additions to, and deletions from, the list of forest-dwelling species. *Epacris graniticola* (a species listed in RFA Attachment 2) was a new name, which was never validated, and the species continues to be recognized as *Epacris exserta*. Three new species were described: *Caladenia saggicola*, *Caladenia sylvicola* and *Caladenia tonellii*. Two species previously known only from mainland Australia were recorded in Tasmania: *Mirbelia oxylobioides* and *Daviesia sejugata*. *Callitris* aff. *oblonga* has been identified from studies as being distinct from the mainland species and is now known as *Callitris oblonga oblonga*. *Polyscias* aff. *sambucifolius* requires further work to confirm its taxonomic status.

1.2.b THE STATUS OF FOREST-DWELLING SPECIES AT RISK OF NOT MAINTAINING VIABLE BREEDING POPULATIONS, AS DETERMINED BY LEGISLATION OR SCIENTIFIC ASSESSMENT

This Indicator is a measure of management effectiveness. Changes in the status of threatened or priority species are clear indications of whether protection and management measures are improving, maintaining or worsening the conservation status of given species.

The list of RFA priority species (Appendix 1.2b) includes the status of individual species on the list and recommended revised listings with reasons for changes. The list differs from the 1997 list in part because of new information and in part as a result of the Scientific Advisory Committee's review in 2000 of the Tasmanian *Threatened Species Protection Act 1995* (TSPA). It includes species on the Schedules of the TSPA and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It also includes species whose status has changed since the signing of the RFA, and shows three species (two plants and one animal) that have been de-listed since then.

An additional 132 species of higher flora and 21 of vertebrate fauna listed under the TSPA have been identified since the RFA was signed as being forest-dwelling species. They meet the requirements for inclusion as RFA priority species.

Three forest-dwelling flora species and one fauna species considered to be extinct in Tasmania have been rediscovered in the wild in the past five years. These are *Argentipallium spiceri*, *Ozothamnus selaginoides*, *Prasophyllum robustum* and *Austrochloritis victoriae* (though there is now doubt as to the taxonomic status of *O. selaginoides*).

Changes to the status under the TSPA of forest-dwelling Tasmanian priority species of fauna and flora are detailed in Table 1.2.b and can be summarised as follows:

	<i>Flora</i>	<i>Fauna</i>
Number of species with changed status	26	10
Number of species which have moved to a higher category of risk*	20	7
Number of species which have moved to a lower category of risk.	6	3
Number of species added to the list	16	10
of which orchids comprise	14	-
Number of species de-listed	2	1
Number of species rediscovered from extinct status	3	1

* Of the species which have moved to a higher category of risk, 10 are orchids whose change in status is due to a combination of taxonomic changes and collation and reinterpretation of old records. The changed status of the majority of the non-orchid species is due to decline in numbers or increased risk from factors such as loss of habitat, *Phytophthora*, mining, shooting, effect of introduced species, prolonged drought and inappropriate fire regimes.

Table 1.2.b Forest Dwelling Flora and Fauna which has changed its status under the *Threatened Species Protection Act 1995* (Tas.) since the signing of the RFA

Flora Species	TSPA status 1995	TSPA status 2001
<i>Argentipallium spiceri</i>	extinct	endangered
<i>Arthrochilus huntianus</i> ssp. <i>huntianus</i>	rare	endangered
<i>Arthrochilus huntianus</i> ssp. <i>nothofagicola</i>	not listed	endangered
<i>Austrofestuca hookeriana</i>	rare	[delisted]
<i>Caladenia anthracina</i>	not listed	endangered
<i>Caladenia caudata</i>	not listed	rare
<i>Caladenia congesta</i>	rare	endangered
<i>Caladenia lindleyana</i>	rare	endangered
<i>Caladenia pallida</i>	vulnerable	endangered
<i>Caladenia sylvicola</i>	rare	endangered
<i>Caladenia tonellii</i>	not listed	endangered
<i>Calocephalus citreus</i>	endangered	rare
<i>Calochilus campestris</i>	not listed	endangered
<i>Chiloglottis trapeziformis</i>	rare	endangered
<i>Conospermum hookeri</i>	rare	vulnerable
<i>Cryptostylis leptochila</i>	rare	endangered
<i>Cyrtostylis robusta</i>	not listed	rare
<i>Diuris palustris</i>	rare	endangered
<i>Epacris acuminata</i>	vulnerable	rare
<i>Epacris apsleyensis</i>	vulnerable	endangered
<i>Epacris glabella</i>	vulnerable	endangered
<i>Epacris limbata</i>	vulnerable	endangered
<i>Eryngium ovium</i>	endangered	vulnerable
<i>Euphrasia fragosa</i>	rare	endangered
<i>Euphrasia semipicta</i>	vulnerable	endangered
<i>Gahnia sieberiana</i>	rare	[delisted]
<i>Glycine microphylla</i>	rare	vulnerable
<i>Leucopogon virgatus</i> var. <i>brevifolius</i>	not listed	rare
<i>Micranthemum serpentinum</i>	rare	vulnerable
<i>Mirbelia oxylobioides</i>	not listed	rare
<i>Ozothamnus selaginoides</i> [ident. in doubt]	extinct	endangered
<i>Pimelea axiflora</i> ssp. <i>axiflora</i>	rare	endangered
<i>Prasophyllum apoxychilum</i>	not listed	endangered
<i>Prasophyllum correctum</i>	not listed	endangered
<i>Prasophyllum milfordense</i>	not listed	endangered
<i>Prasophyllum montanum</i>	rare	endangered
<i>Prasophyllum perangustum</i>	not listed	endangered
<i>Prasophyllum robustum</i>	extinct	endangered
<i>Prasophyllum stellatum</i>	not listed	endangered
<i>Pterostylis atriola</i>	not listed	endangered
<i>Pterostylis commutata</i>	rare	endangered
<i>Pterostylis cynocephala</i>	not listed	endangered
<i>Pterostylis tunstallii</i>	not listed	endangered
<i>Spyridium eriocephalum</i>	rare	endangered
Fauna Species	TSPA 1995	TSPA 2001
<i>Accipiter novaehollandiae</i>	rare	endangered
<i>Anoglypta launcestonensis</i>	vulnerable	[delisted]
<i>Aquila audax fleayi</i>	vulnerable	endangered
<i>Austrochloritis victoriae</i>	extinct	rare
Charopidae "Skemps"	not listed	rare
<i>Engaeus spinicaudatus</i>	vulnerable	endangered
<i>Galaxias auratus</i>	not listed	rare
<i>Galaxias parvus</i>	not listed	rare
<i>Galaxias tanycephalus</i>	vulnerable	endangered
<i>Goedtrechus mendumae</i>	vulnerable	rare
<i>Helicarion rubicundus</i>	not listed	rare
<i>Hoplogonus bornemisszai</i>	not listed	endangered
<i>Hoplogonus vanderschoori</i>	not listed	vulnerable
<i>Lathamus discolor</i>	vulnerable	endangered
<i>Miselaoma weldi</i>	vulnerable	endangered
<i>Paragalaxias dissimilis</i>	not listed	vulnerable
<i>Paragalaxias eleotroides</i>	not listed	vulnerable
<i>Paragalaxias mesotes</i>	not listed	endangered
<i>Pseudomys novaehollandiae</i>	rare	endangered
<i>Tasmanotrechus cockerilli</i>	vulnerable	rare
<i>Tasmaphena lamproides</i>	not listed	rare

The changes in status of species under the State legislation is based on information provided to the Threatened Species Scientific Advisory Committee (SAC), through nominations from the

community or through the SAC's review in 2000 (changes gazetted 27 June 2001). The SAC's criteria are based on International Union for the Conservation of Nature criteria approved by the Director of National Parks and Wildlife.

There were seventeen forest dwelling species, of which eleven are orchids, which were reclassified from Endangered to Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. They are:

Argentipallium spiceri (Spicer's Everlasting)
Arthrochilus huntianus ssp *nothofagicola* (Myrtle Elbow Orchid)
Caladenia anthracina (Black-tipped Spider-orchid)
Caladenia lindleyana (Lindley's Spider-orchid)
Caladenia pallida (Rosy Spider-orchid)
Caladenia saggicola (Sagg Spider-orchid)
Caladenia sylvicola (Forest Fingers)
Caladenia tonellii (Robust Fingers)
Epacris barbata (Bearded Heath)
Euphrasia fragosa (Shy Eyebright)
Lomatis tasmanica (King's Lomatia)
Phebalium daviesii (Davies' Wax-flower)
Prasophyllum milfordense (Milford Leek-orchid)
Prasophyllum perangustum (Knocklofty Leek-orchid)
Prasophyllum stellatum (Ben Lomond Leek-orchid)
Pterostylus commutata (Midland Greenhood)
Tetratheca gunnii (Shy Susan)

The changes in status of species under the State legislation is based on information provided to the Threatened Species Scientific Advisory Committee (SAC), through nominations from the community or through the SAC's review in 2000 (changes gazetted 27 June 2001). The SAC's criteria are based on International Union for the Conservation of Nature criteria approved by the Director of National Parks and Wildlife.

1.2.c POPULATION LEVELS OF REPRESENTATIVE SPECIES FROM DIVERSE HABITATS MONITORED ACROSS THEIR RANGE

This indicator is a broad measure of the conservation status of a variety of representative species across habitats. This measure reflects elements of ecosystem and genetic diversity.

Population data are available on four species of bird, five species of fish, one species of butterfly and seven species of vascular plants (Refer to Table 1.2.c.1 of Research Indicator 1.2.c). Of these 17 species, 16 are censused each year, while one (the forty-spotted pardalote) is censused every five years. All of the forty-spotted pardalote colony locations have been digitised and a habitat model has been constructed. Habitat models have also been constructed for the swift parrot (grassy *Eucalyptus globulus* forest and shrubby *E. ovata* forest models) and *Hoplogonus simsoni* (simmons stag beetle).

Population indices have been calculated for possums, wallabies, carnivorous marsupials, eastern-barred bandicoot, grey goshawk, burrowing crayfish (two species), foliage insects and cave fauna (Refer Table 1.2.c.2 of Research Indicator 1.2.c). Spotlight surveys are made to estimate abundances of possums, wallabies and eastern-barred bandicoot across Tasmania. Roadkill surveys are used primarily to estimate eastern-barred bandicoot numbers. Burrowing crayfish, foliage insects and cave fauna are being surveyed to determine population trends in response to forest management at a regional and local level.

Surveys and research studies are being carried out by the Department of Primary Industries, Water and Environment; the Forest Practices Board; the University of Tasmania; and Forestry Tasmania. The results from population and ecological studies are used to continually update and refine management prescriptions that are applied under the Forest Practices Code.

For species about which relevant information has been collected, the following population trends for the period 1996-2001 are indicated:

- **Swift parrot:** The breeding-season surveys are inconclusive, as a standardised monitoring program has only been in place since the 1999-breeding season. Hence there are insufficient data to determine a population trend. Due to continued habitat loss across its range, particularly on private land, it is likely that the population is in decline. The key habitats in Tasmania for the swift parrot are grassy *Eucalyptus globulus* forest, shrubby *E. ovata* forest and nesting sites. The former two forest communities are prescription communities under the RFA and hence are protected, wherever practicable, on public land. Known nest sites are also protected under the RFA however further work is required to try and identify suitable nesting habitat to provide for an ongoing supply of hollows. Recent amendments to the *Forest Practices Act 1985* relating to forest clearing will further limit clearing of swift parrot habitat. Collisions with windows, chainlink fences and vehicles are putting pressure on the swift parrot population (Recovery program data).

Table 1.2.c.1 Breeding season survey data

Year		Population estimate	
Population censuses			
1987		2640	
1995		1840	
Standardised monitoring program			
Year	No. of sites surveyed	No. sites swift parrots recorded	Population estimate
1999	55	15 (27%)	2382 ± 770
2000	64	2 (3%)	Insufficient data
2001	73	19 (26%)	Data collected, not yet analysed

References

- Brereton, R. 1999. *Swift Parrot Recovery Plan: 1997-2000*. Department of Primary Industries, Water and Environment, Hobart.
- Brown, P.B. 1989. *The Swift Parrot Lathamus discolor (White): A report on its ecology, distribution and status, including management considerations*. Technical Report, Department of Lands, Parks and Wildlife.

- **Wedge-tailed eagle:** The Wedge-tailed Eagle Recovery Plan (1998-2003) gives a total population estimate of less than 1000 birds, based on 220 known nesting territories. These figures are a revision of a previously published estimate of 140 territories (Mooney and Holdsworth, 1991), representing a total population (using the same estimation formula) of 560. Mooney (pers. comm. 1998) assessed productivity to be 95 fledglings per year and interpreted this as a decrease. Mooney and Holdsworth (1991) provide productivity figures for 1989 with 69% of territories active and 53% successfully produced fledglings.

As a result of an extensive breeding survey in the 2000 season and an improving knowledge of territories, a further revision of the population has been possible. Currently (2001), there are 362 known territories, which represents a total population estimate of around 1500 (W.E. Brown unpubl. data). There has been a significant increase in the number of known nest sites since the RFA to over 500 nests (there can be more than one nest to a territory not all of which are active). This can largely be attributed to a greater level of public awareness and reporting of nests, many through the Private Forests Reserves Program, increased resources and attention being given by the forest industry to pre-logging surveys of potential nesting habitat. The apparent increase in nest numbers is hard to interpret with any certainty, as it may indicate an increase in population size or simply reflect an improvement in knowledge of nest distribution. Given the proportion of inactive nests and their distribution, the latter is the most plausible explanation. In the eastern and northern bioregions, particularly in areas of lower disturbance levels, active nests tend to be spaced regularly, at around 10km intervals. Disturbance and habitat modification, primarily through agricultural clearance and forestry operations, appears to cause a break down in this regular spacing and a decrease in the interval between nests, making the assignment of nests to territories difficult. Recent changes to the *Forest Practices Act* should ameliorate some further habitat modification. Monitoring of the effectiveness of current forest management practices is needed as a follow-up to Mooney and Holdsworth (1991).

Breeding survey results have also provided the opportunity to re-assess recruitment to the population. By extrapolation of the proportion of successful nests to the total known territories, (assuming randomness of disturbance levels), approximately 130 fledglings were produced statewide in the 2000 breeding season. When mortality is taken into account, (as

much as 50% in first-year birds), only about 20 of these will survive to breeding age. Key mortality factors include, starvation, disease, electrocution, shooting, poisoning both deliberate and secondary. The implications of these figures are that the population is likely to be marking time or, in some poor years, declining and thus susceptible to further inbreeding or stochastic events such as disease. This comment needs to be qualified by the observation that little is known of territories in the least disturbed habitats in the State's south and west but it is likely, due to low prey density and accessibility, that densities of nests are much lower in these regions. The contribution made to the population by these regions is therefore likely to be small and compensate little for disturbance effects in the more developed regions.

Table 1.2.c.2 shows proportions of nests in four categories of activity from recent years where the number of territories surveyed represents an adequate sample. From these data it is clear that there are fluctuations between years in the proportion of both successful and inactive nests. It is possible that these fluctuations may be explained by climatic phenomena such as rainfall and temperature, affecting prey levels and nesting success, or by human causes, such as nest disturbance from inappropriate land management practices, poorly implemented forestry operations and loss of breeding birds. In reality, 33 percent territory success is low and needs to be improved by better management of those factors, such as disturbance or unnatural mortality of adults, which affect nest success directly.

Management of nests influenced by forestry and agricultural activities is improving and there are progressively more resources being directed towards pre-logging searches and reserve management. However, there is room for further improvement and there exists a need to monitor the effectiveness of post-RFA Forest Practices Code prescriptions.

Table 1.2.c.2 Territory productivity data for wedge-tailed eagles in Tasmania
(Figures give the proportion of nests in each category, bracketed figures give actual numbers)

Nest Status	Breeding season					Total
	1989	1993	1994	1999	2000	
not active	0.28 (16)	0.53 (39)	0.70 (49)	0.52 (12)	0.53 (57)	157
reused		0.01 (1)	0.03 (2)	0.13 (3)	0.06 (7)	13
successful	0.53 (30)	0.45 (33)	0.27 (19)	0.35 (8)	0.33 (36)	96
unsuccessful	0.19 (11)				0.07 (8)	19
n=	57	73	70	23	108	274

Definitions of table terms.

Not active-none of the known nests in a territory was used for a breeding attempt.

Reused-At least one nest in the territory was lined or birds were observed incubating eggs or small chicks less than three weeks old but the outcome of the attempt is not known.

Successful- A chick older than three weeks of age was observed in a nest or a fledgling seen in the territory (usually with parents) or evidence (whitewash or prey remains and down) from the nest strongly indicates that fledging was successful.

Unsuccessful-An attempt at breeding in that territory failed.

References Mooney, N. & Holdsworth, M. (1991). The Effects of Disturbance on Nesting Wedge-tailed Eagles (*Aquila audax fleayi*) in Tasmania., Tasforests, Dec 1991, Vol. 3. Forestry Commission, Tasmania.

- **Forty-spotted pardalote:** In 1986 the forty-spotted pardalote population was estimated to be about 3,500 individuals (Brown 1986, 1989). A population survey was undertaken in 1994-97 and estimated the population to be 3840 a 10% increase (Bryant 1997, Table 1.2.c.3). This difference can be attributed to the discovery of an additional 13 colonies, on Flinders Island, Bruny Island, Tinderbox and Howden. (Bryant 1997, Table 1.2.c.3). It is most likely that, the population has remained relatively stable over this 10 year period, particularly the

larger robust colonies, but the loss of smaller colonies has been recorded. At least three colonies have been lost since 1986, one at Lime Bay, one at Coningham and one on Bruny Island.

Table 1.2.c.3 Population estimates of the forty-spotted pardalote throughout its range

Location	1986 Population (no. of colonies* - total area)	1994-97 Population (no. of colonies - total area)
Maria Island	1687 (23 - 2030 ha)	1687 (23 - 2030 ha)
Bruny Island	1716 (72 - 1628 ha)	1920 (76 - 1622 ha)
Tinderbox	75 (6 - 73 ha)	137 (12 - 108 ha)
Coningham	10 (2 - 8 ha)	0
Flinders Island	20 (1 - 20 ha)	70 (3 - 300 ha)
Mt Nelson	not recorded	6 (1 - 2 ha)
Howden	not recorded	20 (1 - 10 ha)
Lime Bay	12 (4 - 27 ha)	0
Total	3520 (108 - 3786 ha)	3840 (116 - 4072 ha)

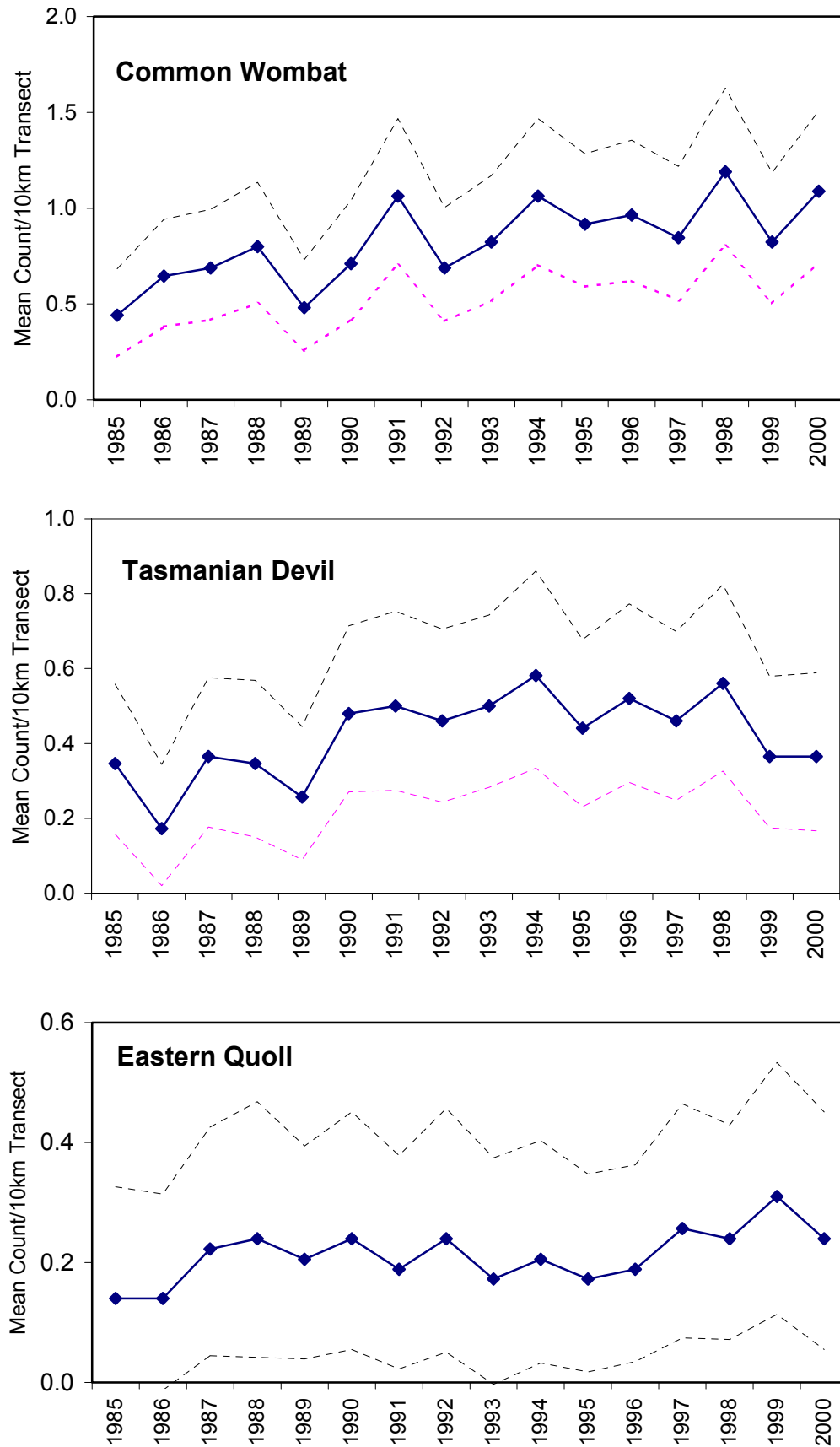
*colonies are defined as areas being physically separated.

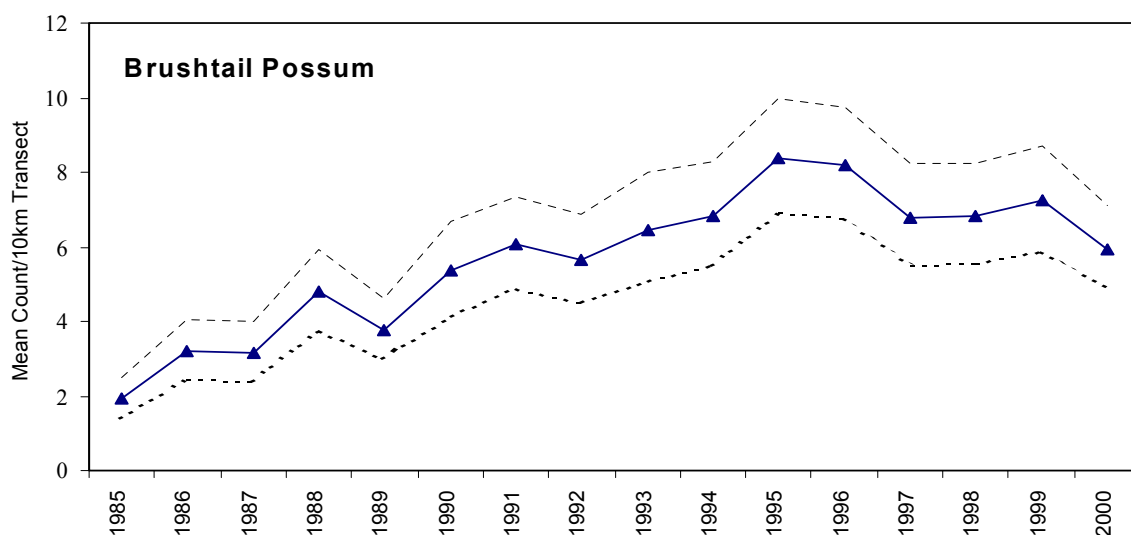
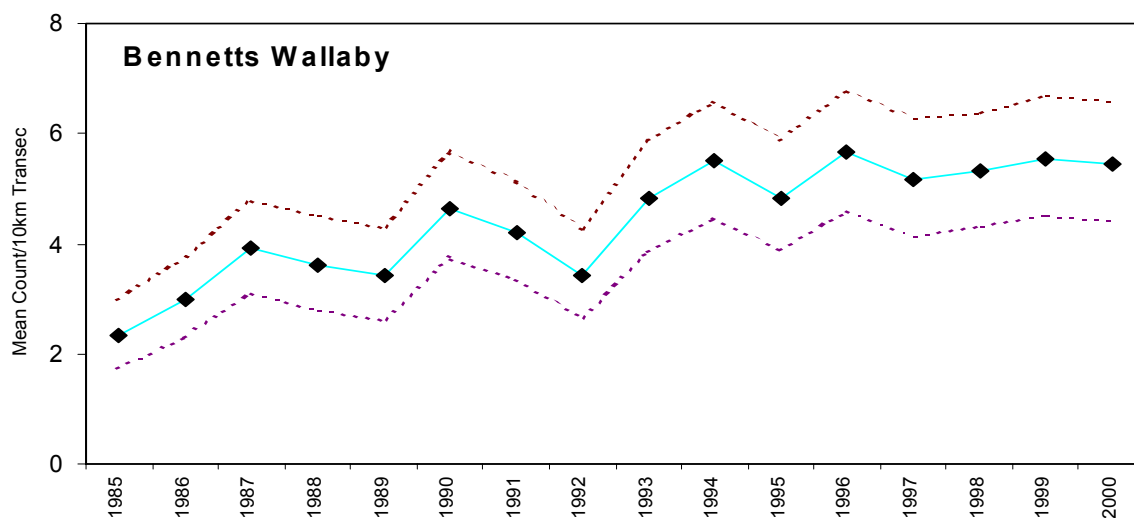
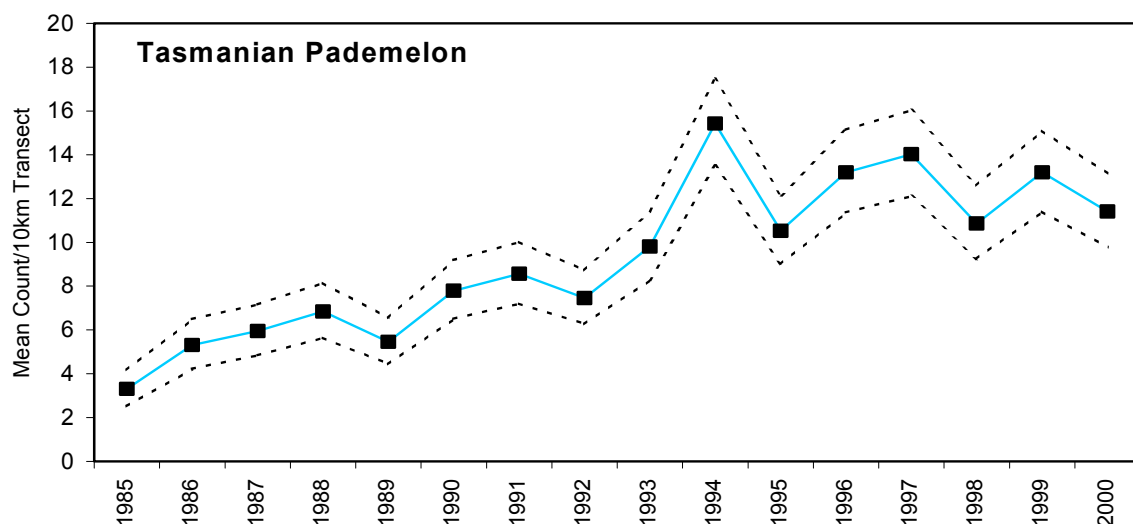
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- **Grey goshawk:** The status of the grey goshawk under the *Threatened Species Protection Act 1995* was changed from rare (Schedule 5) to endangered (Schedule 3.1) by the Scientific Advisory Committee in the five yearly review of the schedules of the Act undertaken in 2000. The change was necessary because there are less than 110 breeding pairs in one population and there is a continuing decline in the area of potential foraging and nesting habitat. Since 1996 approximately 11,500 hectares of forest types, including wet forest, mixed forest and blackwood swamp forest, potentially containing suitable habitat have been the subject of approved plans for clearing or harvesting in the Woolnorth bioregion (the stronghold of the species) (Forest Practices Board Annual Report: 2000-2001). Recent amendments to the *Forest Practices Act* will limit future clearing of grey goshawk habitat. The Forest Practices Board and the Department of Primary Industries, Water and Environment have undertaken a preliminary study of grey goshawks foraging and habitat requirements. This work has indicated that further more detailed study is required. Management prescriptions are currently aimed at protecting nesting habitat in riparian areas and further work is needed to assess the impact of the loss of foraging habitat.
- **Eastern-barred bandicoot:** the population decline recorded between 1992 and 1996 was thought to be due to drought. No reliable data collected since then to determine population trends.
- **Brush-tailed possum** – stable (Fig.1.2.c - annual spotlight survey data – 1996 - 2000).
- **Bennetts wallaby** – stable (Fig. 1.2.c - annual spotlight survey data – 1996 - 2000).
- **Tasmanian pademelon** – stable (Fig. 1.2.c - annual spotlight survey data – 1996 - 2000).
- **Wombat** – stable (Fig. 1.2.c - annual spotlight survey data – 1996 - 2000).
- **Tasmanian devil** – stable (Fig. 1.2.c - annual spotlight survey data – 1996 - 2000).
- **Eastern quoll** – stable (Fig. 1.2.c - annual spotlight survey data – 1996 - 2000).

Fig. 1.2.c Statewide Trends in the Abundance of the Tasmanian pademelon, Bennetts wallaby, Brushtail possum, common wombat, Tasmanian devil and eastern quoll for the period 1985-2000. Statewide trend lines include 95% confidence limits. (Greg Hocking, DPIWE, pers. com.).





CRITERION 2: MAINTENANCE OF PRODUCTIVE CAPACITY OF FOREST ECOSYSTEMS

This criterion measures the ongoing productive capacity of forests by monitoring the areas of native forest and plantations available for producing timber and other forest products. Wood products removed annually are checked against the calculated sustainable volume. The use of non-timber forest products is monitored. To ensure long-term sustainability is achievable, effective plantation and native forest regeneration establishment is measured.

2.1.a THE AREA OF FOREST LAND AND NET AREA OF FOREST LAND AVAILABLE FOR TIMBER PRODUCTION

This indicator is a measure of the capacity of forests to meet the market for wood products. Its purpose is to summarise changes in the area of land available for timber production over time. Maintaining an adequate land-base for timber production is an important component in meeting Tasmania's RFA commitment to sustain a minimum production level of 300 000 cubic metres per year of high quality eucalypt sawlog from State forest and yields of special species timbers including up to 10 000 cubic metres of blackwood. The RFA also obliges the State to review the sustainable level of high-quality sawlog production from public land every five years. The net area available for timber production is essential to that calculation.

Gross forest area is taken here to mean the area dominated by trees, usually having a single stem, a potential height exceeding two metres, and a crown density as low as five percent. Net area is the best available estimate of the area of forested land that is likely to be harvested now or at some time in the future.

The data sources used to determine the total areas of forested public land are the Department of Primary Industries, Water and Environment's land-tenure mapping and Forestry Tasmania's photo-interpreted forest-type mapping (PI-type).

The source of information on the area potentially available for timber production on public land is Forestry Tasmania's mapped provisional coupes. Provisional coupes define potential harvest operation boundaries by removing areas where logging is not allowed or is highly unlikely. In the first category are formal and informal reserves. In the second are areas restricted by, for example, Forest Practices Code provisions, inaccessibility, uneconomic forest, silvicultural limitations, and logging constraints.

The total area of private forest land is based on Statewide aerial photo-interpreted forest-typing (PI-type). The calculation is updated annually by Private Forests Tasmania with information provided by private-forest owners and also from new photographs of about five percent of the private forest estate.

The area of private-forest land potentially available for timber production is not mapped and therefore is not available. Because the discounting process used to adjust the private-forest resource availability estimates is not specifically area-based, it is not possible to provide a meaningful net area estimate. The continuing yield estimate for private forested land reflects changes in both the owner intent and environmental aspects, as well as excluding specific reserve areas where they exclude harvesting

activity. The current five yearly review of the private forest resource is expected to be completed by June 2002.

A noteworthy conclusion evident from Table 2.1.a below is that the area of forest land potentially available for timber production on public land has dropped by 2.9% (about 23 000 hectares) since 1996. This is largely due to the transfer of land from State forest to the reserve system as a result of the RFA.

It is also evident that the total area of forests on Other Public Land has increased as a result of the RFA.

The total area of private forest is marginally less than in 1966, possibly because of some land in the Wellington Park was reclassified. It is not possible to reach any conclusions on changes to the net area of private forest. When Private Forests Tasmania completes the resource review of private forests in 2002, the results can be compared to the previous resource estimates as a measure of the capacity of private forests to meet demands.

Table 2.1.a Gross area and net area available for timber production ('000 hectares) as at 30 June 2001.

Tenure	Gross Forest Area	Change in Gross Area since RFA (1996)	Net Forest Area	Change in Net Area since RFA (1996)
PUBLIC				
State Forest	1,303	-5.6%	779	-3.0%
Other Public	1,033	+8.7%	8*	0.0%
Total Public	2,336	+0.6%	787	-2.9%
Private	1,017	-1.8%	n/a	n/a
Total Public & Private	3,353	-0.4%	n/a	n/a

* Mainly Buckland Military Training Area

n/a – not available

2.1.c AREA, AGE CLASS, AND FUTURE YIELD OF PLANTATIONS OF NATIVE AND EXOTIC SPECIES

Indicator 2.1.c provides a statewide summary of the progress of plantation establishment of native and exotic species over time. An increase in the size and quality of the plantation estate is a significant element in the longer-term sustainability and growth of the forest industry in Tasmania. The RFA lists a number of plantation expansion actions under clauses 14, 15, and 16 of Attachment 12. The expected contribution of plantation to sustainable State supply of high quality sawlogs is addressed independently in the review required by Clause 98 of the RFA.

The indicator data are presented in three tables. Table 2.1.c.1 reports plantations in five-year age classes at an aggregated State level. Table 2.1.c.2 translates the data in Table 2.1.c.1 into a predicted future production schedule, based on the five year aggregate groupings. Two issues should be noted, the production schedule includes second-rotation management of existing plantations and new plantings and the data comes from a variety of independent suppliers, with a consequent range of product terminology and definition, particularly for eucalypt plantation.

The area information is a compilation of GIS data layers contributed by the large forest growers, and independently collected data for the smaller growers. Likewise the yield estimates have been supplied by large growers, with some independent modelling of the small growers' forests.

A range of species, particularly eucalypts, is planted in Tasmania. However, as the industry has developed, plantations are growing a narrower range of species: the softwood resource is dominated by *Pinus radiata*, and Eucalyptus nitens and E. globulus dominate the hardwood resource. E. globulus is the favoured pulping species, but it grows only in relatively frost free sites. E. nitens is the preferred alternative in exposed, frosty or high-altitude sites and is the more widely planted.

Table 2.1.c.1 Area of Tasmanian Plantations In Five-year Age Classes (hectares) as at June 2001

Age Classes	Softwood plantations (ha)	Hardwood plantations (ha)
unknown	5 100	11 200
Pre-1960	300	200
1960-64	200	100
1965-69	3 000	0
1970-74	7 300	300
1975-79	11 300	1 200
1980-84	12 300	4 700
1985-89	10 600	15 700
1990-94	11 200	28 500
1995-99	15 200	36 900
2000-04	3 900 ¹	18 800 ¹
Total	80 400	117 600

¹ Only two years planting data available for this period to date.

Table 2.1.c.2 Projected Yields for All Tasmanian Plantations in Five-year Production Classes ('000s cubic metres)

Species	Product	Merchantable volume by species and by average annual ¹ volume by five year period ('000's)					
		2000–04	2005–09	2010–14	2015–19	2020–24	2025–29
Hardwood Species	Pulp (all sources)	680	1290	3530 ³	4720 ³	4660 ³	4860 ³
	Solid Wood ²	20	20	140	270	1600 ³	1620 ³
	Total	700	1310	3670	4990	6260	6480
Softwood Species	Veneer and Sawlog	700	740	870	900	820	1050
	Pulp	560	600	510	440	440	500
	Total	1260	1370	1380	1340	1260	1550

¹ This is an annual average and volume will not necessarily be available in every year of the period

² Solid Wood is principally the non pulpwood product of the tree that may be valuable for a variety of uses, including rotary peeling or sawing. It is expected, that unless there is management intervention, such as pruning, this product will not be suitable for sawing. The varied nature of the intended regime mix between owners makes it difficult at this early stage of the plantation development to realistically dissect out products to a greater level of detail.

The impact of pruning regimes for sawlog and high quality veneer production, and the contribution to overall wood supply are dealt with in the context of private and public land resource review statements.

³ Figures include significant predicted output from future rotations, either on new ground or from replanting. The new establishment rate is predicated on the annual average planting rate for the two years shown in the Table 2.1.c.1 for period 2000-2004.

Table 2.1.c.3 indicates the change in area of plantation over the reporting period. In line with Australia wide trends, eucalypt plantations continue to increase at a rapid rate, while the softwood plantations increase more slowly.

Table 2.1.c.3 Plantation Areas 1996-2001 (hectares)

Reporting Year	Softwood Plantation	Eucalypt Plantation
1996 (June 30)	68 500	73 600
2001 (June 30)	80 400	117 600
Difference	11 900 (17%)	44 000 (60%)

The main trends evident are:

- the rapid expansion in eucalypt plantation establishment during 1996-2001 increasing in area by sixty percent or 44 000 hectares;
- an increase of 11 900 hectares in the area of softwood plantation;
- hardwood solid wood production from plantations will not make a significant contribution to available sawlog volume before 2020; and
- the available veneer and sawlog volume of plantation softwood is expected to remain at about current volumes for the term of the RFA.

2.1.d ANNUAL REMOVAL OF WOOD PRODUCTS COMPARED TO THE SUSTAINABLE VOLUME

This indicator summarises the outcomes of timber-harvesting activities for the first RFA five year review period. Strategies for managing the public and private timber-resources were either in place during the RFA or amended subsequently. These harvesting outcomes are compared with the sustainable cut levels to indicate progress of the strategies. Data for the period 1996-2001 are presented in Table 2.1.d. Clause 98 of the RFA commits the State to five yearly reviews of the sustainable supply of high quality sawlogs. This review is reported independently of this report.

Public land

The public land sustainable cut is based on meeting a minimum legislated high-quality eucalypt sawlog supply of 300 000 cubic metres per year. Pulpwood supply arises from meeting the sawlog commitments; its sustainability is by virtue of its relationship with the sawlog cut.

Over the period 1996-2001, the sustainable eucalypt sawlog cut for public land was based on two strategies. Up to 1997, volumes were based on the strategy developed for the Forests and Forest Industry Concil (FFIC) in 1991. This strategy was to meet the minimum legislated sawlog requirement of 300 000 cubic metres per year.

Since 1998, cut levels were based on the revised strategy developed to satisfy Clause 98 of the RFA (*Post RFA review of sustainable high quality Eucalypt sawlog supply from Tasmanian State Forest*, Forestry Tasmania, 1998). This strategy was to accelerate sawlog cut, up to 400 000 cubic metres per year to support the aims of the Forestry Growth Plan including new downstream processing and intensive forest management. This strategy, as well as new market opportunities and improved utilisation standards led to increases in pulpwood yields arising from sawlog operations.

On public land, the cut of native forest products has increased since 1997. Nonetheless, the total cut for the period was below the sustainable volumes identified in the strategies, as discussed above.

The cut of special species timbers (blackwood, celery top pine, myrtle, huon pine and sassafras) remains relatively constant at about 18 000 cubic metres per year. This volume compares with the targeted annual supply of special species timbers of 18 500 cubic metres (refer to Tasforests Vol.11 1999 p.28). The timber is obtained from selective harvesting of Special Timber Management Units, harvesting Blackwood swamps and salvaging scattered trees in eucalypt sawlog harvesting coupes.

Yields from eucalypt plantations have been a small proportion of the public land cut. Most of the yield was from thinnings from stands planted in the early 1990's and from clearfell of older, under-performing plantation sites that are being replanted to meet the goals of the Forestry Growth Plan.

Softwood plantation yields have remained relatively static over the period. Subtle strategy changes have increased the harvest of sawlogs, however the opportunity to further increase cuts in the medium term are limited by the age-class structure of the forests.

Private Land

The strategy for private-forest management is to at the least maintain, if not increase, the forested area. The total private-forest resource, in both spatial and product terms, will vary as forest is harvested and reforested or converted to agricultural uses, and as agricultural land is converted to plantations.

Because of these variations, most of the production from private land for the medium to long-term is likely in the future to be based on planted forests.

The last strategy review for private forests was prepared in 1996. Private owners are not bound by legislative requirements to meet either product or overall wood-supply levels. The 1996 report estimated a cut of about 2.7 million tonnes annually of product from native and planted eucalypt forest would be available over the 1996-2001 period. This level of cut has not been exceeded in any of the last five years.

On private land sustainable sawlog yield has not and can not be determined unless forest owners are prepared to commit their forest to this purpose long term. In many cases private forester owners would prefer to retain their options for future management including the timing of any harvesting.

As anticipated, harvesting of private-land eucalypt plantations (for pulpwood only) began in this period.

Softwood availability estimates in 1996 were around 600 000 cubic metres of total product per year. This level of cut is not being met. The data suggests this is more likely because the larger plantation owners have shifted their silviculture focus than that area or growth rates were overestimated.

Private Forests Tasmania derives annual private land data from ABARE. A revised private forest resource statement is expected to be available early in 2002.

Table 2.1.d Annual removal of wood products (x '1000's) on public and private land

Sales Category	Public Land						Private Land					
	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	Average	1996 -97	1997 -98	1998 -99	1999 -00	2000 -01	Average
Native Forest												
Eucalypt Sustainable sawlog volume (m ³)	300	300	400	400	400	360	N/A	N/A	N/A	N/A	N/A	N/A
Actual Cut												
Sawlogs & Veneer (m ³)	262	273	266	281	294	275	216	162	203	162	126	174
Pulpwood (t)	1550	1890	1624	2368	2762	2043	1188	1714	1553	2367	1912	1747
Special species timbers (m ³)	14	20	16	21	18	18	N/A	N/A	N/A	N/A	N/A	N/A
Eucalypt Plantation												
Sawlogs & Veneer (m ³)	0	0	0	0	0	0	0	0	0	0	0	0
Pulpwood (t)	0	0	0	7	25	16	0	0	209	210	238	219
Softwood Plantation												
Sawlogs & Veneer (m ³)	458	455	541	538	506	500	2	60	107	102	97	74
Pulpwood (t)	281	246	257	295	324	281	390	270	146	297	286	278

Notes: N/A means data is not available

The key points apparent from this data are:

- On public land the actual eucalypt sawlog cut is below the determined sustainable yield for each of the five years, 1996-2001.
- On private land there is no sustainable sawlog cut determined, however the annual all product cut is within the 1996 estimate for each of the five years, 1996-2001.

2.1.e ANNUAL REMOVAL OF NON-TIMBER PRODUCTS

This indicator provides information on the use and yield of non-timber forest products.

HONEY

The honey industry (principally leatherwood) derives most of its production from forests in north west, south-west and south-east Tasmania. A Community Forest Agreement was signed between Forestry Tasmania and the Tasmanian Beekeepers' Association in November 2000. The Agreement ensures the implementation of the protocol for leatherwood-honey management in State Forest.

Over the five years since 1996, the industry has been relatively stable, with little fluctuation in either forest use or demand. Most sites are in State forest. However, about 20 percent are within the World Heritage Area. A management plan provides for continued access. The numbers of sites and hives on public land are listed below:

Table 2.1.e.1 Apiary sites on Public Land

Year	No. of Sites	No. of Hives
1996/97	431	12607
1997/98	422	12311
1998/99	423	12332
1999/00	422	12317
2000/01	396	18438*

* A number of hives on public land other than State forest were not recorded before 2000/2001.

The numbers of apiary sites on public land show a slight decline over the five years. The production and value of honey and beeswax are reported under Indicator 6.1.b.

TREE FERNS

No data on the quantity of tree ferns harvested is given here because there are so few data it would be misleading. Certainly, they grossly underestimate the actual quantity harvested; for example, there are no records of treeferns obtained from private land or taken illegally from public tenures. From 2002 the harvesting of treeferns will require a Forest Practices Plan and all tree ferns taken (except for fewer than six for domestic use) will require a Forest Practices Board tag. The Forest Practices Board, in cooperation with the Department of Primary Industries, Water and Environment, has developed the "Treefern Management Plan for Harvesting, Transporting or Trading of *Dicksonia antarctica* in Tasmania". Tasmania will be in a much stronger position to provide data for tree ferns harvested annually at the next five year review.

SEED COLLECTION

Private collectors and Forestry Tasmania collect seed principally for their own use in forest regeneration and for propagating nursery stock. The quantities of seed collected (kilograms) are detailed in Table 2.1.e.2 below. The approximate proportions of the main species collected are:

Browntop stringybark-*E. obliqua* - 62%; Whitetop stringybark-*E. delegatensis* - 9%; Tasmanian blue gum-*E. globulus* - 8%; Radiata pine-*Pinus radiata* - 7%; Swamp Gum-*E. regnans* - 4%; and Shining gum- *E. nitens* -3%.

Table 2.1.e.2 Annual collection of native tree seed

Year	Capsules (Kg)	Raw seed (Kg)
1996-97	59 364	2012
1997-98	14 902	1370
1998-99	20 355	564
1999-00	23 572	1278
2000-01	20 920	1712

Data source: Neil McCormick, Tasmanian Seed Centre, Forestry Tasmania

GAME

The harvest of brushtail possums, as well as both wallaby species (Bennetts wallaby and the Tasmanian pademelon) is currently determined by the price being paid for the product (skins or meat). Tables 2.1.e.3 and 2.1.e.4 present data on the annual harvest of these species since 1996.

Table 2.1.e.3 Annual harvest and culling of Brushtail Possums

Year	Commercial Permits*	Est. Commercial Harvest	Skins Traded	Carcases Traded
1996	59	13 917	865	4827
1997	35	12 364	3	11325
1998	176	10 596	50	6762
1999	38	11 635	100	8739
2000	42	55 200	183	42269

Permits are issued for taking specified wildlife at any time. As there is no longer a hunting season for brushtail possums licences are not issued.

The market for skins of the above species has declined markedly over the past 25 years. This is reflected in a decline in the size of the skin harvest, as indicated by the total number of skin royalties paid, from over 500 000 per year in the late 1970s to under 200 in the year 2000.

Over the same period of time, the market for game meat for human consumption has expanded. This is particularly evident in the export trade in brushtail possum carcasses, which has grown from none before 1995 to over 40 000 in the year 2000. By comparison, the trade in wallaby meat for human consumption, as reflected in the quantity of meat processed through licensed game meat works, grew during the early 1990s and has remained relatively stable since 1995.

Table 2.1.e.4 Annual harvest and culling of Wallabies

Year	Commercial Licences	Game Meat Produced (kg)	Non-Commercial Shooting*
1996	113	69 617	4956
1997	80	58 055	5926
1998	61	50 974	4989
1999	50	67 999	4646
2000	42	61 642	4391

* For crop protection and recreational shooting purposes.

The number of licences and permits issued to take wallabies and brushtail possums commercially has declined since 1996 as a result of increasing demand from the game-meat market for suitably equipped, professional, trained and accredited game harvesters. Most people who previously harvested skins have been unable to supply the game-meat industry.

In addition, there is a large, but no currently quantified, non-commercial harvest of wallabies by shooting for crop protection and recreational purposes.

Brushtail possums, and to a lesser extent both species of wallaby, are primarily forest and woodland species whose densities are highest where this habitat is adjacent to agricultural land. Over the past 20 years, all three species have increased in numbers across Tasmania, in part because of land-use practices, including the clearfelling and regeneration of native forests. However, between 1996 and 2001 numbers have remained largely unchanged.

Table 2.1.e.5 Annual harvest of Deer

Year	Deer Licences	Estimated Male Deer taken
1996	2672	580
1997	2832	600
1998	2862	592
1999	2774	544
2000	2715	760

Dry eucalypt forests and woodlands are important to fallow deer for shelter, fawning and resting, though wet forests and rainforests are too dense to be utilised by them.

While the number of licences sold in recent years has declined, the Department's ability to estimate the number of deer taken has improved, largely through improved information from an increasing number of property owners. The result is an apparent increase in the number of (male) deer taken which is more the result of improving estimates than increasing hunting success.

Increasing numbers of female deer are being taken under crop protection permits and from 2002 hunters will be allowed to take up to two 'antlerless' deer. These changes are possible because of improved deer management, rather than rising deer numbers.

2.1.f AREA OF PLANTATION ESTABLISHED MEETING EFFECTIVE STOCKING ONE YEAR AFTER PLANTING

The effective initial stocking of plantations is one measure of the plantation's potential productivity. Seedlings that survive to age one year are generally deemed to be established and therefore with the potential to contribute to the future productivity of the plantation. This indicator reports on the area of established seedlings.

Plantation developers usually contract with growers to establish plantations with effective stocking rates. The main growers have internal management systems to assess the stocking and take their remedial action if necessary. The Forest Practices Code recognises that the optimal stocking for a plantation depends on the specific objectives of its management. Generally, plantations in Tasmania are planted at a stocking equivalent to 1000 to 1300 stems per hectare. The Code prescribes that where survival is less than 50 per cent, re-establishment should be considered provided that the reasons for the failure are identified and that corrective action is taken to ensure that subsequent plantings do not fail.

As a backup to internal systems, all Forest Practices Plans for plantation establishment require a stocking standard to be prescribed. Performance against the stocking standard must be assessed and reported on through the certificate of compliance^a that must be lodged with the Forest Practices Board when the plan has been completed. The Board may require remedial action where a stocking standard has not been achieved. Full data on the stocking of plantations are not available for this report, but will be available in the future. The data received from compliance reports to date confirms that stocking standards are being achieved, with no reports of unacceptable stocking.

^a **Certification of Compliance**

Changes to the *Forest Practices Act* from 1 July 1999 require a certificate of compliance to be lodged with the Board within 30 days after the Forest Practices Plan expires. These certificates must be completed by a Forest Practices Officer and lodged by the person who applied for the Plan. This affects all plans certified since 1 July 1999. As most Forest Practices Plans run for three or four years, only a few certifications of compliance were received by 30 June 2001.

2.1.g AREA AND PERCENTAGE OF HARVESTED AREA OF NATIVE FOREST EFFECTIVELY REGENERATED

The effective initial stocking of regeneration of harvested native forests is one of the main measures of the potential productivity and sustainability of wood production in native forests. This indicator reports on the area and percentage of stocking that have been assessed as successfully established. The timing for this assessment varies, depending on such factors as the forest type and silvicultural regime. This indicator does not report on the growth rate of the seedlings, although this is also a measure of future productivity and sustainability.

In Tasmania, stocking is measured on the basis of the major commercial tree species that occurred naturally on the site pre-harvesting. Because many of the commercial forest types contain as few as one to three tree species, the stocking data are recorded as “presence” or “absence” of any one of the species, with no differentiation of species type.

The Forest Practices Code prescribes that sowing and planting mixtures must represent the natural composition of the former forest. This is achieved through appropriate seed mixtures, natural seeding and the effects of ecological sifting.

The Forest Practices Code prescribes stocking standards for areas regenerated to native forest after harvesting. Survey techniques and mapping rules are detailed in a technical bulletin. The Code requires surveys after clearfelling to be conducted one year after clearfelling, or after partial harvesting at age two years. Rehabilitation measures should be implemented where necessary and evaluated with a subsequent regeneration survey. The factors most likely to cause understocking are an inappropriate silvicultural regime, poor seedbed preparation and high browsing damage by native mammals.

The regeneration of native-forest eucalypt coupes is assessed after three years based on at least one regeneration survey and regular monitoring for browsing damage. On State forest, a collation of results from regeneration surveys is available for coupes established since 1994-95. These data are compiled at annual Quality Standards Reviews and results are available for reporting about 3.5 years after coupe establishment (Tables 2.1.g.1 and 2.1.g.2).

A similar collation of results for private land is not available. Major forest companies have environmental management systems that require regeneration stocking assessment and remedial treatment if appropriate standards are not achieved. However, this information is not publicly reported.

The recent introduction of compliance reporting^b under the *Forest Practices Act 1995* will, in the future, provide data on the achievement of stocking standards across all tenures. The Forest Practices Board will take action to require remedial treatment where a prescribed stocking standard has not been achieved. Full data on the regeneration of harvested native forests are not available for this report, but

¹Certification of Compliance

Changes to the *Forest Practices Act* from 1st July 1999 introduce a requirement for a certificate of compliance to be lodged with the Board within 30 days after the Forest Practices Plan expires. These certificates must be completed by a Forest Practices Officer and lodged by the person who applied for the Plan. The requirement to lodge a certificate of compliance will affect all plans certified since 1st July 1999. Due to the 3 or 4 year duration of most FPPs only a small number of certifications of compliance have been received to date.

will be in future. The data received from compliance reports to date confirm that stocking standards are being achieved, with no reports of unacceptable stocking.

Table 2.1.g.1 Regeneration success for clearfelled eucalypt coupes in State forest regenerated to native forest.

Regeneration Year	Total Area of Coupes Treated (ha)	Total Area of Coupes that Achieved Standard (ha)	% Area that Met Standard
1994-1995*	844	805	95
1995-1996	2364	2183	92
1996-1997	2146	1951	91

*The 1994-95 regeneration program was smaller than average because a very wet autumn restricted regeneration burns.

Table 2.1.g.2 Regeneration success for partially logged eucalypt coupes regenerated to native forest. (For State forest only)

Regeneration Year	Total Area of Coupes Treated (ha)	Total Area of Coupes that Achieved Standard (ha)	% Area that Met Standard
1994-1995	1974	1861	94
1995-1996	1586	1586	100
1996-1997	3058	3010	98

The results over the three years for which collated data are available show that the prescribed stocking standard was achieved in coupes comprising over 92 percent of the area clearfelled, and in coupes comprising over 97 percent of the area partially logged. Coupes that failed to meet the stocking standard were generally marginal, so had been slightly understocked below the optimum for productivity.

CRITERION 3: MAINTENANCE OF ECOSYSTEM HEALTH AND VITALITY

This criterion focuses on the impacts of pests and diseases on plantations and the impact of wildfire on all forest. Understanding the impact of pests and diseases and developing control methods very much in early stages; this is reflected in the results presented. Trend data for wildfire damage across tenure by broad forest types are provided.

3.1.a AREA AND PERCENTAGE OF FOREST AFFECTED BY PROCESSES OR AGENTS THAT MAY CHANGE ECOSYSTEM HEALTH AND VITALITY

Indigenous and exotic pests, pathogens and weeds, as well as such physical stresses as extreme weather events, fire, and nutritional deficiencies or imbalances, adversely affect forest health and vitality. Damage to forests from pests and pathogens, while widespread and abundant, is usually minor and of little consequence to forest health. There is, however, an ever-present threat of pest outbreaks, disease epidemics or climatic events causing damage that is severe enough to adversely affect the forest's health and vitality. Exotic pests, pathogens and weeds are a particular concern because the natural enemies or processes that regulate their populations in their native lands are usually absent; consequently, damaging outbreaks or epidemics can develop rapidly.

The health of plantations is managed relatively intensively to protect the capital investment in establishing and managing them. Most of the major plantation owners have recently started annual or biennial health checks of their estates and monitoring populations of major pests as a basis for deciding on the need to control them. A consistent approach to reporting is currently being developed. The health of native forests is managed much less intensively. Field staff in the course of their normal duties detect any health problems in native forests. Outbreaks of native pests and epidemics of native pathogens are not usually controlled although prescriptions are used to limit damage by some of them (e.g. myrtle wilt).

Main health problems in *Eucalyptus nitens* and *E. globulus* plantations

The spectrum of agents in eucalypt plantations either treated to prevent damaging outbreaks, or that have been assessed as causing significant damage, are those that are active in the early part of the rotation. The most significant agents in the eucalypt plantations assessed (about 80 000 hectares) in 2000-2001 are listed in Table 3.1.a.1. This is a reflection of the considerable management effort devoted to protecting young plantations and the predominance of younger age classes in the plantation estate.

The most significant damaging agent is browsing with approximately 8 400 hectares of recently established plantation requiring application of browsing controls in 2000-2001.

Table 3.1.a.1 Most significant agents affecting the health of ≈80 000 ha of eucalypt plantations in 2000-2001*

Damage agent	Area affected (% of total plantation area)	Area treated (% of total plantation area)
Browsing mammals		10.5
Wind damage	1.7	
Mycosphaerella leaf blight	0.8	
Autumn gum moth (<i>Mnesampela privata</i>)		0.8
Wingless grasshopper		0.5
Eucalyptus leaf beetles (<i>Chrysophtharta</i> species)		0.4
Spring beetle (<i>Heteronyx</i> species)		0.3
Gum leaf skeletoniser (<i>Uraba lugens</i>)		0.1

* Annual reports to Standing Committee on Forestry 2000-2001 was narratives.

***Pinus radiata* plantations**

Natural deficiencies of nitrogen and phosphorus are the main agents that adversely affect the health of radiata pine plantations throughout Tasmania, particularly on soils derived from sedimentary rocks. Magnesium deficiency is also widespread, but arguably does not affect health or productivity. Fertiliser is applied where necessary to maintain site productivity.

Of the biotic agents, spring needle cast is the most significant, especially for plantations over 400 m above sea level (Table 3.1.a.2). Bark stripping of young trees by wallabies is prevalent in 10-20% of 3-5 year-old plantations, but mortality resulting from girdling is rare. Top death in older trees resulting from girdling of the upper stem by possums can be a significant problem in some areas. Sirex wood wasp and Dothistroma needle blight are currently having little impact on the health of *P. radiata* plantations in the state. The Monterey pine aphid (*Essigella californicus*), first detected in Tasmania in 2000, is currently found only in southern Tasmanian plantations.

Table 3.1.a.2 Main biotic agents that adversely affected the health of *Pinus radiata* plantations in 2000-01 (Plantation area assessed ≈ 40 000 ha)

Damage agent	Area treated or affected (% of total)
Spring needle cast	5.0 ¹
Bark-stripping by wallabies	0.5
Bark-stripping by possums	0.2

¹ Area suffering severe Spring Needle Cast (> 20% reduction in diameter growth predicted).

Native forests

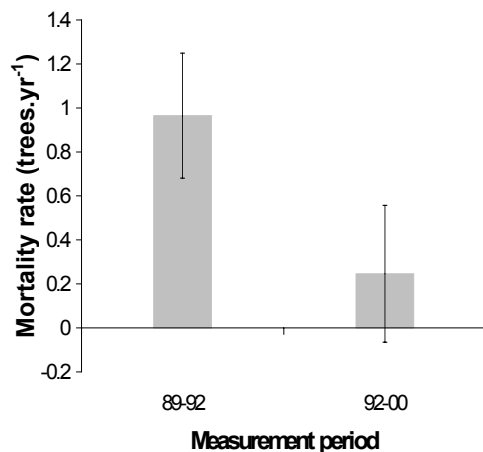
Historically the most regularly reported health problems in native forest are symptoms of crown dieback in eucalypts (caused by a variety of agents) and defoliation by a range of native insects.

The most significant health problems reported in native forest areas during 2000-2001 were:

- Severe drought during 1999-2001 in south-eastern Tasmania caused extensive mortality of both eucalypts (mainly *E. viminalis* and *E. obliqua*) and understorey species.

- Extensive areas of high-altitude eucalypt forests in central Tasmania have been suffering progressive crown decline over the past few years. The causes of the decline have not been investigated.

Table 3.1.a.3 Mortality rate of *Nothofagus cunninghamii* infected by myrtle wilt *Chalara australis*



Myrtle wilt is the most significant disease of *Nothofagus cunninghamii*. It is caused by the endemic fungus *Chalara australis* and occurs in rainforests throughout Tasmania. In the 8 years between 1992 and 2000 the annual rate of mortality throughout Tasmania dropped significantly from the rate measured between 1989 and 1992.

Root rot caused by the introduced soil-borne fungus *Phytophthora cinnamomi* is the most significant threat to the conservation of native plant species in Tasmania. Susceptible species that are rare, threatened or endangered are at greatest risk from the fungus. To gain an accurate picture of impact requires monitoring over long time frames (20-30 years). This allows fluctuations in the balance between mortality and recruitment to be shown. Permanent monitoring plots have recorded appreciable mortality in selected rare or threatened species during the three-year period 1996 to 1999. Monitoring is continuing.

Table 3.1.a.4 Percentage of selected rare or threatened plant species in permanent monitoring plots that died during the period 1996-99

<i>Epacris barbata</i>			<i>Epacris limbata</i>			<i>Pultenaea hiebertioides</i>		
Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
27.8	89.2	48.4	27.4	43.4	33.2	14.1	34.1	25.9

Wildfires

Fire is a natural element of many natural forest communities in Tasmania. However, unplanned wildfire can adversely affect the health of some sensitive communities, such as alpine coniferous woodlands, and reduce the quality of forests where wood production is a management objective.

The area of forest burnt annually by bushfires during 1996-2001, while variable, has been consistently lower than the fifty-year average of 26 900 hectares. The variations are attributable to seasonal climates and weather events, particularly combinations favourable to ignitions and rapid spread of fire. The year 1997-98 saw such a combination, when drought, strong winds, summer heat and low humidities promoted forest fires that burnt large areas.

Table 3.1.a.5 Total area (ha) of forest (public and private) damaged by wildfire attended by Forestry Tasmania during the five years between 1996 and 2000 (Does not include non forest vegetation types)

Forest type	Severity	1996-97	1997-98	1998-99	1999-00	2000-01
Wet sclerophyll (includes Mountain forest)	Variable scorch	488	796	162	1077	693
	<i>Severe scorch</i>	131	142	3	0	0
Dry sclerophyll (includes subalpine woodland)	Variable scorch	5211	17924	4136	2991	6937
	<i>Severe scorch</i>	985	2912	136	60	63
Mixed forest	Variable scorch	383	314	152	0	458
	<i>Severe scorch</i>	80	96	3	0	0
Rainforest	Variable scorch	1	13	17	5	520
	<i>Severe scorch</i>	0	24	17	0	0
Silvicultural regeneration	Variable scorch	306	1228	21	40	0
	<i>Severe scorch</i>	100	233	0	0	0
Softwood plantation	Variable scorch	7	447	3	536	1
	<i>Severe scorch</i>	3	262	0	0	0
Hardwood plantation	Variable scorch	1	54	0	0	18
	<i>Severe scorch</i>	0	65	0	0	2
Total forest burnt	Variable scorch	6397	20776	4491	4649	8627
	<i>Severe scorch</i>	1299	3734	159	60	65

CRITERION 4: CONSERVATION AND MAINTENANCE OF SOIL AND WATER RESOURCES

This criterion encompasses the conservation of soil and water resources in forests. It aims to demonstrate that the risk of soil erosion has been explicitly addressed in forest-management planning and field operations.

4.1.a AREA AND PERCENT OF FOREST LAND SYSTEMATICALLY ASSESSED FOR SOIL EROSION HAZARD, AND FOR WHICH SITE VARYING SCIENTIFICALLY-BASED MEASURES TO PROTECT SOIL AND WATER VALUES ARE IMPLEMENTED

The protection of soil and water is fundamental to maintaining the productivity of forests and the sustainability of ecosystem processes.

Wood production forests

The Forest Practices Code prescribes measures that all public and private landowners must take under the duty of care to protect soil and water values. Under the Code, all forest areas subject to forest practices system must be assessed for the erosion potential of their soil. The soil and water provisions of the Code apply to all Forest Practices Plans. In addition, site specific prescriptions must be included in plans where necessary. Areas operating under Forest Practices Plans are described in the annual reports of the Forest Practices Board on www.fpb.tas.gov.au. Where soils have a high or very high erodibility rating, the Soil and Water Scientist at the Forest Practices Board must be notified. In addition, notifications may be received if the forester in charge requires advice on any soil and water issue relating to erosion. In 1999-2000, the Soil and Water Scientist received 171 notifications, and in 2000-2001, 198. In each of these years, about half of these notifications required field inspection and a full report on measures to be taken to prevent erosion. The remainder were dealt with from the office, with a brief report or endorsement of the forester's recommendations.

A formal review of soil and water provisions in the Code, and industry and public concerns, have led to the provisions for preventing erosion being improved. The main changes affect operations next to streams, particularly cultivating soils for plantation establishment. In consultation with industry, a cultivation guide has been inserted in the Code (Table 10) showing required and recommended operations on various combinations of soil-erodibility classes and slope. Checks by the Soil and Water Scientist and foresters have shown that the rules and guidelines are justified and in general are preventing significant erosion. More formal assessments are made through the audit process.

In accordance with s.4 of the *Forest Practices Act 1995*, the Forest Practices Board undertakes an independent annual audit of a sample of about 15 percent of Forest Practices Plans on private property and State forest. The sample is random and is stratified to ensure that the activities of all forestry organisations and forest practices officers are sampled. The audit covers plans for forest harvesting, roading, quarrying and site preparation at various stages of completion. Much of the audit assesses the implementation of the Code prescriptions for soil and water-value protection which is grouped into several categories. Results from these audits over the last five years are given in Table 4.1.a.1.

Table 4.1.a.1 Performance ratings of operations for compliance with soil and water-value prescriptions of the Forest Practices Code (source: annual audits of the Forest Practices Board)

Category	Performance rating of operations*				
	1996-97	1997-98	1998-99	1999-00	2000-01
Roading	88	96	94	94	97
Bridges	96	100	82#	87	98
Harvesting	91	96	97	95	92
Snig Tracks	86	94	94	92	93
Landings	82#	96	94	89	93
Stream Reserves	93	93	95	92	95
Site Preparation	87	92	94	83#	91

* the performance standard requires a rating of 85% or more (operations below the standard are marked with #)

The data presented in Table 4.1.a.1 indicate a consistently high level of operational performance in complying with the soil and water prescriptions of the Forest Practices Code.

Formal Reserves

In reserved areas, where only a very small proportion of the land will experience human activities likely to lead to erosion, broadscale erosion hazard assessment is not required. Where development of any kind is proposed, measures are taken routinely to ensure that erosion risks are minimised.

Current efforts are mainly directed at correcting existing erosion problems. During the period 1996-2001, the priority of a high proportion of trackwork in reserved land was to arrest current rates of erosion. Most of this work was in alpine areas (above 1000 m), where slower vegetation recovery rates demand that action is undertaken before large areas are trampled.

While it has not been necessary in recent times to carry out extensive erosion work in forested areas, the [draft] *Reserve Management Code* (Section 6.4) prescribes that tracks are to be planned and classified in reserve management plans or, in some cases, track management plans. These tracks should give special attention to the avoidance or limitation of erosion. The existing World Heritage Area track strategy and the recommendations for the Statewide walking track strategy both place a high importance on preventative works to arrest erosion.

Monitoring and rapid sampling of existing tracks is in progress to assess the extent, degree and rates of change of track impacts, including erosion.

CRITERION 5: MAINTENANCE OF FOREST'S CONTRIBUTIONS TO GLOBAL CARBON CYCLES

Estimates of total forest biomass allow temporal changes in the total carbon pool to be identified. The typing of forest helps pinpoint where changes are occurring. The data provided below are preliminary for Tasmania; their accuracy is expected to improve with new methods of estimating forest biomass contributions.

5.1.a TOTAL FOREST ECOSYSTEM BIOMASS AND CARBON POOL

Forests are large natural pools of carbon; estimates of their biomass are a measure of their contribution to global carbon cycles. The National Carbon Accounting System (NCAS) was developed by the Australian Greenhouse Office for national reporting of carbon emissions and sinks for land-based (largely forestry and agricultural) activities. The first phase of development of the NCAS, which is nearing completion, is to make a continental inventory of Australia's 1990 baseline emissions under Article 3.7 of the Kyoto Protocol. The second phase will focus on the evolution of data and methods that will be directly relevant to this RFA indicator at a regional scale. The NCAS will be fully operational by the next five-yearly report, and will also be used retrospectively to enable current interim estimates and subsequent estimates to be compared.

The first phase of the NCAS currently provides for interim spatial estimates of total forest biomass, based on the biomass at maturity (i.e. in mature condition). This is inferred from data on plots where there has been no known recent disturbance. These data are calculated as follows:

- Area and type of forest: the Major Vegetation Group classes of the National Vegetation Information System (NVIS) (Table 5.1.a)
- Point-based estimates of above-ground forest biomass at maturity from a collation of data (published and unpublished) by CSIRO Forestry and Forest Products for the NCAS (unpublished).
- "Productivity" surface (used to interpolate biomass from point-based estimates) as reported in Landsberg and Kesteven (2001) (NCAS Technical Report No. 27). A relationship was derived between the measured aboveground biomass at maturity of a site and its long-term "Productivity Index".
- The relationship between mass and productivity was applied to the forest types as mapped in the NVIS.
- Conversions to total biomass (including roots) from above-ground biomass were calculated from conversions by Snowdon *et al.* (2001) (NCAS Technical Report No. 18).

Based on the above, the estimated biomass (Australian Greenhouse Office, 2001) of Tasmanian forest by type, is summarised in Table 5.1.a. Estimates are quoted in millions of tonnes, reflecting the imprecision of contemporary calculation methods and data sources.

The values derived are over-estimates, as they assume all forests are mature, and therefore do not take account of such disturbances as harvests or fires, which would reduce the biomass at maturity. Furthermore, the data are derived at a national level, and their applicability to Tasmanian forests is untested.

Table 5.1.a Estimated Forest biomass in Tasmania by vegetation type

MAJOR VEGETATION GROUP (from NVIS)	MEAN ABOVE- GROUND BIOMASS (t/ha)	STANDARD DEVIATION	AREA (thousands of hectares)	TOTAL ABOVE- GROUND BIOMASS (millions of tonnes)	TOTAL BIOMASS (millions of tonnes)
Rainforest and Vine Thickets	187	54	706	132	144
Eucalyptus Tall Open Forest	177	62	619	110	123
Eucalyptus Open Forest	134	55	1,921	257	309
Eucalyptus Low Open Forest	138	24	11	1	2
Eucalyptus Woodland	115	41	461	53	69
Acacia Forest and Woodland	218	59	3	1	1
Callitris Forest and Woodland	109	16	0	0	0
Casuarina Forest and Woodland	118	19	16	2	3
Other Forests and Woodlands	162	50	36	6	8
Eucalyptus Open Woodland	95	30	111	11	14
Low Closed Forest and Closed Shrubland	162	46	217	35	48
Total			4 100	608	721

Source: Australian Greenhouse Office, 2001

References

Snowdon P., Eamus D., Gibbons P., Khanna V., Keith H., Raison J. and Kirschbaum M. (2000) *Synthesis of allometrics, review of root biomass and design of future woody biomass sampling strategy* National Carbon Accounting System Technical Report No. 17, Australian Greenhouse Office, Canberra.

CRITERION 6: MAINTENANCE AND ENHANCEMENT OF LONG-TERM MULTIPLE SOCIO-ECONOMIC BENEFITS TO MEET THE NEEDS OF SOCIETIES

6.1 Production and consumption

This sub-criterion enables socio-economic benefits to be monitored by ascertaining trends in the value and quantities of both timber and non-timber forest products. The benefits include contributions to regional economies.

6.1.a VALUE AND VOLUME OF WOOD AND WOOD PRODUCTS PRODUCTION, INCLUDING VALUE ADDED THROUGH DOWNSTREAM PROCESSING

Trends in the value and volume of wood production are a means of monitoring socio-economic benefits from the productive use of forests.

The Tasmanian RFA seeks to provide for growth in the development of industries associated with the sustainable use of forest products. It contains a number of initiatives (Attachment 12) designed to encourage value-adding uses of wood from native forest and plantations.

Data on log production in Tasmania (from both public and private land) for the ten years to 2001 are presented in Table 6.1.a.1. This information is derived from the Australian Bureau of Statistics' (ABS) quarterly surveys of production from the Tasmanian forest industry. Accurate data on minor wood products (e.g. firewood, poles, fence posts, chopping blocks) are not available.

The data provided by ABS varies from that presented in Indicator 2.1.d for a variety of reasons including:

- numerous data sources across industry, without verification of the data provided unless there are significant changes from past data that indicate the need for checking;
- data is provided to ABS on processor classification rather than sales classification (used in 2.1.d); and
- ABS does not collect data on export of whole logs.

Table 6.1.a.1 Volume of logs processed and timber produced in Tasmania ('000 m³)

Year	Eucalypt Sawlogs	Other Native Sawlogs	Plantation Softwood Sawlogs	Total Sawlogs Delivered	Pulpwood (hardwood and softwood)	Total Sawn, Peeled & Sliced timber produced	Plantation Softwoods Peeled & Sliced timber produced
1991-92	470.4	10.2	325.0	805.6	3 173.1	297.1	130.2
1992-93	554.5	15.8	312.8	883.2	3 350.6	324.1	131.6
1993-94	584.3	16.8	299.2	900.4	3 448.8	348.0	141.0
1994-95	653.1	15.4	304.9	975.4	4 064.1	360.1	142.7
1995-96	602.8	14.4	343.7	960.9	3 510.0	349.1	152.0
1996-97	500.8	18.2	352.9	871.9	3 207.4	328.5	158.0
1997-98	486.8	25.9	357.7	880.3	3 998.1	344.2	167.3
1998-99	499.9	23.6	351.9	875.4	3 459.6	334.8	169.7
1999-00	510.1	29.7	396.2	936.9	4 526.8	366.0	190.6
2000-01	468.5	27.4	369.9	865.8	np	338.6	174.1

Source: ABS Catalogue Number 1303.6 with updates provided by ABS
 np = not available from the ABS for separate publication

Data on non-coniferous pulpwood logs produced are no longer available from ABS, because clause 2 of the *Statistics Determination* in force under Section 13 of the *Census and Statistics Act 1905* prevents disclosure of information that might identify a particular business or organisation.

The main significant trends evident from the volume data are:

- the total volume of logs harvested has fluctuated over the decade; no long-term trend of either decline or increase in any category of logs from native forest or softwood plantations is evident from the data;
- the volume of sawn, peeled or sliced timber produced has also varied, although a trend to gradually increased volumes is evident, particularly in softwood plantation material.

Forest production is largely influenced by market demand, particularly in the housing and building construction sector. Native forest sawlog production decreases because of reduced areas, and consequently sustainable yields, available for harvesting, while softwood plantation sawlog production increases because of the expanding area of maturing plantation. Virtually no sawlog has been produced from eucalypt plantation to date; however, small but increasing volumes of pulpwood have been produced from eucalypt plantations in recent years.

The Australian Bureau of Statistics collects data on value of production by selected industry sectors. The value of industry production can be measured in several ways.

One method is turnover value. Turnover represents sales value (exclusive of GST) of goods whether or produced by an establishment or transferred from other establishments of the same business.

The available turnover values for forest industry sectors for the period to June 2000 are listed in Table 6.1.a.2. Data for the forest and logging sector are not available. Data for the paper and paper-product manufacturing sector are not reported separately but are included in the total figures. Data for 2000-2001 are not yet available from ABS.

Table 6.1.a.2 Forest Industry Turnover (\$m)

ANZSIC ^a	Description of Industry	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00
231	Log Sawmilling and Timber Dressing	500.1	421.3	444.5	501.7	453.7	540.4
2311	Log sawmilling	111.9	np ^b	56.5	np	np	np
2312	Wood chipping	np	np	278.7	np	np	np
2313	Timber resawing and dressing	np	106.1	109.3	122.8	111.5	165.6
232	Other Wood-product Manufacturing	np	np	np	np	np	np
2323	Wooden structural component	17.7	29.2	28.3	25.3	31.2	31.6
2329	Wood product manufacturing not classified elsewhere	10.1	12.5	4.7	4.1	3.5	4.8
233	Paper and Paper-product Manufacturing	np	np	np	np	np	np
023	Total Wood and Paper Products	1114.0	1125.0	1136.1	1175.9	1164.1	1271.3

Source: ABS Catalogue Number 8221.6 with updates provided by ABS

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

^b np = not available from ABS for separate publication

Significant trends evident from the turnover data include the following:

- Turnover from the reported industry sectors exceeds \$1 billion per year
- Total annual turnover value has steadily increased over the period and, since the RFA, has grown by over \$100 million. There are some small variations within sectors.

Another measure of production value is contribution to Gross Domestic Product (GDP).

Before 1997-98, Industry Gross Product (IGP) was the measure of the contribution by manufacturing industries to GDP. However, after new international standards for measuring economic variables were introduced, IGP has been replaced by the Variable Industry Value Added (IVA) as the measure of industry contribution to GDP.

The relationship between IVA estimates and IGP estimates is that IGP equals:

- IVA plus intellectual property royalty income; and
- IVA less intellectual property royalty expenses; and
- IVA less computer software expenses not capitalised by the business, less specified indirect taxes (for manufacturing industries, the main types are fringe benefits tax, payroll tax, land rates and land taxes).

IVA is not a measure of operating profits before tax. Wages, salaries and most other labour costs are not included in its calculation, and neither are most insurance premiums, interest expenses or depreciation, and a number of lesser expenses.

The available data for the forest industries relates to the sawmilling and wood and paper industry sectors only. Data on other wood products (e.g. firewood, poles, fence posts, chopping blocks) are not available.

Data for the five-year period ending June 2000 are presented in Table 6.1.a.3. Data for 2000-2001 are not yet available from ABS.

Table 6.1.a.3 Production value of forests estimated by (a) Industry Gross Product and (b) Industry Value Added (\$m per year)

ANZSIC ^a	Forest Industry Sector	1995-96 (IGP) ^b	1996-97 (IGP) ^b	1997-98 (IVA) ^c	1998-99 (IVA) ^c	1999-00 (IVA) ^c
231	Log sawmilling and timber dressing	205.2	167.8	195.2	163.2	197.6
2311	Log sawmilling	np	25.2	np	np	np
2312	Wood chipping	np	96.3	np	np	np
2313	Timber resawing and dressing	57.1	46.2	52.6	45.4	63.4
023	Total Wood and Paper Products	542.0	477.6	413.4	403.3	399.0

Source: ABS Catalogue Number 8221.6 with updates provided by ABS

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

^b IGP = Industry Gross Product ^c IVA = Industry Value Added

np = not available from ABS for separate publication

No significant conclusions can be drawn from the data on trends over the period, particularly as the basis for reporting contribution to GDP has changed. The GDP contribution of log sawmilling and timber dressing appears to have grown, while the contribution of all wood and paper products appears to have decreased since 1997, partly because of the closure of Australian Paper's Burnie pulp mill in 1997.

The contribution to GDP of all wood and product manufacturing, as reported by ABS, exceeds \$400 million per year.

6.1b VALUE AND QUANTITIES OF PRODUCTION OF NON-WOOD FOREST PRODUCTS

Multiple-use forest management objectives enable delivery of socio-economic benefits in addition to those derived from wood products. However very few data on the value and production of non-wood products from Tasmanian forests have been collected. Only honey and beeswax data are currently available for this indicator.

Production of honey and beeswax for the 10- years ending November 1999 is presented in Table 6.1b.1 below. The data comes from surveys of the apiarists with more than 200 hives, who probably produce about eighty percent of the total honey production (C. Parker, Tasmanian Beekeepers Association, pers. com.). Gross value is the value at the “property gate”. Data for 2000-2001 are not yet available from ABS.

Table 6.1b.1 Honey and Beeswax Produced (tonnes)

Year	Honey (tonnes)	Beeswax (tonnes)	Gross Value Honey & Beeswax (\$m)
1989-90	748	12	1.3
1990-91	972	15	1.8
1991-92	1 211	19	2.0
1992-93	732	10	1.2
1993-94	623	9	1.0
1994-95	979	13	2.0
1995-96	741	13	1.7
1996-97	1 012	14	2.1
1997-98	741	11	1.5
1998-99	686	9	1.4
1999-00	944	13	2.1

Source: ABS Catalogue Numbers 7501.0 & 7113.0 with updates provided by ABS

Production data applies to all honey sources, not just forest. Leatherwood honey is about seventy percent of volume (Gifford 1990). Most of the remainder comes from clover, blackberry and eucalypt (Ziegler 1993), with production from all forest sources representing about eighty percent of production (C. Parker pers. com.). No conclusions on the sustainability of honey production from forests can be drawn from the data. Wax production data have little prospect for use as an indicator of forest sustainability. The data are not comprehensively collected, with many producers not reporting (C. Parker pers. com.).

The value and volumes of honey and beeswax vary considerably from year to year, as shown by the ABS data. This appears to be due mainly to variations in climatic factors, such as temperatures, rainfall and humidity, all of which affect both nectar production and the bees' activities. Since the 1990s, honey production in Tasmania has been adversely affected by the introduced exotic, *Acophora*, a chalk brood fungus (C. Parker pers. com.).

Anecdotally, some leatherwood-rich forest has been lost, as predicted by Zeigler (1993). However, no beekeepers have lost leatherwood apiary sites (and hence lost honey and wax production) over the past four years.

References

- Gifford, D. (1990) *Tasmanian Honey Industry Situation Statement* Department of Primary Industry, Tasmania
- Ziegler, K. I. (1993) *Leatherwood Nectar Resource Management Report* Forests and Forest Industry Council, Tasmania

6.1.d VALUE OF WOOD AND NON-WOOD PRODUCTS PRODUCTION AS A PERCENTAGE OF REGIONAL VALUE OF PRODUCTION

This indicator potentially provides a measure of the contribution of the forest industries to the Tasmanian economy.

The Australian Bureau of Statistics (ABS) collects and publishes data on the value of selected products. Those relevant to forests and the forest industries relate to the sawmilling and wood and paper industry sectors. Insufficient useful data on non-wood production are available to contribute to this indicator.

The available data on the value of forest-industry production are presented under Indicator 6.1.a. Table 6.1.d below shows production value as a percentage of total Tasmanian production.

Table 6.1.d Production Value of Tasmanian Forest Industries as a percentage of Total Manufacturing Value

ANZSIC ^a	Description of Industry	1995–96	1996–97	1997–98 (IVA) ^b	1998–99 (IVA) ^b	1999–00 (IVA) ^b
	Total Tasmanian Manufacturing Industry Value (\$)	1 809.8	1 492.2	1 739.8	1 698.5	1 769.0
231	Log Sawmilling and Timber Dressing (%)	11.3	11.2	11.2	9.6	11.2
232	Other Wood Product Manufacturing (%)	np ^c	np ^c	np ^c	np ^c	np ^c
233	Paper and Paper Product Manufacturing (%)	np	np	np	np	np
023	Total Wood and Paper Products (%)	30.0	32.0	23.8	23.7	22.6

source: ABS Catalogue Number 8221.6 with updates provided by ABS

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

^b IVA – Industry Value Added

^c np = not available from ABS for separate publication

Conclusions evident from the data are that, over the period, reviewed are:

- the value of the wood and paper products manufacturing industries remains very significant to the Tasmanian economy, providing more than twenty two percent of all manufacturing value;
- the relative contribution of the forests industries to the Tasmanian manufacturing economy has declined marginally since the signing of RFA; and
- the log sawmilling and timber-dressing contribution has remained constant.

6.2 Recreation and Tourism

This sub-criterion focusses on recreational and tourism uses of forests. It reports on areas available for recreation, the variety of recreation opportunities, and the intensity of usage.

6.2.a AREA AND PERCENT OF FOREST LAND AVAILABLE FOR GENERAL RECREATION AND TOURISM

This Indicator provides information on access to public forests for recreational and tourism purposes. It also provides a coarse measure of the extent to which forest management is providing for the recreational needs of the community.

The overwhelming majority of forested land reserved under the *National Parks and Wildlife Act 1970* is available for recreation and tourism. Under the 1999 RFA-related amendments to this Act, recreation and tourism are included in the statutory management objectives for all National Parks, State Reserves, Game Reserves, Historic Sites, Conservation Areas, Nature Recreation Areas and Regional Reserves – they are omitted from the objectives for Nature Reserves and the two private land reserve types. The exceptions where tourism and recreation are not specified as objectives encompass only about 130 000 hectares, or less than 5% of the area reserved under the *National Parks and Wildlife Act*. Recreation and tourism activities are not specifically excluded from Nature Reserves, they are not encouraged, as they are not within the management objectives. In the case of Private Sanctuaries and Private Nature Reserves, public access is a matter of the owner's discretion.

Under the Act, public access can be restricted by declaring a 'restricted area' in a management plan or by erecting a sign prohibiting access. Such areas are generally small and created for particular management reasons (e.g. protection of outstanding caves). Although the whole of Macquarie Island Nature Reserve is a restricted area, tourism access is provided to some sites under controlled conditions. It is unlikely that more than 0.5% of the forested land reserved under the *National Parks and Wildlife Act 1970* is unavailable for general recreation and tourism.

Under the *Forestry Act 1920*, Forest Reserves are available for public recreational use, the preservation or protection of features of the land of aesthetic, scientific or other value, and the preservation or protection of species of flora or fauna. The statutory management objectives include "to encourage appropriate tourism, recreational use and enjoyment". State forest can be accessed for recreational purposes that are not incompatible with the *Forestry Act 1920*. Under the Act public access can be restricted for safety reasons, which is usually a temporary and short-term restriction.

The National Wilderness Inventory in 1996 identified sixteen separate areas of high-quality wilderness in Tasmania. These were used as the basis for reservation analysis under the RFA. Appendix 6.2.a compares the reservation status of areas classified as wilderness in 1996 with the status of those areas in June 2001. (Areas are rounded to the nearest 100 hectares to reflect the spatial resolution of the wilderness mapping, which was based on 1 km x 1 km units.) Note that present wilderness values have not been reassessed although it is possible that activities, especially outside reserved areas, may have adversely impacted on those values.

6.2.b NUMBER, RANGE AND USE OF RECREATION/TOURISM ACTIVITIES AVAILABLE IN A GIVEN REGION

This Indicator provides information on the diversity of recreation opportunities available in forests and forested reserves. The activities listed in Table 6.2.b.1 are specifically provided for at the number of sites indicated, by the relevant managing authority.

Table 6.2.b.1 Activities available on public forest

<i>Activity</i>	<i>FT sites</i>	<i>DPIWE sites</i>
Accommodation (huts, remote campsites)	0	43
Accommodation (other public accommodation)	2	39
Boating (boat ramps)	5	nsa ^a
Camping (developed campgrounds)	6	57
Canoeing/kayaking/rafting	4	nsa
Caving (developed caves ^b)	0	4
Education (Forest Education/Visitor Centres)	3	7
Fishing	11	nsa ^c
Interpretation (information booths)	18	19
Picnicking (picnic areas)	27	108 ^{da}
Skiing (ski fields with facilities)	0	2
Touring/sightseeing (formal lookouts)	15	53
Tourist operators (commercial)	23	121
Walking (formal routes/tracks)	226	1,119
Walking (nature trails/walks)	28	68
Wildlife observation (hides)	0	4

The following activities are generally provided for in reserved lands and are not associated with particular places or facilities:

- * Climbing/abseiling
- * Cycling
- * Nature observation
- * Scenic flights
- * Swimming

The following activities are only permitted in Game Reserves, Conservation Areas and State Forest, with game licence during open seasons)

Hunting (no designated areas – hunting seasonal)		
Horseriding (designated areas)	4	7
Off road driving (4x4 tracks)	10	31
ATV/trail bikes (designated areas)	9	11

Under the *National Parks and Wildlife Act 1970*, game hunting and taking in domestic animals such as cats and dogs are not allowed in most reserve categories.

Data on facilities for earlier years are not reliable so it is not possible to discern trends. As assets databases have now been developed it will be much easier in the future to record site-based activities. Activities such as swimming and nature observation will continue to be dispersed.

a Not separately available; included in a group category such as 'day use areas'.

b Guided tours are available at Mole Creek, Hastings and Gunns Plains caves; adventure cave tours are available through a concessionaire at Mole Creek. Permits are required for speleological access to these and certain other caves.

c Fishing is permitted in all reserves, subject to Inland Fisheries regulations; bait collection is only permitted in specified reserves, as advertised from time to time.

d Picnic areas are included in the broader category of 'day use area' which may include other facilities.

6.2.c NUMBER OF VISITS TO RECREATIONAL SITES

This Indicator provides information on the number of visits made to specific reserves (in some cases parts of reserves).

Although the data in Table 6.2.c.1 below are for each reserve as indicated, no breakdown is possible to determine the contribution of “forest” to the use of these areas, however, the national parks contain forest (on average about 40%), as well as other vegetation types.

For the national parks, there are no data from 1996-2001 for Rocky Cape, Strzelecki or Savage River (all declared April 1999). Data from Rocky Cape, The Nut State Reserve and Coningham Nature Recreation Area will again be collected from 2001.

There is no consistent trend across all national parks and state reserves in terms of the change in visitor numbers over the years. However, use of some sites has declined over the past few years: for example Hartz Mountains, Maria Island, King Solomons Cave (Mole Creek Karst) and Newdegate Cave (Hastings). A second group has experienced small but steady increases in use (between 2 and 8% per year). This is the largest group, with such sites as Freycinet, Lake St Clair, Marakoopa Cave (Mole Creek Karst), Narawntapu and Cradle Mountain, with visitor use at Marakoopa and Freycinet increasing at the highest rates of the group. Numbers in a third, small, group have fluctuated, with the Gordon River being the most prominent example of this.

Interstate and overseas visitor numbers to the State were below average in 2000 (Tasmanian Visitor Survey, Tourism Tasmania), thought to result from the Olympics, the implementation of the GST and a rise in fuel prices. Certainly, spring attendance numbers were below average at Cradle Mountain-Lake St Clair and Freycinet National Parks - sites with the highest profiles - and at Marakoopa Cave. Little effect was noticed at other sites.

State forest and forest reserve visitor numbers, as with national parks, do not show a general trend, only some small variations in numbers.

With new tourism products coming on line in State forest areas an increase in visitors is expected: for example, Tahune Forest Reserve with the new AirWalk has had more than 100 000 person-visits since it opened in July 2001 up until February 2002. There has also been a big interest in the *30 Great Short Walks* brochure produced by the Department of Primary Industries, Water and Environment; Forestry Tasmania; and Tourism Tasmania. This program to attract visitors to natural forest areas is to be increased to 60 walks by 2002.

Table 6.2.c.1 Visitor numbers/estimates to recreational sites

<i>Site</i>	<i>Tenure</i>	<i>1995/96</i>	<i>1998/99</i>	<i>2000/01</i>	<i>units of measurement^a</i>
Narawntapu (<i>Bakers Beach</i>)	National Park	32 000	31 000	34 000	Person-visit
Cradle Mountain (<i>Lake Dove</i>)	National Park	176 000	185 000	186 000	Person-entry
Lake St Clair (<i>Cynthia Bay</i>)	National Park	99 000	105 000	112 000	Person-entry
Wild Rivers (<i>Gordon River</i>)	National Park	96 200 ±9000 ^b	101 400 ±8200 ^b	91 400 ±8000 ^b	Person-visit
Southwest (estimate)	National Park	50 000	50 000	50 000	Person-visit
Mole Creek Karst	National Park	45 308	50 395	45 534	Person-visit
Mt Field	National Park	138 000	141 000	139 000	Person-visit
Freycinet (<i>Coles Bay</i>)	National Park	209 000	255 000	273 000	Person-entry
Douglas Apsley (<i>Rosedale Rd</i>)	National Park	17 000	20 000	No data	Person-entry
Maria Island (<i>Darlington</i>)	National Park	11 700	13 185	13 020	Person-visit
Ben Lomond	National Park	39 000	32 000	32 000	Person-visit
Walls of Jerusalem	National Park	2800 ^c	3700 ^c	3500 ^c	Person-visit
Hastings (<i>Newdegate Cave</i>)	State Reserve	32 921	No data	24 829	Person-visit
Coal Mines/Lime Bay	Historic Site / Nature Reserve	22 000	21 000	23 000	Person-entry
Tasman	National Park	No data	No data	264 000	Person-visit
South Bruny	National Park	No data	No data	23 000 ± 8000 ^d	Person-visit
Hartz Mountains	National Park	No data	No data	13,000	Person-visit
Milkshakes	Forest Reserve	4160	3470	3300	Person-entry
Dip Falls	Forest Reserve	No data	15 450	9600	Person-entry
Oldina	Forest Reserve	23 660	20 630	20 700	Person-entry
Dial Range	Forest Reserve	No data	12 880	18 400	Person-entry
Upper Mersey Valley	State Forest	No data	13 230	12 400	Person-entry
Liffey	Forest Reserve	25 880	23 430	21 700	Person-entry
Hollybank Forest	Forest Reserve	25 960	30,520	27 200	Person-entry
Mt Victoria	Forest Reserve	No data	7480	6300	Person-entry
Evercreech	Forest Reserve	3500	5340	No data	Person-entry
Sandspit	Forest Reserve	No data	10 800	12 800	Person-entry
Bruny	State Forest	16 330	21 460	21 200	Person-entry
Tahune	Forest Reserve	29 680 ^e	21 460 ^e	16 900 ^e	Person-entry

- Notes:
- a *person-entry*: occurs whenever a person enters a protected area (derived from traffic counts) (all Forestry Tasmania data are of this type)
 - a *person-visit*: recorded when a person visits a protected area for the first time or on the first day of the stay
- This terminology was recommended by the ANZECC Benchmarking and Best Practice Program, *National Data Standards on Protected Areas Visitation* (Victorian National Parks Service, September 1996).
- b. Estimates based on annual Tasmanian Visitor Survey; includes only interstate and overseas visitors aged 15 years and over
 - c. Only walkers registering at main carpark.
 - d. Preliminary estimates from pilot survey.
 - e. Accuracy of these data is uncertain.
 - f. No visitor numbers collected or available for periods indicated by "No data".

6.4 Cultural, social and spiritual needs and values

This sub-criterion monitors the extent of land under management regimes to protect both Indigenous peoples' values associated with forests and non-Indigenous peoples' cultural values on forests.

6.4.a (i) AREA AND PERCENT OF FOREST LAND IN DEFINED TENURES, MANAGEMENT REGIMES AND ZONINGS WHICH ARE FORMALLY MANAGED IN A MANNER WHICH PROTECT INDIGENOUS PEOPLES' CULTURAL, SOCIAL, RELIGIOUS AND SPIRITUAL VALUES, INCLUDING NON-CONSUMPTIVE APPRECIATION OF COUNTRY

This Indicator reports on the extent of public and Aboriginal land that is specifically dedicated to the management of Aboriginal heritage values.

The *Aboriginal Lands Act 1995* provides for the transfer of specified areas of Crown land to the Aboriginal community. This Act established the Aboriginal Land Council of Tasmania as a statutory body to hold and manage land on behalf of the Aboriginal community in perpetuity.

Since 1998, thirteen areas of land have been transferred to the Aboriginal Land Council of Tasmania, Oyster Cove, Mount Cameron West, Steep (Head) Island, Mount Chappell Island, Kutikina Cave, Ballawinne Cave, Wargata Mina Cave, Badger Island, Babel Island, Great (Big) Dog Island, Risdon Cove, Cape Barren Island (part) and Wybalenna.

All forest land on all tenures is subject to the *Aboriginal Relics Act*. This means, “no person shall, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director,

- a) destroy, damage, conceal, or otherwise interfere with a relic;
- b) make a copy or replica of a carving or engraving that is a relic by rubbing, tracing, or other means, that involves direct contact with the carving or engraving; or
- c) remove a relic from the place where it is found or abandoned”

In addition, the *National Parks and Reserved Lands Regulations 1999* make it “an offence without authority to remove, damage, deface or disturb any Aboriginal relic or object of archaeological interest”.

For all public reserve categories listed in Schedule 4 of the *National Parks and Wildlife Act 1970*, the objective is “to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objective”. The management objectives for all reserves under the *National Parks and Wildlife Act* provide for the conservation of Aboriginal heritage values. The Act does not preclude Aboriginal cultural activities on Aboriginal land if these do not adversely effect the flora and fauna.

A program to increase Aboriginal management of Aboriginal values through identifying specific areas has been established under the Tasmanian Wilderness World Heritage Area Management Plan 1999.

In 1996 there were three areas proclaimed as Aboriginal Sites under the *National Parks and Wildlife Act*: Sundown Point (132 ha), Trial Harbour (0.826 ha) and West Point (580 ha). These are also Protected Sites under the *Aboriginal Relics Act*. Under the rationalisation of reserve categories in the

Regional Forest Agreement (Land Classification) Act 1998, the category of Aboriginal Sites was abolished and those lands remaining in this category were reclassified as State Reserves (30 April 1999). This was done in the knowledge that this category afforded equal protection to the sites and Aboriginal heritage material present within them. Furthermore, it was the Government's intention that the subject land would be transferred to Aboriginal ownership. Their Protected Site status remains.

Management objectives for all other reserve categories under the *National Parks and Wildlife Act* provide for the conservation of Aboriginal heritage values and the regulations protect all 'Aboriginal relics' and items of archaeological or historical interest.

Aboriginal heritage sites on public land are progressively being identified, for the purposes of the *Aboriginal Relics Act*, by their listing in the Tasmanian Aboriginal Sites Index. This ensures that the significance of the site is recognised should there be any development proposals or other works.

The *Forestry Act, 1920*, Schedule 3, includes among the objectives for management of Forest Reserves "to conserve sites or areas of cultural significance" and "to encourage cooperative management programs with Aboriginal people in areas of significance to them". All management plans (seven for Tasmania) for State forest include the following two objectives:

- conserve places, sites and features of Aboriginal and other cultural significance; and
- encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with other management practices.

Within State forest, known sites are specifically recognised under management zoning as cultural heritage special management zones. These zones were not reported as part of the RFA. Currently (30 June, 2001) about 7500 hectares of State forest are zoned for cultural heritage special management. Further areas will be zoned when sites are identified.

In addition to special management zones, all known Aboriginal sites in State and private forests are managed by avoidance of impact, as required by the *Aboriginal Relics Act*. Under the Forest Practices Code, there are systems in place in wood-production forests to identify new sites and protect them from any further disturbance.

6.4.a (ii) NUMBER OF PLACES OF NON-INDIGENOUS CULTURAL VALUES IN FORESTS FORMALLY MANAGED TO PROTECT THESE VALUES

This indicator reports on the extent of public land that is specifically dedicated to the management of historic heritage values. These areas are managed for the heritage values that may relate to historic mining or timber-extraction sites, as well as historic tracks, tramways and the like.

Historic sites of significance are protected by formal and informal reserves. In State forest, areas specifically zoned for the management of historic heritage are identified as Special Management Zones for Cultural Heritage. About 112 sites in State forest are specifically managed to protect non-indigenous cultural heritage. These lie within special management zones covering 18 000 hectares.

Individual historic sites on public and private land that are subject to forest practices plans are assessed and managed in accordance with the Forest Practices Code.

Under the *National Parks and Wildlife Act 1970* twenty-eight places are designated Historic Sites (total area – 16 064 hectares of which 4320 hectares are forested). In addition, regulations governing the use of all reserved land under the Act prohibit unauthorised removal, damage, defacement or disturbance of any object or archaeological, historical or scientific interest. A regulation also bans the possession of a metal detector within reserved land (from 22 December 1999). Historic heritage sites within reserved land may be further protected by prescriptions contained within relevant management plans.

Historic heritage sites on public land are progressively being identified through a narrative account representing each place in the Tasmanian Historic Sites Index. The index contains 2378 places on public land not necessarily defined by area and ranging from those that are highly significant in historic heritage terms to some which have not had their significance assessed.

The Tasmanian Heritage Council currently has a small number of properties on public forested land listed on the Tasmanian Heritage Register. Of these about 12 hectares are on land managed by the State Government and approximately 80 hectares on lands administered by Local Government. Any works on these properties require approval from the Tasmanian Heritage Council.

6.5 Employment and community needs

This sub-criterion monitors employment across the forest sector, including forest growing and management, tourism, and forest-product processing. Trends in workforce health, welfare and income are monitored over time.

6.5.a DIRECT EMPLOYMENT IN THE FOREST SECTOR AND FOREST SECTOR EMPLOYMENT AS A PROPORTION OF TOTAL EMPLOYMENT

Employment is an important measure of the forests' contribution to meeting community needs.

Direct employment in manufacturing industries is reported by the Australian Bureau of Statistics (ABS) from an annual survey of manufacturing establishments. In the forestry industry, only employment in the wood industry sectors manufacturing, and paper and paper products manufacturing is reported. Employment in forest management, harvesting, and transport sectors are not reported separately. Thus a comprehensive measurement of employment in the industry as a whole is not available from the published ABS data.

Table 6.5a.1 shows the number of people directly employed in the two reported forest-industry sectors from 1995-1996 to 1999-2000. Data from 2000-2001 is not yet publicly available from ABS.

Table 6.5.a.1 Direct employment in selected forest industry sectors

ANZSIC ^a	Description of Industry	1995-96	1996-97	1997-98	1998-99	1999-00
231	Log Sawmilling and Timber Dressing	1704	1704	1716	1570	1755
2311	Log sawmilling	738	546	np	464	441
2312	Wood chipping	287	368	np	344	362
2313	Timber resawing and dressing	680	790	846	761	953
232	Other Wood Product Manufacturing	np^b	np^{ab}	629	602	np^b
2323	Wooden structural component	384	350	346	339	353
2329	Wood product manufacturing – not classified elsewhere	149	64	69	55	70
233	Paper and Paper Product Manufacturing	np^b	np^b	1370	1107	np^b
2331	Pulp, paper and paperboard	1393	1373	np	986	953
023	Total Wood and Paper Products	3958	3824	3715	3279	3639

Source: ABS Catalogue Number 8221.6, with updates provided by ABS

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

^b np = not available from ABS for separate publication

Table 6.5.a.2 shows the contribution of the forest manufacturing industries to overall employment in the manufacturing sector in Tasmania, and to employment in Tasmania as a whole. Data from 2000-2001 is not yet publicly available from ABS.

Table 6.5.a.2 Employment in wood and paper products as a percentage of total manufacturing and total Tasmanian employment

Year	Total Employment in Tasmania ('000)	Total Manufacturing Employment ('000)	Total Wood & Paper Products Employment ('000)	Wood and paper products manufacturing employment as a % of total manufacturing	Wood and paper products manufacturing employment as a % of total employment
1995–96	201.4	22.5	4.0	17.8	2.0
1996–97	197.4	21.5	3.8	17.7	1.9
1997–98	195.3	20.7	3.7	17.9	1.9
1998–99	195.3	20.1	3.3	16.3	1.7
1999–00	198.8	20.2	3.6	17.8	1.8

Source: ABS Catalogue Number 8221.6 with updates provided by ABS

The wood and paper products manufacturing industry directly employs more than 3600 people in Tasmania. In 1999-2000 this represented nearly eighteen percent of the total surveyed manufacturing sector employment of 20 200 people, ranking second in size to the food, beverage and tobacco manufacturing sector. The data indicate a small decline in total wood and paper products manufacturing employment over the five-year period, which parallels the overall decline in Tasmanian manufacturing employment in the period. Employment in the log sawmilling sector has also remained relatively stable over the period, with an unexplained large fall in 1998-99 followed by a recovery to previous levels the following year.

In order to gain a better picture of employment in the forestry sector, Agriculture, Fisheries and Forestry Australia commissioned the Australian Bureau of Agricultural Research Economics to undertake two reports.

Yainshet and Grist (2001) provide information on direct and indirect employment in each State and Territory in the forestry sector compiled from ABS data (as reported above), and in the non-wood forest industries from a variety of sources. They present data for only 1998-99.

Grist, Tran and Ball (2000) conducted a pilot exercise in Tasmania to assess the feasibility of addressing Montreal Indicator 6.3a (Investment in the Forest Sector). As part of this study, they also surveyed employment data.

Yainshet and Grist (2001) provide the equivalent data presented in Table 6.5a.1 for direct employment in forest-based industries. However, they also provide data for employment in the Forestry and Logging sector of 2 600 (rounded), giving a total direct employment of 6 000 in 1998-99. These data do not include the transport sector.

Yainshet and Grist (2001) also provide estimates of indirect employment in the forest-based industries. For Tasmania an employment multiplier of 1.44 at the State level and 2.24 at the national level is estimated. This implies that the 6000 jobs in the Tasmanian forest industry in 1998-99 provided 2640 additional jobs in the Tasmanian economy and 7440 additional jobs nationally.

Yainshet and Grist (2001) attempt to provide estimates on employment in selected non-wood forest contact industries – beekeeping, tourism and grazing. They acknowledge the difficulties of obtaining accurate data. They estimate that in Tasmania 74 people (full-time equivalents) were employed in beekeeping. No reliable estimates for forest-based tourism or grazing were provided for Tasmania.

Grist, Tran and Ball (2000) estimated a total of 8259 full-time equivalent workers were employed in the Tasmanian forest sector in 1999-2000 (see Table 6.5.a.3 below). The authors also conclude that:

- most of those employed (just under two-thirds) were full-time employees. A further 20 per cent were contractors, 11 per cent were casual, and 3 per cent were part-time employees;
- harvesting and plantation establishment contractors represented approximately 34 per cent of total employment in the forest sector;
- forest growing and sawmilling were also significant employers, representing a further 30 per cent and 21 per cent of total employment respectively; and
- the remaining share of employment was fairly evenly distributed between the other business activities.

Table 6.5.a.3: Employment in the Tasmanian forest sector, 1999-2000 (Number of employees)

Industry Description	Full time		Part time		Casual		Contracts		Total	
	▽	SE	▽	SE	▽	SE	▽	SE	▽	SE
Forest growers	1115	(34)	29	(41)	81	(26)	1 267	(49)	2492	(29)
Forest management	114	(21)	27	(55)	300	(30)	76	(39)	517	(19)
Harvesting and plantation establishment contractors	2142	(23)	68	(28)	366	(47)	213	(27)	2788	(19)
Pulp, paper and panel manufacturers	203	(29)	-	-	12	(50)	-	-	215	(28)
Sawmills	1544	(18)	50	(35)	50	(33)	107	(40)	1750	(17)
Craftwood industries	58	(20)	-	-	-	-	-	-	58	(20)
Secondary processors	152	(50)	-	-	26	(63)	-	-	178	(44)
Tourism & recreation operators	79	(52)	18	(36)	62	(53)	-	-	158	(33)
Other forest-contact industries	24	(45)	50	(63)	29	(40)	-	-	102	(35)
All business categories	5430	(13)	242	(19)	924	(22)	1 662	(38)	8259	(12)

Source: Grist, Tran and Ball 2000

Note: Figures in parentheses are relative standard errors.

Forest product transport operators were again not included in the data. Results vary from the reported ABS data for a number of reasons. It is likely that this survey was more intensive than that conducted by ABS. The authors advise that the total employment number presented should be treated with some caution, as there is likely to be some double-counting.

References

Grist, P., Tran, Q.T. and Ball, A. (2000) *Sustainability Indicator 6.3a – Survey of the value of investment in forest industries in Tasmania*. Report by ABARE for Agriculture, Fisheries and Forestry Australia and the Montreal Process Implementation Group.

Yainshet, A. and Grist, P. (2001) *Sustainability Indicator 6.5a – Direct and indirect employment in the forest sector*. Report by ABARE for Agriculture, Fisheries and Forestry Australia and the Montreal Process Implementation Group.

6.5.b AVERAGE WAGE RATES AND INJURY RATES IN MAJOR EMPLOYMENT CATEGORIES WITHIN THE FOREST SECTOR

A sustainable industry will ensure high levels of workforce health and welfare and wage rates comparable with other industries.

Wage rates

The only published data relating to wages in selected parts of the forestry sector are those published by the Australian Bureau of Statistics (Catalogue Number 8221.6). They are presented in Table 6.5.b.1 below:

Table 6.5.b.1 Forest Industry Annual Salaries and Wages (\$million)

ANZSIC ^a	Description of Industry	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00
231	Log Sawmilling and Timber Dressing	60.5	51.0	54.5	53.4	53.8	56.2
2311	Log sawmilling	22.8	np ^b	13.5	np ^b	np ^b	np ^b
2312	Wood chipping	np ^b	np ^b	15.2	np ^a	np ^a	np ^a
2313	Timber resawing and dressing	np ^b	19.7	25.8	26.5	24.8	28.4
232	Other Wood Product Manufacturing	np^b	np^b	np^b	np^b	np^b	np^b
2323	Wooden structural component	4.9	7.6	7.4	6.8	8.0	7.6
2329	Wood product manufacturing not elsewhere classified	2.9	3.0	1.0	0.8	0.7	1.0
233	Paper and Paper Product Manufacturing	np^b	np^b	np^b	np^b	np^b	np^b
2331	Pulp, paper and paperboard	np	np	np	np	np	Np
023	Total Wood and Paper Products	143.4	146.0	152.0	138.3	148.4	144.1

Source: ABS Catalogue Number 8221.6 with updates provided by ABS

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

^b np = not available from ABS for separate publication

The data do not adequately address the indicator, as they provide only total wages and salaries paid, not wage rates (\$ per employee). As can be seen in the table, there are inexplicable variations in the data, for example in the total wages for 1997-1998, which cast doubts on their accuracy and make any conclusions on trends difficult. Unless better data become available, this element of the Indicator should not be reported upon in this way in future.

In an attempt to provide more useful data for this indicator some sample wage rates for a variety of positions under relevant industrial awards in Tasmania have been collated.

Table 6.5b.2 Salary/Wage rates in selected forestry occupations

Award/Position	Wage/Salary 30/6/96	Salary 30/6/01	% Change
Chainsaw Operator Level 3 (maintains own equipment) Timber and Allied Industries Award	\$387.60/wk	\$452.60/wk	16.8%
Sawmill Worker Level 2 Timber and Allied Industries Award	\$365.00/wk	\$430.00/wk	17.8%
Forest Officer Level 9 Technical Forester (Forestry Tasmania Agreement)	\$35,273 pa	\$40,518 pa	14.8%
Forest Officer Level 22 Senior Manager (Forestry Tasmania Agreement)	\$57,61 pa	\$66,234 pa	14.9%
Level 6 Senior Ranger (Parks and Wildlife Officers Service Agreement 1996)	\$47,034 pa (includes 31% loading)	\$56,127 pa (includes 31% loading)	19.3%
District Manager (Administrative and Clerical Officers Agreement)	\$51,998 pa	\$61,834 pa	18.9%

Source: Workplace Standards Tasmania, Forestry Tasmania, and the Department of Primary Industries, Water and Environment

Injury Rates

Workplace Safety Tasmania reports the Injury Frequency Rate for Tasmanian industries against the ABS industry codes. Tables 6.5.b.3 and 6.5.b.4 provide data on the Injury Frequency Rate and Fatality Frequency Rate for selected forest industry sectors from 1994 to 2001.

Table 6.5.b.3 Injury Frequency Rate (number of claims per million hours worked)

ANZSIC ^a	Description of Industry	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01
030	Forestry and Logging	78.6	76.4	82.9	65.0	56.1	52.3	47.7
231	Log Sawmilling and Timber Dressing	283.9	255.5	145.2	201.0	124.3	180.4	195.8
232	Other Wood-Product Manufacturing	198.2	221.2	98.9	57.1	110.5	63.4	53.8
233	Paper and Paper-Product Manufacturing	58.3	72.1	79.6	80.5	51.8	76.2	59.3

Source: Workplace Standards Tasmania

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

Table 6.5.b.4 Fatality Frequency Rate (number of fatalities per million hours worked)

ANZSIC ^a	Description of Industry	1994–95	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01
030	Forestry and Logging	0.40 (2) ^b	0.23 (1) ^b	0.64 (2) ^b	0.49 (2) ^b	0.40(2) ^b	0.22(1) ^b	0.23(1) ^b
231	Log Sawmilling and Timber Dressing	nil	nil	0.51(2) ^b	nil	nil	nil	nil
232	Other Wood-Product Manufacturing	nil	nil	nil	nil	nil	nil	nil
233	Paper and Paper-Product Manufacturing	nil	nil	nil	nil	nil	nil	nil

Source: Workplace Standards Tasmania

^a ANZSIC = Australian and New Zealand Standard Industrial Classification

^b Figures in brackets indicate the actual number of fatalities

The Injury Frequency Rate (also known as All Claims Frequency Rate) is measured as the number of workers' compensation claims reported in any given year divided by the number of hours worked during the same year multiplied by one million.

The number of workers' compensation claims reported is extracted from WorkCover Tasmania's statistical collection on workers' compensation. As the collection covers only injuries that result in a claim being lodged by a worker, the frequency rate of injuries would be underestimated.

The number of hours worked is sourced from the Australian Bureau of Statistics.

Caution must be exercised when interpreting the Injury Frequency Rates for Other Wood-product Manufacturing, as this sector is relatively small and the number of hours worked has a high relative standard error (RSE): 45%, whereas the other sectors shown in this table that have an RSE of 25%.

The data indicate that the Injury Frequency Rate in the Forestry and Logging Sector has substantially decreased during the period. This decrease may be due in part to a number of factors including the emphasis placed on safety management by forestry companies, and also to the increasing mechanisation of forest operations.

Rates in the sawmilling and wood-product manufacturing show considerable annual variations, but there is a trend to substantially lower frequency rates in recent years.

Fatalities in the forestry and logging sector continue every year, albeit at a low frequency. Other sectors have maintained a zero fatality rate for the past five years.

6.6 Indigenous participation and management

This sub-criterion measures the extent to which indigenous people participate in forest management.

6.6.a EXTENT TO WHICH THE MANAGEMENT FRAMEWORK MAINTAINS AND ENHANCES INDIGENOUS VALUES INCLUDING CUSTOMARY, TRADITIONAL AND NATIVE TITLE USE BY INDIGENOUS PEOPLES AND FOR INDIGENOUS PARTICIPATION IN FOREST MANAGEMENT

The Aboriginal Heritage Section in the Department of Primary Industries, Water and Environment (DPIWE), has a full-time staff of three plus two fixed-term project officers. One of their duties is to oversee the survey and management of Aboriginal heritage sites (within reserved land and other lands). Close liaison is maintained with field staff of the department, the Tasmanian Aboriginal Land Council (TALC), the Office of Aboriginal Affairs, the Aboriginal and Torres Strait Islander Commission and Aboriginal community groups. The policy of the DPIWE is to seek advice from TALC on issues affecting Aboriginal sites and values, including permits issued under the *Aboriginal Relics Act 1975*.

Within reserves under the *National Parks and Wildlife Act 1970*, sites of Aboriginal heritage significance are generally fully protected and, where appropriate, interpreted. If a proposed use entails the disturbance or destruction of sites, detailed assessments must be made and Aboriginal community groups must be consulted before decisions are made. Increasingly, specific provisions are being included in reserve management plans to provide for direct Aboriginal involvement in management, particularly of identified areas (such as caves, sites and landscapes) and to improve consultation and cooperative approaches to management. Within the World Heritage Area, the Department of Primary Industries, Water and Environment has a partnership arrangement with the Aboriginal community. This involves cross-cultural training, interpretation of Aboriginal values, involvement in fire management (including on-ground fire management and developing the burning program) and development of a policy for cultural materials use. It also involves identifying areas of interest to the Aboriginal community and proposing the community's level of involvement in the management of these areas.

The *Coroners Act 1995* establishes the rights of Aboriginal people to deal with Aboriginal burials. The *Living Marine Resources Management Act 1995* provides for Aboriginal cultural activities in managing living marine resources.

A full-time permanent Aboriginal Heritage Officer position is funded by the forest industry in the Forest Practices Board. This officer is responsible for surveying and managing sites in wood-production forests. Together with the Tasmanian Aboriginal Land Council, the officer liaises on operational matters. Indigenous heritage values are managed within the Forest Practices Plans in accordance with the provisions of the Forest Practices Code. This involves identifying Aboriginal sites, making use of the archaeological potential zoning system in State forest and the predictive statements on private land. All operational areas, regardless of tenure, that have areas designated as likely to contain Aboriginal sites are assessed. Identified sites are protected by buffer zones and are clearly marked in the field. Site data are processed by the Forest Practices Board and forwarded to the Cultural Heritage Branch at DPIWE for inclusion on the Tasmanian Aboriginal Site Index.

Management planning has been improved by the development of predictive statements in the revised Forest Practices Code 2000 that ensure that private land is assessed for Aboriginal heritage values as part of operational planning. Procedures for the management of Aboriginal sites within wood production forests are being prepared as a basis for consultation with representative Aboriginal organisations. There are specific prescriptions in all Forestry Tasmania forest management plans for developing cooperative management arrangements with the Tasmanian Aboriginal community. Communication between Forestry Tasmania and the broader Aboriginal community has progressed by a forum, field days and site visits.

CRITERION 7: INSTITUTIONAL AND ECONOMIC FRAMEWORK FOR FOREST CONSERVATION AND SUSTAINABLE MANAGEMENT

This criterion and associated indicators relate to the overall policy framework that assists in the conservation and sustainable management of forests. It includes the broader societal conditions and processes often external to the forest itself but which may support efforts to conserve, maintain or enhance one or more of the conditions, attributes, functions and benefits captured in criteria 1-6.

7.1 Extent to which the legal framework (laws, regulations, guidelines) supports the conservation and sustainable management of forests, including the extent to which it:

7.1.a PROVIDES MECHANISMS TO CLARIFY PROPERTY RIGHTS AND ESTABLISH APPROPRIATE LAND TENURE ARRANGEMENTS THAT RECOGNISE TRADITIONAL MANAGEMENT PRACTICES AND SELF MANAGEMENT AS WELL AS THE EXISTENCE OF NATIVE TITLE AND THE CUSTOMARY AND TRADITIONAL RIGHTS OF INDIGENOUS PEOPLES

The *Aboriginal Lands Act 1995* provides for the transfer of specified areas of Crown land to the Aboriginal community. This Act established the Aboriginal Land Council of Tasmania as a statutory body to hold and manage land on behalf of the Aboriginal community in perpetuity.

Since 1998, thirteen areas of land have been transferred to the Aboriginal Land Council of Tasmania: Oyster Cove, Mount Cameron West, Steep (Head) Island, Mount Chappell Island, Kutikina Cave, Ballawinne Cave, Wargata Mina Cave, Badger Island, Babel Island, Great (Big) Dog Island, Risdon Cove, Cape Barren Island (part) and Wybalenna. Many of these areas are not forested.

In November 1999, the Government introduced amendments to the *Aboriginal Lands Act* to enable a further eight areas of Crown land on Cape Barren Island, Clarke Island, Vansittart Island, Little Dog Island, Goose Island, West Point Aboriginal Site, Sundown Point Aboriginal Site and Trial Harbour Aboriginal Site to be transferred to the Aboriginal Land Council of Tasmania; however, the amendments were not passed by Parliament.

Before the amending legislation was introduced, the Tasmanian Government had the Commonwealth Government's in-principle support to amend the Comprehensive, Adequate and Representative (CAR) reserves system by the removing the reserves at West Point, Sundown Point, Trial Harbour, Clarke Island, Little Dog Island and Goose Island. The Aboriginal Land Council of Tasmania has indicated an intention to declare such sites Indigenous Protected Areas should the land be transferred to it.

The rights of the Aboriginal community to take resources for cultural reasons are recognised by the *Living Marine Resources Act 1995* (sections 3,10(1), 60 and 215), which allows Aboriginal people to take marine resources for traditional purposes. The *Aboriginal Lands Act* provides the Aboriginal community with the right to use and sustainably manage Aboriginal land and its natural resources in a manner that is consistent with the *National Parks and Wildlife Act 1970*. In addition, cultural mutton

birding activities are carried out under a permit system administered by the Department of Primary Industries, Water and Environment.

In accordance with the RFA, the Tasmanian Government is committed to completing management plans under the *National Parks and Wildlife Act* as part of the long-term commitment to manage the CAR reserve system in an ecologically sustainable manner. Plans have been completed or are under way for all National Parks, but were put on hold for Mount William and Rocky Cape pending developments with the Federal Government's Reconciliation package. Management Plans will be prepared for these National Parks. The Government is considering developing a partnership agreement with the Aboriginal community (including the Aboriginal Land Council of Tasmania) to involve the Aboriginal community in aspects of park management of particular significance to the community.

7.1.b PROVIDES FOR PERIODIC FOREST-RELATED PLANNING, ASSESSMENT AND POLICY REVIEW THAT RECOGNISES THE RANGE OF FOREST VALUES, INCLUDING COORDINATION WITH RELEVANT SECTORS

Planning

The Tasmanian Resource Management and Planning System is the framework for managing land use in Tasmania. It provides for a development and control planning system mediated by local government and for specific statutes to manage the interests of different sectors in Tasmanian forests.

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires approval from the Commonwealth Environment Minister for actions that are likely to have a significant impact on matters of national environmental significance, with the exception of forestry operations undertaken in accordance with an RFA. This exception does not apply to forestry operations in a World Heritage property or (RAMSAR) wetland, or that are incidental to another action whose primary purpose does not relate to forestry. The EPBC Act also provides for the conservation of biodiversity on Commonwealth land in Tasmania.

At a strategic level the Forests and Forest Industry Strategy and the Regional Forest Agreement provide the direction and context for the forest industry in Tasmania. The *Forestry Act 1920* and *Forest Practices Act 1985* together provide for a hierarchy of plans, which create the planning framework for forestry operations in Tasmania at a tactical and operational level. Under the *Forestry Act 1920*, Forestry Tasmania may prepare forest management plans for any area of State forest including forest reserves. Since 2000 all State forest has been covered by forest management plans. These plans give policy direction for the management of State forest, and are reviewed annually. The plans apply for periods up to ten years.

A Management Decision Classification system provides a zoning overlay on State forest and enables particular values to be identified and appropriate management prescriptions to be put in place. This system is updated regularly to take account of new values as they are found.

The *Forest Practices Act 1985* requires the preparation of three-year plans for both public and private land. These plans are used by local government to ensure that forestry operations are well dispersed in time and space and do not have undue impacts on catchments and regional infrastructure.

The Forest Practices Code provides the operational framework for the planning of forest operations, which include roading, harvesting, reforestation and associated works. Operational plans, known as Forest Practices Plans, must be prepared at a coupe level on both public and private land in accordance with the Forest Practices Code. Under the Code, detailed assessments must be made of natural and cultural values such as flora, fauna, geomorphology, cultural heritage, soils, water and visual landscape. Procedures for assessing these values are detailed in the specialist manuals and planning tools that complement the Forest Practices Code.

The *National Parks and Wildlife Act 1970* and the *Forestry Act 1920* provide for management plans and a planning process for reserves proclaimed under the respective Acts. A Reserve Management Code of Practice has been drafted to ensure a consistent approach to best-practice management of reserves and their component values.

Together these systems provide the basis for planning all activities on public forest and harvested private forests. The various Acts provide for the management of wood and non-wood values ranging from wilderness and recreation values through to biodiversity, cultural heritage and timber resources.

There are various statutory overlays that provide for planning the management of values such as minerals and water, including where they occur in Tasmanian forests. They include water-management planning (*Water Management Act 1999*), mineral exploration (*Mineral Resources Development Act 1995* and *Mineral Exploration Code of Practice*), wildlife management plans (*National Parks and Wildlife Act*) and threatened species recovery plans (*Threatened Species Protection Act 1995*).

Planning requires that the condition of the environment and in the status of resources is monitored. Australia, as a signatory to the Montreal Process, has adopted the Montreal Process Criteria and Indicators as a basis for assessing the sustainability of forest management at the national and regional levels. The Tasmanian and Commonwealth governments subsequently agreed to a set of sustainability indicators, based on the Montreal Process Criteria and Indicators, to be assessed as part of the five-year review of progress with implementation of the RFA. They form the basis of this report.

Assessment

Forestry Tasmania and Private Forests Tasmania maintain inventories of forestry resources on both the public and private estates. Assessments of these resources are regularly updated with rolling programs of photo-interpreted type-mapping and field surveys.

Since November 1996 Forestry Tasmania has reviewed the eucalypt sawlog resource (on State forest), assessed the deep red myrtle sawlog resource and reviewed the blackwood sawlog resource.

The Department of Primary Industries Water and Environment is close to completing a program to remap all forest (and other) communities at a Statewide level (TasVeg 2000)

These data contribute to a system that provides for the reporting of changes in the vegetation of forest vegetation communities by biogeographic region (as discussed under Indicator 1.1.c).

Policy

The main policy instruments relating to forests at the national level are the National Forest Policy Statement (1992), the National Biodiversity Strategy (1996), and the Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System for Forests in Australia (1997).

At the State level, the Forests and Forest Industry Strategy and the Regional Forest Agreement provide the formal policy directing the forest industry in Tasmania. These are complemented by the Policy on the Permanent Forest Estate, Threatened Species Strategy and draft Nature Conservation Strategy. A Natural Resource Management Framework 2002 provides a policy framework to integrate forest management with other aspects of natural resource management in Tasmania.

Other Tasmanian strategies or policies of relevance to forests are on weed management, fire management, cultural heritage, management of tall trees, recreation and tourism.

Table 7.1.c.1 details the policy instruments, assessments and plans relevant to forests in 2001 and also details the process for review (statutory or administrative) and the timeframe for the review (ongoing, annually, five-yearly, periodically).

Since 1996, a number of policy changes affecting forest practices were given effect through amendments to the *Forest Practices Act 1985*. They included amendments to ensure the Forest Practices Code covers all tree clearing, both commercial and non-commercial, on all land tenures.

7.1.c PROVIDES OPPORTUNITIES FOR PUBLIC PARTICIPATION IN PUBLIC POLICY AND DECISION-MAKING RELATED TO FORESTS AND PUBLIC ACCESS TO INFORMATION

Indicator 7.1.b describes the public policy and decision-making processes in place for Tasmania's forests; Indicator 7.1.c describes the opportunities for the public to participate in these processes.

The Regional Forest Agreement was prepared through an exhaustive process of public consultation mediated by the Resource Planning and Development Commission (RPDC). There was extensive stakeholder involvement, with opportunity for public comment on background reports and draft recommendations. Formal public hearings were held before the Governments considered the recommendations. The Agreement prescribes a process for public input into the five-yearly reviews of progress with implementing the RFA.

In 1999 the planning system for reserves under the *National Parks and Wildlife Act 1970* was amended to provide a further avenue for public comment through the RPDC. Draft management plans released by the Director of National Parks and Wildlife are submitted, together with any representations from the public, to the Commission, which releases a report for public comment, may hold hearings on the comments and then makes recommendations to the Minister on changes to the draft plan.

The *Forestry Act 1920* includes a statutory process for public comment on draft forest management plans and their subsequent approval.

During 1999-2000, an amended draft Forest Practices Code was released for a three-month period of public submissions. Over 70 submissions were received and reviewed as part of the finalisation of the new Code. Amongst other things, the new Code provides for notifying of neighbours and local government before forestry operations begin as a means of facilitating consultation during the planning stages of the operations. The new Code also provides for public access to the information in the Forest Practices Plans.

In addition the Tasmanian *Freedom of Information Act 1991* provides for public access to information from Government, subject to the normal constraints defined in the legislation. The Land Information System Tasmania (LIST) provides direct Internet access to substantial quantities of natural resource and other land-related information relevant to forests.

A number of the measures described in 7.1.b above also provide the opportunity for the public to participate in developing public policy and making decisions related to forests.

Table 7.1.c.1 details the opportunity for the public to participate in reviews of policies, codes and plans.

Table 7.1.c.1 Policy instruments, codes and plans; public participation in review

Policy/Planning/Assessment Instrument	Statutory Review Yes/No	Review Period	Process for Public Input	Available to the Public
National Forest Policy	No	Not defined	Yes	Yes
National Biodiversity Strategy	No	Not defined	Yes	Yes
Forest and Forests Industry Strategy	No	Five yearly (clause 56-RFA)	Yes	Yes
Permanent Forest Estate	No	As required	Through consultation with key stakeholder groups	Yes
Regional Forest Agreement	Yes	Every five years; major review at 20 years	Clauses 45 to 47 of the RFA	Yes
Threatened Species Strategy	Yes	Every 10 years	Draft released for public comment	Yes
Draft Nature Conservation Strategy	No	N/A	Yes	
Draft Natural Resource Management Framework	Yes	Every five years	Draft released for public comment	Yes
Forest Practices Code	Act provides for revision.	Every five years as part of RFA	Yes	Yes
Draft Reserve Management Code of Practice	Yes	Every five years	Draft released for period of public comment	Yes
Code of Practice for Mineral Exploration	Yes	Every five years	Yes	Yes
Forest Management Plans	Yes	Annual reviews; major review at 10 years	Draft released for public comment	Yes
Three-Year Wood Production Plans	Yes	Annual	Through consultation with local government	Yes
Forest Practices Plans	Not relevant (short-term operational plans)		Through notification and consultation with neighbours and local government.	Yes
Reserve Management Plans NPW Act	Yes	5 to 10 years	Drafts released for public comment after consultation with stakeholders. RPDC receives public comment and makes recommendations to the Minister	Yes
Recovery plans	Yes	Up to 5 years	Draft advertised, public comment sought within 30 days	Yes

7.1.d ENCOURAGES THE DEVELOPMENT AND APPLICATION OF BEST PRACTICE CODES FOR FOREST MANAGEMENT

The *Forest Practices Act 1985* provides for a legally enforceable Forest Practices Code, which prescribes the manner in which forestry activities are to be conducted so as to provide reasonable protection to the environment. The Code applies to forest practices on all tenures. It is supported by planning manuals and technical guidelines that cover such areas as flora, fauna, geomorphology, soils, cultural heritage, visual landscape, silviculture and fire management. All documents are supported by continuing research and review. The Code was first produced in 1987, and was revised in 1993 and again in 2000. The provisions of the Code are enforced through legally binding Forest Practices Plans, which must be prepared for all harvesting, roading and reforestation activities. Certificates of compliance must be lodged with the Forest Practices Board upon completed implementation of plans.

The forest practices system is continuously reviewed and improved. Several independent thematic reviews have been completed since the RFA was signed:

1. The recommendations of the review of the steep country provisions of the Forest Practices Code, chaired by Dr John Madden, were incorporated in the revised Forest Practices Code.
2. The review of the soil and water provisions of the Code, chaired by Dr Peter Davies, was released for public comment, and the final recommendations were incorporated in the revised Forest Practices Code.
3. An expert panel of safety and industry representatives reviewed the safety aspects of the Code. Its suggestions for changes were incorporated in the revised Code.

In 2000, a draft revised Forest Practices Code was released for public comment. Over 70 submissions were received and considered by the Forest Practices Advisory Council. An amended Code, the Forest Practices Code 2000, took effect on 1 January 2001.

The Forest Practices Board is committed to regularly reviewing and revising the Code and its supporting documents. The Board intends to seek amendment to the *Forest Practices Act 1985* to prescribe a review period of at least once every five years.

A draft Reserve Management Code of Practice has been prepared and released for public comment. It is expected to be finalised in 2002. This Code will provide a framework for the management of all reserved land, except marine reserves and private reserves. For these exceptions the Code may be brought into force through a relevant management agreement or management plan.

7.1.e PROVIDES FOR THE MANAGEMENT OF ENVIRONMENTAL, CULTURAL, SOCIAL AND/OR SCIENTIFIC VALUES IN FORESTS AND ENSURES THE PARTICIPATION OF INDIGENOUS PEOPLES IN ALL ASPECTS OF FOREST PLANNING AND MANAGEMENT PROCESSES

Under the *National Parks and Wildlife Act 1970*, the Department of Primary Industries, Water and Environment is responsible for the protecting fauna on all land, and flora only on land administered by the department. Section 6 of the *National Parks and Wildlife Act 1970* gives the Director of National Parks and Wildlife responsibility for keeping under review the setting-aside of land for conservation purposes (including the conservation of flora and fauna). In addition, the Director has responsibilities to foster conservation on all land in Tasmania. Through the *Wildlife Regulations 1999* the Act also gives the Director of National Parks and Wildlife power to protect flora outside reserves. No protected plants have, however, been prescribed to date.

Under the *Forestry Act 1920*, Forestry Tasmania must optimise the benefits to the State and the public of the non-wood values of State forest. Zoning in the Management Decision Classification system enables areas with particular values to be identified and managed to protect, maintain and enhance these values.

The *Forest Practices Act 1985* requires the preparation of a forest practices plan in accordance with the Forest Practices Code for all forestry operations on public and private land. Under the Code, formal assessments must be made to ensure the protection of flora, fauna, geomorphology, soils, water, cultural heritage and visual landscape.

The *Threatened Species Protection Act 1995* requires that threats to threatened species be taken into account in planning and implementing forest management. The Act applies to flora and fauna on all land.

The objectives of the Resource Management and Planning System are principally related to sustainable development of natural resources. The system determines the zoning of private land by local government under the *Land Use Planning and Approvals Act 1993*. Land-use zoning determines whether forestry activities are permitted, discretionary or prohibited. Conditions to protect environmental, cultural and social values may be imposed by local government under planning schemes. These decisions can be appealed under the *Resource Management and Planning Appeals Tribunals Act 1993*.

A measure of legal protection is afforded to Aboriginal sites and cultural heritage material through the *Aboriginal Relics Act 1975*. This Act primarily relates to the protection of Aboriginal sites. It does not effectively cover participation in planning and management where those sites are forested areas. The Act is currently under review. Indicator 6.6.a gives further detail.

7.2 Extent to which the institutional framework supports the conservation and sustainable management of forests, including the capacity to:

7.2.a PROVIDE FOR THE PUBLIC'S INVOLVEMENT IN ACTIVITIES AND PUBLIC EDUCATION, AWARENESS AND EXTENSION PROGRAMS, AND MAKE AVAILABLE FOREST-RELATED INFORMATION

Providing for public involvement in government activities is now fundamental to the operation of all Tasmanian agencies. At the peak is the *Tasmania Together* program, through which the Government is committed to developing a shared vision for Tasmania through to the year 2020, and this is reflected in the core business of agencies. The Department of Primary Industries, Water and Environment has a corporate commitment to "involving our customers and stakeholders in the development and implementation of policies and programs". Some of these are locally funded, others receive support from the Commonwealth. Forestry Tasmania is committed to ensuring the sustainable production and delivery of forest goods and services for optimum community benefit, and seeks public support through community sponsorship and development programs.

Details on the legal requirements for public involvement are provided in Indicator 7.1.c, and are not repeated here. The key activities and initiatives of the State's forest management agencies are described below.

Community consultation

The Department of Primary Industries, Water and Environment has established a network of District community consultation committees, which provide community input to strategic District land management. In 2001, 77 people served on the seven committees. A growing role for the committees is the early identification of community concerns and issues to feed into the initial stages of reserve management planning.

The Parks and Wildlife Service also provides support to the (statutory) National Parks and Wildlife Advisory Council and the World Heritage Area Consultative Committee, both of which provide stakeholder input to the Department of Primary Industries, Water and Environment and relevant Ministers.

The *National Parks and Wildlife Act 1970* was amended in 1999 to provide for the establishment of conservation management trusts, which may be established by the Minister to manage any conservation area, nature recreation area or regional reserve. Membership of a Conservation Management Trust will be largely drawn from the community; no Trusts have been established to date.

Forestry Tasmania's three new Community Liaison Officers are an important public point of contact and information on forestry matters and the local projects Forestry Tasmania supports. Across the state, Forestry Tasmania has helped local communities develop walking tracks and picnic areas; partnerships such as these provide a sense of ownership of the local forest areas around the State.

Forestry Tasmania has signed a number of Community Forest Agreements, with groups, including the Tasmanian Traditional and Recreational Land Users Federation, Timber Communities Australia, Tasmanian Farmers and Graziers Association, the Tasmanian Trail, and the Tasmanian Beekeepers' Association. These agreements reinforce the value of working forests for stakeholders beyond the

forest-products industry.

Education

A number of formal programs facilitate public involvement in land management, and also provide public education. These are:

- **WILDCARE Inc**— a community partner organisation with the Parks and Wildlife Service and Resource Management and Conservation in the Department of Primary Industries, Water and Environment. WILDCARE was established in December 1997 and incorporated in August 1998. A joint DPIWE/WILDCARE Board of Management manages WILDCARE. The organisation currently has 2000 community members. Volunteer members have contributed 100 000 hours of assistance and provided \$50 000 in grants to on-ground projects.

Forestry Tasmania and WILDCARE are negotiating a partnership agreement so volunteers can become active participants in on-ground projects in State forests. When implemented, this should expand the membership of this important program; for example, Forestry Tasmania has recently joined the Adopt-a-Track program.

- **Bushcare**— jointly funded by the Tasmanian Government, Commonwealth Government and the Tasmanian community. A team of community facilitators and technical specialists provides support and extension services to the community of landcarers and individual landholders. Bush management plans are prepared for individual properties, using the GIS database and field surveys. Remnant bush is protected through fencing and management. Referrals are also made to the RFA Private Land Reserve Program and other formal covenanting programs.
- **Land for Wildlife**—facilitated through the Bushcare program in Tasmania, Land for Wildlife is a voluntary management program that recognises appropriate habitat/remnant bush management on private land. The area of properties now registered under the scheme in Tasmania is equivalent to the combined size of the State's five smallest National Parks. The Land for Wildlife Scheme has also contributed to assessing environmental management standards for 80 onion producers in the State who wished to meet international management standards.
- **Landcare**— jointly funded by the Tasmanian Government, Commonwealth Government and Tasmanian Community. A team of Landcare facilitators provides encouragement, support and assistance to the community and government to working cooperatively for sustainable land management. Over 300 Landcare groups are currently operating in Tasmania.
- **Conservation Volunteers Australia**— (formerly Australian Trust for Conservation Volunteers) is an independent volunteer organisation operating throughout Australia. Volunteers undertake a wide variety of volunteer environmental work on reserved, public and private land.

Public education and involvement in, and understanding of, management are also fostered through other programs, centres and publications, particularly:

- **Summer Interpretation Program**— a variety of interpretive and educational activities on forest values for visitors to national parks. They include:
 - guided walks on the Tall Trees Walk, Mt Field National Park
 - exploration of Aboriginal forest use, Lake St Clair National Park
 - slide presentations on Tasmania's unique forests (various parks)
 - guided walks and talks Hastings/Cockle Creek (including shingle-splitting demonstrations)

- guided walks in the Enchanted Walk, Cradle Mountain
- guided walks in the forests of Mount Wellington
- **Visitor centres**—include information and interpretation of forest values in their displays. The main centres are at Strahan on the west coast, at Teepookana Huon Pine Discovery Tours, Mt Field, Hastings and Lake St Clair. At the Mt Field Visitor Centre a professionally produced video featuring the forest values of the area is shown in the centre. The Forest and Heritage Centre at Geeveston in the Huon Valley is now joined by the successful Tahune AirWalk and Visitors Centre on the banks of the Huon River. The Forest Eco Centre at Scottsdale, housing an interactive forest interpretation centre and Tasmanian Visitor Information Network outlet, opened in February 2002. Other visitor centres are being developed at the Great Western Tiers and on the east coast at Freycinet.
- **Forest education in schools.** The forest industry and Forestry Tasmania have continued to support the Forest Education Foundation (FEF), which develops and delivers school-based educational resources, field experiences for students, and personal development programs for teachers. These cover an understanding of Tasmania's forests, forestry processes, and the use and management of forest resources in Tasmania. FEF works with all sections of the education sector, including students and teachers (Kindergarten–Year 12), curriculum developers, university teacher training and TAFE Tasmania. FEF has two forest education officers in the State (both are qualified, experienced teachers). A recently published Teacher Research Package "Project Forest—Learning About Our Forests", is available to schools. There are two outdoor forest education centres providing residential and day-visit experiences, one in the north and the other in the south of the state. Other State forest areas and industry-related sites are also accessed to support school-based programs and provide field experiences for teachers and students.
- **Websites**—Forestry Tasmania's website www.forestrytas.com.au provides information (including guides) to help visitors make the most of Tasmania's multiple-use forests. Also available is information on wood-production activities; plans for regional development; products and their local and international markets; and technical, scientific and management plans.

The Department of Primary Industries, Water and Environment website www.dpiwe.tas.gov.au has substantial information and educational material on Tasmania's forests. For instance there are pages on:

- Tasmania's cool temperate rainforests
- Native conifers of Tasmania
- Threats to forests (including *Phytophthora* and fire)
- Particular reserves (e.g. Tom Gibson Nature Reserve)
- **Publications**—Forest values are included in publications produced for sale by the Parks and Wildlife Service, although there is no publication solely on forests. Land tenure, vegetation and forest type maps (available from Forestry Tasmania), notesheets, training manuals, education and recreation packages and other free items provide a range of material on forests.

Forestry Tasmania and the Department of Primary Industries, Water and Environment both have extensive libraries, which are open to the public to access forest and reserve information and publications. Forestry Tasmania's library holds forest management plans, reserve management plans, core journal literature (for research on international studies), and silvicultural technical reports detailing Forestry Tasmania's current forestry practices.

General information on forests that is available at all district offices include: *Tassie's Tree Series*, *Focus on Forests*, *Tasforests* and *Forest Health Bulletins*.

- **Training**—The training of secondary and tertiary students, as well as tour operators and specialist ecotourism courses, includes significant components on Tasmania's forests.

Forestry Tasmania and the forest industry generally place many university students in paid vacation programs across the state each summer. Students are usually third and fourth year students enrolled in resource and forestry-based courses. Opportunities are advertised on campus. The work is project-based and is, in some cases, a requirement of the academic program. Students are placed throughout the state and complete real-work projects. In recent years the projects have been based on forest inventory and research.

Forestry Tasmania also supports the Vocational Education and Training in Schools Work Experience program, placing over 30 students each year.

Ecotourism training has recently been expanded to cover most major tourism areas, and notesheets and manuals produced for this will include forest values appropriate to each area.

Volunteers are also currently being trained to deliver conservation and environmental education programs to schools and school camps, on behalf of the DPIWE and in partnership with WILDCARE Inc and Coastcare.

A Forestry Tasmania initiative led to a successful partnership with the Institute of TAFE Tasmania, Drysdale and the Forest Education Foundation, to offer tourism training packages. These will raise service standards for Forestry Tasmania, other forest tourism operators, community groups, and tourism students across the State.

- **Farm Forestry Toolbox**—This is a widely acclaimed computer software package conceived and owned by Private Forests Tasmania, and developed with substantial assistance from forestry organisations, notably Forestry Tasmania. It was funded through four successive grants from the Natural Heritage Trust. It offers farmers and other tree-growers a range of tools—from simple to sophisticated—for planning and managing their forests. About 4000 copies of Version 3 have been distributed free of charge; Version 4 is expected to be released in mid-2002.
- **Interpretive Signs**—Display signs featuring forest values have been placed at several sites in parks and reserves, including:
 - Nelson Falls (Wild Rivers National Park)
 - Lake St Clair's Larmairemener Tabeti Aboriginal cultural walk
 - Liffey Falls State and forest reserves
 - Mt Field National Park (Russell Falls)

At many of the popular forest reserves and visitor sites on State forest, interpretive panels have been devised to explain issues, and give facts on forest types and forest environments. The sites include:

- Arve Forest Drive
- Wielangta Forest Drive
- Evercreech Forest Reserve
- Hollybank Forest
- South Arthur Forest Drive

- Teepookana Huon Pine Experience
- Hastings Forest Drive
- Big Tree Reserve in the Styx Valley.

7.2.b UNDERTAKE AND IMPLEMENT PERIODIC FOREST-RELATED PLANNING, ASSESSMENT AND POLICY REVIEW, INCLUDING CROSS-SECTOR PLANNING AND COORDINATION

Periodic planning, assessment and policy review by the agencies responsible for forest management in Tasmania provide the basis for continuous improvement in the conservation and sustainable management of the forests. This report describes the status of forest-related planning, assessment and policy review in Tasmania, focusing on the changes since 1996.

Forest planning and assessment in Tasmania are largely the responsibility of the relevant landowner. Accordingly, the principal public forest managers - Forestry Tasmania and the Department of Primary Industries, Water and Environment - develop and maintain separate systems to suit their needs. Some larger private forest landowners have developed their own planning systems and Private Forests Tasmania assists private landowners in planning for management of individual properties. Developments in each of these areas are described in more detail.

Forestry Tasmania and the Department of Primary Industries, Water and Environment allocate significant resources at the State (strategic) and at the local (tactical and operational) level to conduct planning and assessment for sustainable forest management as part of their core business. Reports for the 7.1 indicators provide details of the legal framework supporting this planning.

All State forests are covered by forest management plans, all of which have been prepared or revised since 1996 to incorporate RFA outcomes. Substantial progress has been made towards the target of having all land reserved under the *National Parks and Wildlife Act 1970* covered by management plans. The plans take into account relevant State policies and planning, such as the Regional Forest Agreement, the State Coastal Policy and the State Policy on Water Quality Management. All of these plans have nominated durations, after which they require formal revision and reapproval.

Few agency management plans have identified performance indicators and targets. However, Forestry Tasmania periodically reviews the implementation of Forest Management Plans to evaluate their progress and gauge the need for formal revision of the plans.

Forestry Tasmania uses a land zoning system - the Management Decision Classification System - to allocate and document planning priorities in order to achieve the management objectives in forest management plans. All State forest has been zoned. Zones and prescriptions are regularly reviewed and updated, particularly when new information becomes available.

Forest operations on State forest and private property associated with forest establishment and harvesting are required to have Forest Practices Plans prepared and approved. These plans must comply with the Forest Practices Code. The Code requires assessments of the environmental and cultural values present, or likely to be present, in each area. Forestry Tasmania and the industry employ sufficient trained and certified Forest Practices Officers to implement the requirements of the Code.

In recent years, Private Forests Tasmania has encouraged private-forest owners to adopt and implement whole farm planning to improve integration of land use with regional and local planning requirements and the land's capabilities and values. The program is funded by the Natural Heritage Trust.

An independent expert advisory panel assessed and reported on Tasmania's forest management systems and processes in 1996 (PLUC 1996, available at

<http://www.rfa.gov.au/rfa/tas/raa/esfm/final/index.html>). The report provides a comprehensive description of the policy and planning framework in place at that time. Many of the panel's recommendations for improvements were incorporated into the Regional Forest Agreement. Progress in implementing these commitments is reported in the *Report on the Implementation of the Tasmanian Regional Forest Agreement 1997-2002*.

Some recent changes to institutional frameworks have improved in cross-sector planning and coordination at the national level; they include reorganisation of the Ministerial Councils and associated structures. The Council of Australian Governments formed new Ministerial councils on primary industries and natural resource management to strengthen the strategic and coordinated approach to management of all natural resources, including land, vegetation and water, and of the industries that depend upon the sustainable management of these resources. The Ministerial Council changes are outlined at http://www.dpmc.gov.au/docs/coag080601_council_review.cfm. The other major development was the creation of the Forest and Wood Products Council. Similar reorganisations have occurred in the key agencies of Agriculture, Fisheries and Forestry Australia, and Environment Australia.

At the State level, the Department of Primary Industries, Water and Environment (DPIWE) and the Department of Infrastructure, Energy and Resources (DIER) were formed in 1999 to better integrate and coordinate the State's approach to the management of natural resources and development of the industry and infrastructure. DPIWE has reorganised the management of reserves and the delivery of conservation and industry programs to better deliver the Government's objectives. DIER has recently established a new Forest Policy Unit to improve coordination of forest policy advice to the Government across the forestry sector.

The Forests and Forest Industry Council was restructured and new Instruments of Appointment issued by the Minister to establish a broadly based industry council capable of advising the Minister on issues of concern to the sector.

7.2c DEVELOP AND MAINTAIN HUMAN RESOURCE SKILLS ACROSS RELEVANT DISCIPLINES

A wide range of skills and disciplines are essential to implementing sustainable forest management. Forest owners, managers, researchers and regulators need to be well informed on the latest developments. Not every forest manager or forest management organisation will necessarily have all the skills, but they will have access to them within Tasmania. In the training of Forest Practices Officers, Tasmania differs from the other States: the officers gain expertise in environmental management and best forestry practice which then inform their planning or inspection roles.

Skills-development and information-sharing across the forestry sector are recognised as important. Some organisations have developed a skills matrix that includes the core competencies for various work classifications. Where a qualification has an expiry protocol, updates are triggered through organisational training registers. Short training courses, field days, seminars, conferences, meetings, computer-based tools and web sites are used to maintain skills and disseminate information.

Knowledge gains through interaction with the Cooperative Research Centre for Sustainable Production Forestry, which is based at the University of Tasmania, is worth special mention. The Forest Practices Board also plays a leading role in skill development.

Seven key skill areas are identified below:

- **Forest Science and other university degrees relevant to forest management**

Government agencies, the Forest Practices Board and employers in both the forestry and conservation management sectors employ university-educated professionals. Degrees in either Forest Science or Biological Science are the principal requirements. Specialists in soil science, hydrology, archaeology, geography, engineering and tourism are also employed.

- **Forest Practices**

The Forest Practices Board appoints Forest Practices Officers under s.38 and s.39 of the *Forest Practices Act 1985*. These officers are employed by forestry companies and Forestry Tasmania or engaged as consultants to plan, supervise, monitor forest practices and ensure operations comply with the *Forest Practices Act*. The prerequisite qualification for appointment as a Forest Practices Officer is a degree in forestry, equivalent relevant academic qualifications or equivalent technical expertise with at least five year's practical forestry experience.

In addition, applicants must have successfully completed a training course conducted by the Forest Practices Board; it consists of teaching sessions, field trips, practical exercises in various parts of the State, and a formal examination. The training course covers legislation, and implementation of the Forest Practices Code with an emphasis on harvesting, roading and reforestation. Specialist subjects include botany, zoology, soils and water, geomorphology, cultural heritage and visual landscape. Between 1996 and 2001, 103 Forest Practices Officers have completed their training. Periodic refresher courses are obligatory.

- **Technical skills**

Field technical skills for Forestry Tasmania are taught in the Field Forester Training Package, which covers resource management, forest science, forest economics, and business and team-management competencies. Technical training is provided at TAFE and the Hollybank Forest Centre. Until July 2001, the program was Tasmania-specific, but is now available at Certificate IV level across the Australian forestry sector. Forestry Tasmania has sponsored nine graduates from the program since 1996.

National Park rangers are required to obtain a Diploma of Environmental and Cultural Resources (Park Management) at TAFE. Between 1996 and 2001, 6 rangers graduated and a further 15 officers are currently enrolled.

Essential mapping (GIS) skills, including updates, are provided by the software providers (such as ESRI) supplemented by in-house training.

- **Operational skills**

At the operational level, training is provided externally by organisations such as Hollybank, TAFE, and the Transport Industries Skills Centre. Training is also provided in house and on the job by experienced staff who have taken Train the Trainer courses. There is a move towards competency-based training across the sector. Training covers such areas as field supervision, chainsaw operation, four-wheel driving, machinery operation, map reading, trail maintenance, log classification, record-keeping, and introductory forest practices.

However, training in forest practices is variable, and depends on the policy of individual organisations. Many of the larger employers require evidence of training and competence under the organisation's environmental management system, but most of the smaller players, including many landowners, operate without any formal training in forest practices. The Forest Practices Board, in collaboration with the Tasmanian Forest Industries Training Board, is currently reviewing a proposal to improve the level of training and accreditation of forest workers in this important area.

- **Safety/First Aid**

All organisations are required to comply with the requirements of the *Workplace Health and Safety Act 1995*. First-aid training is provided to staff, particularly those who work in the field.

The implementation of safety programs in Tasmania has progressed most in the forestry sector where there was a historical need, and less in the conservation management organisations. However, all organisations either have active safety committees or are establishing them. In the forestry sector, job risk-assessment has been completed in larger organisations and the development of safe working procedures have been developed. A pro-active approach to safety is resulting in continual improvement.

- **Fire management**

All accredited fire-management training conducted in Tasmania is aligned with the national modular system known as the Australian Fire Competencies, shortly to be subsumed within the Public Safety Training Package. Accredited training is conducted through registered training organisations, principally Hollybank Forestry Centre (Forestry Tasmania and Parks and Wildlife Service), the Tasmania Fire Service and TAFE. Competencies have a currency of five

years in most cases, and it is the responsibility of agencies to manage training databases and competency reviews.

- **Visitor services**

For park rangers, visitor management is covered in the Diploma of Park Management, supplemented by on-the-job training. In the forestry sector, visitor services training and skill development were undertaken in house and built up over time by exposure and coaching. Forestry Tasmania is working with TAFE to develop a new program in the light of recent developments such as the Tahune AirWalk.

7.2.e ENFORCE LAWS, REGULATIONS AND GUIDELINES

Reporting for this Indicator is provided for each agency responsible for enforcement of relevant legislation and guidelines.

FOREST PRACTICES BOARD

Monitoring of compliance

General

Supervision and monitoring of the forest practices system is self-regulated by the forest industry and independently monitored by the Board.

Under the principle of self-regulation, Forest Practices Officers are employed by Forestry Tasmania, Private Forests Tasmania, forest companies, cooperatives and engaged as consultants to supervise and monitor forestry operations and ensure that they comply with the *Forest Practices Act 1985*. Many forest managers also formally monitor in-house, often as part of environmental management systems consistent with standards such as ISO 14001.

Formal reporting on compliance is now required under s.25A of the *Forest Practices Act* when Forest Practices Plans are completed.

Independent monitoring is carried out by:

- an annual audit of about 15 percent of all forest practices plans by independent Forest Practices Officers in conjunction with specialist staff of the Board;
- audits of private timber reserves by independent Forest Practices Officers;
- Forest Practices Board staff in the course of routine inspections, assessments of the standard of Forest Practices Officers, and investigations arising from complaints and alleged breaches of the Code; and
- monitoring of natural and cultural values by the Board's specialist staff.

Certification of compliance

Changes to the *Forest Practices Act* from 1 July 1999 introduced a requirement for a certificate of compliance to be lodged with the Board within 30 days after a Forest Practices Plan expires. These certificates must be completed by a Forest Practices Officer and lodged by the person who applied for the Plan. The Board resolved that the new requirement should be phased in, as some existing plans were prepared and approved before the Act was changed.. The requirement to lodge a certificate of compliance will affect all plans certified after 1 July 1999. As most Forest Practices Plans run for three or four years, few compliance certificates have been received to date.

The Board will report on compliance through this process in Annual Reports as from 2000-01.

Independent audit of forest practices plans

In accordance with s.4 of the *Forest Practices Act*, the Board makes an independent audit of a sample of Forest Practices Plans on private property and State forest. The audit is of a random sample, that is stratified to ensure that the activities of all forestry organisations and Forest Practices Officers are sampled. The audit covers plans for forest harvesting, roading, quarrying and site preparation at

various stages of completion. In addition to assessing operational performance, the audit checks the standard of the plan, including all assessments and procedures required by the forest practices system.

Enforcement

The forest practices system relies on the self-motivation of staff and employers, which is achieved by education, training, cooperation and fostering a commitment to sound forest practices. The maintenance of high standards of forest practices is also an essential part of the commercial business of forestry, with international certification and many contractual arrangements dependent upon compliance with the *Forest Practices Act* and Code.

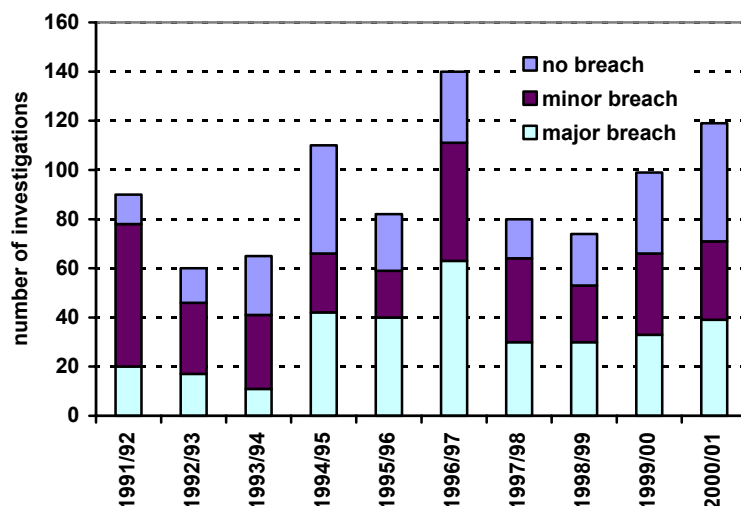
Where problems arise, the Act provides for action to be taken in several ways.

- Forest Practices Officers may give verbal or written notification (under Section 41(1)) to the relevant person that they must comply with the Act or a forest practices plan. Where this notice is not complied with, the officer may issue a second notice (under Section 41(2)) to direct the person/s to cease operations and to ameliorate any damage incurred as a result of the breach. Failure to comply with the second notice may lead to prosecution. Most problems or instances of non-compliance are resolved by the notice system.
- The Board may also prosecute for failure to have operations covered by a Forest Practices Plan (Section 17) or to comply with a Forest practices Plan (Section 21).
- The Board may impose fines as an alternative to prosecution (Section 47B).

The Board investigates all complaints relating to alleged breaches or poor practice. The Board believes that under the principle of self-regulation, all parties have a responsibility to respond to complaints. Wherever possible, the Board asks Forest Practices Officers to investigate alleged breaches and to deal with public complaints. The Board, in consultation with the Director of Public Prosecutions undertakes formal legal investigations of serious breaches.

Data on the investigation of complaints over the last ten years are provided in Figure 7.2.6.1 below. Most of the breaches are reported by Forest Practices Officers or other staff in the forest industry. Complaints received from the public are usually made without sufficient knowledge of the operation or without understanding the Forest Practices Code.

Figure 7.2.e - Summary of investigations by the Forest Practices Board, 1991-2001



FORESTRY TASMANIA

Capacity to enforce laws

In compliance with National Competition Policy reforms, the *Forestry Act 1920* was significantly amended with effect from January 2000. Many sections in the Act were repealed, particularly those sections dealing with “forest offences” and the sales provisions.

There are now no specific offences in the Act relating to the unlawful taking of forest produce. Instead, complaints will now be made to the police in the same manner as if Forestry Tasmania were (say) a private landholder, and charges for theft will be laid and dealt with in the normal way. However, if the “offender” consents to pay an “on the spot” fine (s. 29 of the Act), a formal complaint need not be lodged with the Police.

Other forest-specific offences such as unlawfully interfering with machinery have also been repealed. Three relatively minor offences left in the Act, which are enforced by complaint to the police deal with the contractor’s responsibility to extinguish fire, obey signs and close roads.

DEPARTMENT OF PRIMARY INDUSTRIES, WATER AND ENVIRONMENT

Capacity to enforce laws

Authorised officer training is given to all rangers employed in the Parks and Wildlife Division of DPIWE, including World Heritage Area staff. About 60 field staff have taken this training since 1997. This training covers policing functions and the issuing of infringement notices. A week-long legal procedures course for authorised officers is conducted annually by accredited trainers. All staff must complete this training and renew it every five years. About 25 officers are trained each year.

Authorised officer training is now aligned with the Commonwealth's competency-based standards under the National Qualification Framework to a Certificate IV level in Statutory Government Investigation and Enforcement. Currently Tasmania is the only State to have aligned its competency-based training to the national standards identified by Environment Australia. Four officers have attained this qualification - the only people in the country to have done so. Another seven officers are expected to attain it shortly. Practical field-based support and mentoring, are provided by the core compliance and enforcement staff based in the Hobart and Launceston offices.

Enforcement Activity

Round 68 Rangers in the Parks and Wildlife Service work in field centres around the State. The core unit of six enforcement and compliance officers undertake and monitor all compliance and enforce matters for the Parks and Wildlife Division and the Resources Management and Conservation Division in DPIWE. Table 7.2.e.1 indicates of the amount of enforcement work undertaken by DPIWE field staff.

Table 7.2e - Cautions and Notices issued by DPIWE Field Officers 1996/97 to 2000/01

LEGISLATION	1996-97	1997-98	1998-99	1999-00	2000-01
<i>National Parks and Wildlife Act 1970</i>					
Verbal Cautions	35			1	3
Formal Cautions	9				1
Prosecutions	8			2	3
<i>National Parks and Reserved Land Regulations 1999 and their predecessors</i>					
Verbal Cautions	35	55	51	76	62
Formal Cautions	9	4	29	13	5
Infringement Notices		11	43	131	274
Prosecutions		4	5	28	27
<i>Crown Lands Act 1976</i>					
Verbal Cautions		2	11	18	5
Formal Cautions		4	12	2	
Prosecutions				10	2
<i>Crown Lands (Public Reserves Regulations)</i>					
Verbal Cautions			3	6	
Formal Cautions					
Prosecutions			1		

7.4 Capacity to measure and monitor changes in the conservation and sustainable management of forests, including:

7.4.a AVAILABILITY AND EXTENT OF UP-TO-DATE DATA, STATISTICS AND OTHER INFORMATION IMPORTANT TO MEASURING OR DESCRIBING INDICATORS ASSOCIATED WITH CRITERIA 1-7

By and large adequate data was available for most Indicators for this review. The availability of data and issues for future consideration are summarised in Appendix 7.4.a. Indicators where issues of adequate data remain or where change is warranted are highlighted below.

It has been proposed for vegetation (Indicator 1.1) that RFA forest-type data used for this review be superseded by TASVEG data for the next review. Consideration should also be given to updating from IBRA 4 to IBRA 5 regions for the next review.

A deficiency in indicators 2.1.a and 2.1.d is the relative lack of information on private forests, such as the net area of private-forest land available for timber production and the sustainable yield of sawlogs from private native forest.

Sustainable yields are not calculated separately for public or private plantations (Indicator 2.1.d); however, public plantations are included in sustained yield calculations for all public forest.

Reliable data were not available on treefern harvesting (Indicator 2.1.e) for this review, but legislated procedures are now in place that will ensure there data are available for the next review.

For this review, data on effectively regenerated forest (Indicator 2.1.g) were only available for State forest. The Forest Practices Board has introduced procedures to ensure that data from all tenures are available for the next review. The same procedures will also ensure that the area of plantation effectively established across tenures will be recorded (Indicator 2.1.f).

Forest biomass estimates (Indicator 5.1.a) are preliminary for the present report, but are expected to be greatly improved for the next review.

Available non-wood production data do not discriminate between forest and non-forest sources making the use of this indicator (6.1.b) questionable; its future use should be reviewed.

Visitor estimates (Indicator 6.2.c) are expected to improve with the introduction of a new monitoring system over the next few years.

Comprehensive employment data (Indicator 6.5.a) are not available, which may undervalue the importance of this sector to Tasmania. Efforts should be made to improve the quality of information available for this indicator.

The data on forest industry and wages (Indicator 6.5.b) are variable and do not adequately address the indicator. Their future use should be reviewed.

7.4.b SCOPE, FREQUENCY, AND STATISTICAL RELIABILITY OF FOREST INVENTORIES, ASSESSMENTS, MONITORING, AND OTHER RELEVANT INFORMATION

The completeness, currency and accuracy of forest inventory and monitoring programs are indicators of the adequacy of the information on which forest planning and sustainable management are based.

Tasmania's principal forest inventory and monitoring programs can be summarised as follows:

- All major forest managers routinely map plantation stands, and maintain records of treatment history. Data for plantations on public land are maintained by Forestry Tasmania, while equivalent data for major industrial plantations on private land are collated by Private Forests Tasmania, which also receives some data from smaller landowners. These datasets are the basis of the Tasmanian information summarised in the National Plantation Inventory and National Farm Forestry Inventory.
- Forestry Tasmania's program of photo-interpreted structural forest-typing progressively remaps the whole State on a rolling 20-year cycle at a scale of 1:25 000. Mapping is also updated from ground surveys of harvesting and other forestry operations; Forestry Tasmania maps annual changes on public land; and Private Forests Tasmania collates significant changes on private land. Changes identified by this mapping are used to update RFA forest community and old growth mapping.
- Plantation forests on public land and programs of strategic and pre-harvest inventory routinely measure plantations owned or managed on private land by major industrial companies. Inventory is rare in smaller plantation estates.
- Randomly sampled inventory plots are measured across commercial native-forest types on State forest, and are used as the basis for calculating sustainable yields. Many of these plots are permanent monitoring sites supporting current inventory, growth estimates, and the derivation of growth models. Some large industrial companies make similar inventories. There are no inventories of native forests in conservation reserves, nor on most private land, but estimates from State forest are used for equivalent forest types in adjacent tenures.
- A variety of non-wood values are surveyed before harvest across all tenures, as required by the Forest Practices Code. These surveys aim to identify and protect historic and indigenous heritage sites, geomorphological features, and rare and endangered flora and fauna. Information from these surveys is contributed to State-wide databases for conservation and forest-practices planning.
- Systematic forest health surveys are made of public plantations and some private industrial plantation estates. These annual surveys aim to identify the need for remedial treatments such as pest management, application of fertiliser, and silvicultural operations.
- Population levels of threatened species are monitored periodically by the Threatened Species Unit of the Department of Primary Industries, Water and Environment. Recovery plans for some species require ongoing population surveys. Data from these programs, together with development assessments, academic studies, forest practices surveys, and other studies are collated in the Threatened Species Population Database, which informs the periodic reviews of the status of threatened species.
- To ensure that forest operations such as planting, pruning, and harvesting meet acceptable standards, Forestry Tasmania and some major industrial companies routinely make quality-assurance audits and assessments.

- The achievement of reforestation standards, including stocking, is monitored and supported by lodgement of a certificate of compliance after every Forest Practices Plan ends.
- A 15 per cent stratified sample of Forest Practices Plans across the full range of forest operations on private and public land is audited independently each year. The audit checks 120 specific factors, covering the standard of the plan, forest practices assessments and procedures, and operational performance.
- At the Warra Long Term Ecological Research site, soils, biodiversity, hydrology and their interactions are being monitored to establish baseline measurements and evaluate the impact of forest practices.

Some notable new initiatives achieved or underway since the RFA are:

- A major enhancement of Tasmania's mapping of forest vegetation-communities is almost complete. The new inventory data, known as TASVEG will provide an improved basis for future RFA monitoring, as it has finer spatial resolution and more extensive ground-truthing, includes non-forest communities, and differentiates several extra forest communities. The Department of Primary Industries, Water and Environment plans to periodically update TASVEG.
- Two of Tasmania's most significant land and forest managers - Forestry Tasmania and Gunns Ltd - have developed formal environmental management systems and received ISO14001 certification for the procedures, that cover forest assessment and monitoring activities.
- Amendments to the *Forest Practices Act* in 1999 required the achievement of reforestation standards, including stocking, to be monitored and supported by lodgement of a certificate of compliance.
- Amendments to the *Forest Practices Act* in 1999 require the Forest Practices Board to monitor and report on the maintenance of the Permanent Forest Estate.
- Methods are being developed by the Australian Greenhouse Office, in conjunction with Tasmanian agencies, to make routine inventories of forest biomass for the National Carbon Accounting System.

7.5 Capacity to conduct and apply research and development aimed at improving forest management and delivery of forest goods and services, including:

7.5.a DEVELOPMENT OF SCIENTIFIC UNDERSTANDING OF FOREST ECOSYSTEM CHARACTERISTICS AND FUNCTIONS

Tasmania has a very active program of research into forest ecosystem characteristics and functions. Much of this research is in fields of direct relevance to implementation of the RFA. The main government-sponsored studies are by the Division of Forest Research and Development at Forestry Tasmania, the Nature Conservation Branch at the Department of Primary Industries, Water and Environment and the Forest Practices Board, often in collaboration with universities (Tasmania, Melbourne, Australian National), CSIRO, the Cooperative Research Centre for Sustainable Production Forestry, museums and herbaria.

The main fields of investigation are: taxonomy, ecosystem and geomorphic process, hydrology, soils and nutrient cycling, geomorphology, climate and microclimate, landscape ecology (including effects of disturbance and fragmentation), remote sensing of productivity, population biology, species and community ecology, habitat modelling, ecological genetics, silvicultural systems, pest and disease incidence and management, population viability analysis, decay and decomposition, and estimation of carbon and fire ecology.

A major initiative to extend scientific understanding of forest ecosystem characteristics was the further development of the Warra Long Term Ecological Research site. The site is the only one in the State (and one of the few in the country) where integrated long-term multidisciplinary research on forests ecosystems is carried out. The main focus of research is on the ecology of *Eucalyptus obliqua* wet forests, one of Tasmania's most extensive forest types and important for both conservation and wood production. There are currently about 60 researchers from over 20 institutions involved in a variety of ecosystem research programs at the Warra site. The programs include forest silviculture, ecology of fauna, decomposition and decay, nutrient cycling, remote sensing of productivity, carbon estimation, soils, hydrology, floristics, dendrochronology, fire ecology, landscape ecology, social science and cultural heritage. See www.warra.com for details.

A list of publications and work in progress is published in the annual reports of the relevant agencies: www.forestrytas.com.au; www.dpiwe.tas.gov.au; www.fpb.tas.gov.au; and www.forestry.crc.org.au

7.5.d ENHANCEMENT OF ABILITY TO PREDICT IMPACTS OF HUMAN INTERVENTION ON FORESTS

Much of the research outlined under Indicator 7.5.a is also directly relevant to this Indicator. The main areas of research are: the prediction and amelioration of the impacts of human actions on soil and water, threatened species, impacts of alternative silvicultural systems on biodiversity, the ecological impacts of fire and other disturbances from human use (e.g. walking tracks), and pests and diseases. Each of these is discussed here in turn.

Soil and water

Active research programs in these areas include:

- Development of an environmental program to complement the State Water Development Plan
- Hydrology and soils research at the Warra Long Term Ecological Research site
- Development and evaluation of regional indicators for the Montreal Process
- Development of geodiversity components of the State nature conservation strategy
- Research into Class 4 (headwater) streams.

Threatened species

The projects to predict impacts of forest practices on threatened species include:

- Modelling the distribution and ecology of threatened fauna and flora, and predicting the impacts of forestry, e.g. forest snails, velvet worms, stag beetles, freshwater crayfish, swift parrot, wedge-tailed eagle.
- Modelling the impacts of fragmentation and habitat alteration on multiple species in north-east Tasmania
- Impacts of *Phytophthora cinnamomi* on susceptible threatened flora.

Fire research

The fire research programs of Forestry Tasmania and the Department of Primary Industries, Water and Environment have concentrated on:

- The effects and behaviour of moorland fires (to understand the impacts of burning programs for protecting forests)
- The regeneration characteristics of forests after fires of different intensities, and no-burning options in silviculturally treated forests
- Fuel accumulation and the consumption of fine fuels and carbon estimation in wet and dry forests after fires of different intensities
- Modelling of landscape-level fire effects on fragmentation of forest structure and for predicting outcomes for long term survival of individual species.

Impacts of forest practices on biodiversity

The main projects investigating this topic are:

- Effects of alternative silvicultural systems on biodiversity in *E. obliqua* wet forests
- Modelling the impacts of fragmentation and habitat alteration on multiple species in north-east Tasmania
- The value to biodiversity conservation of retaining native forest in plantation-dominated landscapes.
- The efficacy of wildlife habitat strips in the landscape conserving biodiversity.

Pests, weeds and diseases

Most research in this area has concentrated developing surveillance techniques, and predicting and ameliorating of incursions and impacts:

- Management of *Phytophthora cinnamomi* in areas of high conservation significance
- High-altitude dieback of pencil pines
- Preparation of management plans for major weed species
- Development of a forest-health surveillance system.

7.5.f PERCENT OF NATIVE FORESTS AND PLANTATIONS THAT ARE FORMALLY SUPPORTED BY SILVICULTURAL AND UTILISATION RESEARCH SUPPORT

All commercial native forests and plantations in Tasmania are formally supported by research on silviculture and on utilisation of wood products.

Silvicultural research support for State forests is provided by Forestry Tasmania, CSIRO Division of Forestry and Forest Products (CFFP), and the Cooperative Research Centre for Sustainable Production Forestry (CRCSPF). Table 7.5.f.1 lists the focus of staff who provide this support. Forestry Tasmania carries out research primarily for State forests. The CRCSPF primarily undertakes research on behalf of its industrial partners who, in Tasmania, include CFFP, Forestry Tasmania, Forest Enterprises Australia, Gunns Forest Products, Norske Skog Paper Mills (Aust), Private Forests Tasmania, Serve-Ag Pty Ltd. and the University of Tasmania. Through the combined efforts of these agencies, all commercial native forests and plantations are formally supported by silvicultural research.

Tasmanian silviculturists can draw on research carried out elsewhere, particularly from areas with similar forest types and climates. One example is the silvicultural systems project in *Eucalyptus regnans* forest in Victoria.

Table 7.5.f.1 Silvicultural research staff (including technicians) in Tasmania as at 30 June 2001.

	Native Forests	Plantations	Total
CFFP	2	11	13
Forestry Tasmania	7	14	21
Gunns		7	7
Norske Skog		1	1
Private Forests Tas		1	1
Serve-Ag		1	1
University of Tasmania	1 (+5 students)	14 (+35 students)	55
Total	15	84	99

Research on wood products and their uses is carried out in Tasmania by the CRCSPF, Forestry Tasmania, the Timber Research Unit at the University of Tasmania, and by both direct and contract research sponsored by the Forests and Forest Industry Council and the Tasmanian Timber Promotion Board. Table 7.5.f.2 lists numbers of staff employed who research wood utilisation. In addition, Tasmania draws on research carried out elsewhere, particularly at the CSIRO Forest Products Laboratory at Clayton, Victoria, and as an industry partner in research work sponsored by the Forest and Wood Products Research and Development Corporation. Through these agencies all commercial native forests and plantations are formally supported by research into uses for wood products.

Most of the research findings are directly translatable to the smaller enterprises.

Table 7.5.f.2 Wood Utilisation research staff in Tasmania as at 30 June 2001 (full-time equivalents).

	Native Forests	Plantations	Total
CFFP	0	1	1
Forestry Tasmania	1	1	2
Gunns	2	2	4
Norske-Skog	0	1	1
Forests and Forest Industry Council; direct & contracts	2.2	0	2.2
Tasmanian Timber Promotion Board	1	0	1
Timber Research Unit, University of Tasmania; direct & contracts	1.5	0	1.5
Total	7.7	5	12.7

RESEARCH INDICATORS

The Tasmanian RFA sustainability indicators are expected to be refined and improved over time through research and development. The following indicators were agreed by both governments as potentially reportable but not ready for detailed reporting in the first five-yearly report because the methods have not been fully developed. Descriptions of the current status of research into these indicators follows.

Research 1.1.e FRAGMENTATION OF FOREST TYPES

In Australia's assessment of its capacity to implement the Montreal process, this Indicator was identified as needing further research and development; this view was accepted by the RFA. There has been considerable progress made on research and development in this area. Suitable indicators are not yet available, although some landscape indicators such as the degree of connectivity in native vegetation have been used in national-scale audits (National Land and Water Audit 2001).

A national-level identification of research priorities in this area was conducted by Tickle *et al.* (1998), who found that while metrics (statistics) may provide a means of measuring and monitoring fragmentation, there is no standard method for rating fragmentation. Furthermore, they found that field-work would be required to interpretate the fragments in ecological terms and methods developed to assess within forest fragmentation (e.g. regrowth versus old growth). These problems were subsequently discussed by Lindenmayer *et al.* (1998). They examined the application of landscape metrics to measure and monitor fragmentation, and the relationships between the presence and abundance of forest fauna and patterns of fragmentation at the field and landscape level. Outcomes relevant to Tasmania included:

- No single landscape measure has a significant influence on all species; none captured the range of species' responses
- Landscape surrogates do not necessarily reflect either the long-term viability of populations or the integrity of ecosystem.
- The specific components of an interim indicator of landscape change that could be tested are:
 - total forest cover by forest type and age class
 - change in spatial distribution of forest type by age class (e.g. mean patch size or variation in patch size although further monitoring is needed to demonstrate their ecological relevance).
- Rigorous assessment of landscape surrogates requires explicit statements on:
 - the objectives of the reporting
 - the target responses (e.g. species of interest; these should be defined by regional forest managers)
 - the scale of reporting required (i.e. what is the landscape management unit, which will define the unit of analysis)
- Reports on some indicators, for example 1.1.b and 1.1.e, might overlap.
- The use of landscape surrogates across the study areas may provide new insights into species' responses at the landscape level and they may also be useful indicators of other aspects of sustainable forest management (e.g. wood production values).
- Most landscape metrics/indices are highly collinear (lying in a straight line). The report identified methods of reducing collinearity of the indices, and recommends, depending on regional management objectives, using a key group of measures (e.g. patch size, proximity).

Lindenmayer *et al.* (1998) also suggested areas for further research. Those relevant to Tasmanian forests are:

- Identifying the relationships between ecosystems and temporal processes at the landscape scale.
- Empirical research on many species to assist in the ecological interpretation of the impact of landscape processes.
- Further testing of the framework for landscape surrogates.

Tasmania has initiated several projects relevant to these identified research needs. They include the following:

- Evaluation of landscape-planning tools for forest management and conservation in a fragmented environment (Smith *et al.* 2000).

This project investigated the impacts of various land management scenarios on an endangered species, the keeled snail (*Tasmaphena lamproides*), by relating the population viability analysis to the structure of the landscape. The study showed that area of available habitat and nearest-neighbour indices were the most important landscape measures for this species. It recommended that other species with different life-histories be studied.

- Several studies have detailed the value for various components of biodiversity of retained native vegetation in areas of planned or existing plantations (Loofs *et al.* 2000, Loofs *et al.* 2001, and MacDonald *et al.* 2001). Landscape-level planning to maintain biodiversity under different land-use scenarios are being investigated by the University of Melbourne and Forestry Tasmania. The project entitled '*Linking landscape ecology and management to population viability analysis*', is evaluating the utility of various fragmentation indices in a multiple-species approach to landscape planning.

Overall, these studies have supported some of the findings of the national projects, *namely*:

- There is considerable collinearity among fragmentation variables;
- The retained vegetation is of critical importance in maintaining biodiversity at the landscape scale;
- Species respond differently to particular land-use scenarios; and
- No single measure of fragmentation is likely to be universally applicable.

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Research 1.2.c POPULATION LEVELS OF REPRESENTATIVE SPECIES FROM DIVERSE HABITATS MONITORED ACROSS THEIR RANGE

This indicator is a broad measure of the conservation status of a range of representative species across habitats. This measure reflects elements of ecosystem and genetic diversity.

Data are available on four species of bird, five species of fish, one species of butterfly and seven species of vascular plants (see Table Res. 1.2.c.1). At present, 16 of the 17 species are monitored annually. For some other species (e.g. possums, wallabies, eastern-barred bandicoot) only population indices are available (see Table Res. 1.2.c.2). The abundances of possums and wallabies across Tasmania are tracked by spotlight surveys. Trends in eastern-barred bandicoot numbers in Tasmania are tracked by roadkill surveys. Surveys of burrowing crayfish, foliage insects, species living in hollow trees and cave fauna are being surveyed to determine population trends in response to forest management at a regional and local level.

Table Res. 1.2.c.1 Species with population data from annual monitoring

Species	Common name	Agency
Fauna		
<i>Neophema chrysogaster</i>	Orange-bellied parrot	DPIWE
<i>Oreixenica ptunarra</i>	Ptunnara brown butterfly	DPIWE
<i>Lathamus discolor</i>	Swift parrot	DPIWE
<i>Aquila audax fleayi</i>	Wedge-tailed eagle	DPIWE
<i>Galaxias johnstoni</i>	Clarence galaxia	IFS
<i>Galaxias auratus</i>	Golden galaxia	IFS
<i>Galaxias tanycephalus</i>	Saddled galaxia	IFS
<i>Paragalaxias mesotes</i>	Arthurs Paragalaxia	IFS
<i>Galaxias fontanus</i>	Swan galaxia	IFS
<i>Pardalotus quadragintus</i>	Forty-spotted pardalote	DPIWE
Flora		
<i>Phebalium daviesii</i>	Davies' wax flower	DPIWE
<i>Tetralthea gunnii</i>	Shy susan	DPIWE
<i>Barbarea australis</i>	Native wintercress	DPIWE
<i>Epacris apsleyensis</i>	Apsley heath	DPIWE
<i>Epacris barbata</i>	Bearded heath	DPIWE
<i>Epacris virgata</i>	Pretty heath	DPIWE
<i>Euphrasia fragosa</i>	Shy eyebright	DPIWE

DPIWE – Department of Primary Industries, Water and Environment

IFS – Inland Fisheries Service

Table Res. 1.2.c.2. Species with population indices

Species	Common name	Source	Agency
<i>Accipiter novaehollandiae</i>	Grey goshawk	Foraging habitat requirements of <i>Accipiter novaehollandiae</i> in Tasmania	Forest Practices Board
<i>Engaeus orramakunna</i>	Mt Arthur burrowing crayfish	Monitoring of the long-term impact of plantation establishment on populations of <i>Engaeus orramakunna</i>	Forest Practices Board
<i>Engaeus spinicaudatus</i>	Scottsdale burrowing crayfish	Impact of pine-plantation development on a population of <i>Engaeus spinicaudatus</i> in adjacent habitat	Forest Practices Board
<i>Hoplogonus simsoni</i>	Simsons stag beetle	Effects of regrowth thinning and clear felling and regeneration burning on <i>Hoplogonus simsoni</i>	Forest Practices Board
<i>Perameles gunnii</i>	Eastern-barred bandicoot	Road-kill surveys of mammals	DPIWE
<i>Trichosurus vulpecula</i>	Brush-tailed possum	Spotlight surveys of medium-sized mammals	DPIWE
<i>Macropus rufogriseus</i>	Bennetts wallaby	Spotlight surveys of medium-sized mammals	DPIWE
<i>Thylogale billardierii</i>	Tasmanian pademelon	Spotlight surveys of medium-sized mammals	DPIWE
Foliage insects		Succession patterns in foliage insects in clearfelling dry forests	Forestry Tasmania
Cave fauna		Little Trimmer Cave fauna: a long-term monitoring project	Forest Practices Board /Forestry Tasmania
Hollow-dwelling species		Mortality of retained habitat trees in State forest coupes: a long-term monitoring project	Forest Practices Board /Forestry Tasmania

The project, known as “Identification of species and functional groups that give early warning of major environmental change”, should result in a greatly increased capacity to report on this indicator.

This project began in 1999 and is due for completion in 2002. It has involved researchers in all of the eastern states of Australia. Dr Rod Kavanagh of the Forest Research and Development Division, State Forests of NSW, is the manager, and Richard Loyn of the Arthur Rylah Institute, Department of Natural Resources and Environment coordinates contributions from Victoria and Tasmania. The project is funded through the Forests and Wood Products Research and Development Corporation as part of the Commonwealth Wood and Paper Industry Strategy. Key players from elsewhere include Dr Geoff Smith (Queensland) and Dr Peter Catling (ACT).

The project has compiled a list of vertebrate species ranked according to their sensitivity to logging and grouped by their responses to logging. Less detailed lists are being prepared for groups of plant and invertebrate species. The project has defined sensitivity to logging in terms of a population's

response over time after major logging disturbance. Data from several datasets are being compiled to give numerical information on species sensitivities. These datasets will also be used to identify correlations between responses of different species to help in identifying indicators and interpreting data from future monitoring projects.

The project has recognised that programs usually monitor a suite of related species, rather than single species, although interpretation may focus more on some species than on others in the same suite. Both these points need to be considered in designing monitoring programs. Monitoring may also focus on habitat, especially when it can be assessed remotely; Peter Catling's group at CSIRO is developing and assessing methods for remote sensing of fauna habitats.

Several milestone reports have been prepared for the Forest and Wood Products Research and Development Corporation, and more are in preparation. The website address is: www.fwprdc.org.au. One outcome, which is expected in 2002, will be a set of principles for designing monitoring programs. Working meetings will then be held with stakeholders about this and other outcomes.

Published papers marked # have resulted directly from the project; others on related subjects were written by team members during the project.

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Research 2.1.d ANNUAL REMOVAL OF WOOD PRODUCTS COMPARED TO THE SUSTAINABLE VOLUME – FUELWOOD /FIREWOOD ASPECTS

Reliable, comprehensive data for firewood/fuelwood removals are not available; the estimated annual total is about 500 000 tonnes. There is no evidence that the total volumes are not sustainable. However, there is concern that the practice may not be ecologically sustainable because of the type of wood being removed (old growth and dead wood) and the nature of the forests and woodlands being targeted for firewood harvest. Anecdotal evidence suggests that only small amounts are harvested as residues from commercial harvesting in the more productive forests. The bulk is from forests and woodlands of low commercial quality that are not subject to formal management plans or sustained yield calculations. There is little direct research into the ecological effects of firewood harvesting in these forests in Tasmania, although research in other Australian States is relevant. Some of the research on commercial wood production forests is also relevant to the forests from which firewood is being sourced, as is Tasmanian research into habitat patches, wildlife strips and hollow-dependent fauna.

Research 2.1.e ANNUAL REMOVAL OF NON-TIMBER PRODUCTS – WATER SUPPLY ASPECTS

In 1989 and 1991, the Forestry Commission Tasmania (now Forestry Tasmania) established monitoring programs aimed at quantifying the impact of forestry operations on water quality and yield of Tasmanian streams. The Commission identified two regions of primary interest: the dry sclerophyll forests on highly erodible granite soils in north-east Tasmania near St Helens, and the wet sclerophyll forests on stable dolerite soils near Launceston. The Commission was concerned about possible rilling and gullying after logging on the erodible granites, and possible turbidity from storm runoff during winter logging in the dolerite terrain around Musselboro Creek, which feeds the Launceston water supply. The two experimental areas were instrumented, monitored and sampled in the same way.

The St Helens area, unlike Musselboro Creek, contained two nested catchments: Deacons Creek and Gentle Annie, each of which had an undisturbed control sub-catchment in the headwaters of the logged catchment. Low-impact conventional logging was done at Gentle Annie, and cable operations at the steeper Deacons Creek catchment.

Musselboro Creek drains the southern slopes of Mt Barrow, about 1 000 hectares of State forest and about 1 500 hectares of mixed agriculture before entering the North Esk River about 15 km upstream of the Chimney Saddle water intake. The creek was instrumented with weirs to measure flow, and storm-activated water samplers to assess water quality. In addition, base flow was sampled at eight sites down the stream. The weirs were located so that the first measured a control catchment, the second a treatment catchment and the third the effects of agriculture.

Each site was monitored for four years, during which a coupe was harvested in the experimental areas. After harvesting, the sites were monitored for a further two years.

A research project at the Warra Long-term Ecological Research site begun in 1997, focuses on changes in water flow as a result of timber harvesting and subsequent regeneration in wet forest. Three catchments have had weirs constructed, and after calibration, one of these will be logged. Water inputs from precipitation and outputs through the weir will be calculated for comparison with the control catchment.

In 2001, the Forest Practices Board commissioned an independent review of the impacts of land use on water supply within the Launceston City catchment. The results of this review will be available in 2002.

Research 3.1.c AREA AND PERCENT OF FOREST LAND WITH DIMINISHED OR IMPROVED BIOLOGICAL, PHYSICAL AND CHEMICAL COMPONENTS INDICATIVE OF CHANGES IN FUNDAMENTAL ECOLOGICAL PROCESSES; and

Research 4.1.e AREA AND PERCENT OF LAND WITH SIGNIFICANT COMPACTION OR CHANGE IN SOIL PHYSICAL PROPERTIES RESULTING FROM HUMAN ACTIVITIES

Research on soil indicators since 1995 has shown that they are useful research tools for comparing the sustainability of certain operational techniques and also can be used to broadly indicate the extent of State-wide change. However, as predicted by Ellis (1995) below, routine use of soil indicators as sustainability measures to set industry standards in operational coupes does not appear to be viable.

Summarising comprehensive research on soils in doleritic terrain, Ellis (1995) had some cautionary words: *“Whilst the concept of setting general standards of allowable impacts of forest practices in terms of measurable indicators is superficially attractive . . . the difficulty comes in sampling areas of operational size and variability with sufficient precision to sustain any charge that a standard has been violated.”*

The most comprehensive research addressing indicator 4.1e was by Rab (1999) on *Eucalyptus regnans* forests on granitic soils of upland Victoria, which are very similar to the forests on the wetter granitic soils of northeast Tasmania. Rab (1999) found that in three conventionally harvested coupes 40-50 per cent of coupe areas had a greater than 15 per cent increase in topsoil (0-10 cm) bulk density, and 20-35 per cent of coupe area had a 20-35 per cent increase. There were corresponding decreases in the topsoil's organic matter, porosity and hydraulic conductivity. In each of the coupes, 14 per cent of the area had exposed subsoils after harvest.

In relation to indicator 3.1.c, Rab (1999), in a study of 26 coupes, found that, on average, 48 per cent of the coupe area had disturbed topsoils (and were therefore likely to have changed biological, chemical or physical properties). However, precise changes were not quantified, nor were impacts calibrated against production.

In contrast to Rab's (1999) results for ground-based harvest, Laffan *et al.* (2001) found that cable logging had relatively minor effects on soil properties. These authors also reviewed the usefulness of the sustainability indicators, and concluded that it would vary for different soil parent materials (sands versus dolerite for example) and that other sustainability indicators of the status of the soil nutrient such as nitrogen and phosphorus, should also be used. These authors cautioned against using organic carbon as a sustainability indicator: *“because of the relatively high proportion of charcoal commonly found in soils under native eucalypt forest, organic carbon content may be grossly overestimated using normal laboratory methods.”*

Similar changes to those noted by Rab (1999) were found by Pennington *et al.* (in press) in a single coupe in doleritic soils at the Warra Long Term Ecological Research Site in southern Tasmania. In another study on doleritic soils, Pennington *et al.* (1999) found that recruitment and production of young *Eucalyptus obliqua* trees both were lower on compacted snig tracks than in the general coupe area, but that the loss of production on old snig tracks was balanced by the increased production in disturbed areas alongside the snig tracks. This unexpected result emphasised the importance of calibrating disturbance against production. Pennington *et al.* (in press) echoed the caution of Ellis

(1995), stating that “*Unless the changes in soil properties are very high, the highly variable nature of the results makes it difficult to quantify any significant changes.*” Future studies will be assisted by Pennington *et al.* (in press) establishing GIS-positioned sampling plots that can be revisited for long-term monitoring.

McIntosh (2001, unpublished report) extrapolated research results to the whole of the forested estate of Tasmania, using records of harvested area and operation types (Forestry Tasmania 1998, 2000). While the estimates are subject to large errors, they nevertheless show that current operations have relatively little effect on soil condition in Tasmania.

Within the 3 346 000 ha forest estate of Tasmania, activities during 1999-2000 were estimated to have caused the biological component of soils to have diminished in 0.6 per cent of the land area, to have remained unchanged in 99.1 per cent, and to have improved in 0.3 per cent. The diminishing of the biological component was largely attributed to the conversion of native forest (with diverse soil biological niches) to plantations (with more uniform soil biological environments). The improved biological component in 0.3 per cent of the land area was wholly attributed to conversion of marginal agricultural land to plantations.

The physical component of soils was estimated to have diminished in 0.1 per cent of the forested land area, to have remained unchanged in 99.2 per cent, and to have improved in 0.7 per cent. The diminishing of the physical component was largely attributed to conversion of forest to other land uses such as agriculture or infrastructure, with a lesser contribution from direct effects of operations (e.g. soil compaction) in harvested areas. The improved physical component was entirely due to cultivation for plantations.

The chemical component of soils was estimated to have diminished in 0.4 per cent of the forested land area and to have remained unchanged in 99.6 per cent. The diminishing of the chemical component was mostly attributable to greater uptake and off-site removal of nutrients under short-rotation plantations. The absence of improvement of chemical components was because forests are fertilised at a lower rate than agricultural land, and no long-term build-up of fertility occurred.

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Research 4.1.f EXTENT OF WATER BODIES IN FOREST AREAS (eg. stream kilometres, lake hectares) WITH SIGNIFICANT VARIANCE OF BIOLOGICAL DIVERSITY FROM THE HISTORIC RANGE OF VARIABILITY

The rationale for this Indicator is that in-stream faunas reflect the quality of the habitat and water, which in turn reflects the impacts of off-stream management activities. Hence aquatic diversity is a good measure of the success of management prescriptions to protect forest.

AUSRIVAS (Australian River Assessment System) river-health models have now been developed for most of Tasmania outside the Tasmanian Wilderness World Heritage Area. The report on the Tasmanian river-health assessment (Krasnicki *et al.* 2001) was accepted by Environment Australia in August 2001.

The report not only provides a set of models that can be used for future and ongoing assessments of river health, but also gives an overview of the condition of rivers at nearly 300 test sites across the State. The program specifically targeted a number of land uses, including mining, intensive agriculture and forestry. Its general finding was that forestry has a lower impact than some other land uses. Of the sites where forestry was the main land use, 48 per cent were found to be equal to the reference condition, 34 percent were found to be significantly below this level, 9 per cent were considerably below and 4 per cent were slightly below.

The assessment provides a useful baseline of condition against which variation could be assessed in the future. However, additional sites and resources will be required for sampling to provide a robust representation of riverine conditions in forest areas to support this indicator. Relatively simple refinement of the model would also improve its sensitivity.

In relation to possible long-term modelling, AUSRIVAS sampling is recognised as a major biological indicator set and has already been incorporated in a proposed Tasmanian water quality and quantity monitoring program and in water licences issued under the *Water Management Act 1999*. AUSRIVAS samples are also likely to be used for monitoring environmental flow.

AUSRIVAS is likely to become the main source of data for addressing Indicator 4.1.f as it is collected in a consistent manner across Australia. It has already become part of the Water Quality Objective Setting process, *Tasmania Together*, Natural Resource Management and the National Action Plan for Salinity and Water Quality in Tasmania.

AUSRIVAS models have been developed for broad monitoring programs, but more detailed models could be developed for research purposes based on closer taxonomic specification and abundance measures. While the techniques are applicable for research, the models would require refinement and customisation to particular catchments for research purposes.

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Research 5.1a TOTAL FOREST ECOSYSTEM BIOMASS AND CARBON POOL, AND IF APPROPRIATE, BY FOREST TYPE, AGE CLASS, AND SUCCESSIONAL STAGE

Research into the forest ecosystem biomass and carbon pool is principally directed by and being carried out by the Australian Greenhouse Office and the Cooperative Research Centre for Carbon Accounting.

As part of its international commitments under the Convention on Climate Change, Australia has produced an annual inventory of national greenhouse-gas emissions since 1990, including forest sources and sinks.

The estimates are continually being improved through research and acquisition of better data. At present, there are several national research projects underway which will enhance capacity to estimate forest biomass (by forest type, age class, and successional stage) within the next five-year Forest Resource Assessment (FRA) cycle. These are:

- 1972-2000 Landsat based remote sensing program (11 national coverages) which will identify forest disturbance and, when combined with forest growth models, can be used to estimate biomass at any point in time;
- a map of plantations will be extracted from each Landsat coverage, allowing plantation biomass estimates based on the age, area disturbance history and type (conifer vs broadleaf). Growth estimates will be based on a mix of available inventory and productivity mapping (using a 3PG derivative spatial index) at a 250m resolution (continentally);
- a review of forest management practices, native forests and plantations, between 1950 and 2000. This work includes harvest practice and follow-up silvicultural treatment, wood product extraction, site preparation, fertilisation, use of fire, cutting cycles etc. The analysis is specific to each plantation and forest type;
- further work will be undertaken on plant partitioning to gain a better understanding of ratios of material (eg. roots) to more readily measurable aboveground tree components;
- further work will be completed on carbon content and wood density to add to existing compendium published as NCAS Technical Reports; and
- growth and yield modeling (for total biomass) will be generally improved for native forests, plantations and environmental plantings.

Through its National Carbon Accounting System, the Australian Greenhouse Office has developed an integrated carbon accounting and modeling system for forest and agricultural land systems known as FullCAM. It consists of a suite of integrated models independently developed to predict and account for carbon change as a result of agriculture and forest activities, litter decomposition, tree growth and fire. This has required the largest remote sensing program yet undertaken in Australia, with FullCAM becoming the primary instrument for deriving national carbon accounts through high-resolution analysis. The system is capable of operating at a plot, estate or spatial scale where the plot-level information is largely used for model calibration on research sites. The total ecosystem biomass by

carbon pool can be derived from the sub-model for forest accounting (CAMFor). The development of these models has been based on a large number of research projects undertaken over the past two years, including:

- biomass estimation
- wood density
- carbon content of various tree components
- carbon content of woody roots
- remote-sensing analysis of land-cover change
- protocols for sampling tree and stand biomass
- allometric relationships and community biomass stock
- inter-laboratory soil calibration
- usage and life cycle of wood products
- sampling, measurement and analytical protocols for estimating soil carbon
- spatial estimation of plant productivity and classification by vegetation type.

The National Carbon Accounting System provides the most up-to-date research and monitoring capacity for this indicator, based on cooperative partnerships with government agencies and research organisations.

Additional information can be found at the following website address:

www.greenhouse.gov.au

Research 6.3.a VALUE OF INVESTMENT, INCLUDING INVESTMENT IN FOREST GROWING, FOREST HEALTH AND MANAGEMENT, PLANTED FORESTS, WOOD PROCESSING, RECREATION AND TOURISM; AND

Research 6.5.a DIRECT AND INDIRECT EMPLOYMENT IN THE FOREST SECTOR AND FOREST-SECTOR EMPLOYMENT AS A PROPORTION OF TOTAL EMPLOYMENT

Agriculture, Fisheries and Forestry Australia commissioned the Australian Bureau of Agriculture and Resource Economics (ABARE) to undertake a pilot survey of employment and investment in the forest industry in Tasmania as part of the program to develop suitable measures for reporting against Montreal Indicators at the national level. ABARE was also required to report more generally on forest-sector employment in Australia.

The methods and results are reported in Grist *et al.* (2000) (6.3.a) and Yainshet and Grist (2001) (6.5.a). The results of the employment survey have been summarised in the response to Indicator 6.5.a of the present report. Both reports found that the survey method, with improvements, was suitable for future monitoring of these indicators. Grist *et al.* (2000) recommended that the investment and employment survey be expanded to other States and to provide information for RFA review reporting. Periodic surveys were also recommended.

Yainshet and Grist (2001) recommended that ABS surveys remain the source of forest-based industry employment data. The difficulties of establishing accurate employment data for “forest contact” industries were noted as was the Montreal Process Implementation Group work with State agencies to develop better databases.

The projects for research and pilot work on the Montreal Process Indicators are nearing completion. The next phase is for the States and the Commonwealth to review the results and implications for identifying practical and cost-effective data sources for indicators.

ABARE would like to do followup studies to gain an insight into any structural changes since the implementation of the RFA. However, at this stage funding has not been sought for this purpose, and neither has a potential source been identified. Consequently, the data being collected at present by ABARE and the Australian Bureau of Statistics will remain the main sources for these indicators in the foreseeable future.

References

Grist, P., Tran, Q.T. and Ball, A. (2000) *Sustainability Indicator 6.3a – Survey of the value of investment in forest industries in Tasmania*. Report by ABARE for Agriculture, Fisheries and Forestry Australia and the Montreal Process Implementation Group.

Yainshet, A. and Grist, P. (2001) *Sustainability Indicator 6.5a – Direct and indirect employment in the forest sector*. Report by ABARE for Agriculture, Fisheries and Forestry Australia and the Montreal Process Implementation Group.

Research 6.5.c VIABILITY AND ADAPTABILITY TO CHANGING SOCIAL AND ECONOMIC CONDITIONS OF FOREST DEPENDENT COMMUNITIES

A research project funded by AFFA aims to identify cost-effective methods for reporting this indicator. The methods will use existing or broadly available data and offer, if possible, a quantitative measure of social capital.

The *Social Atlas of Australian Regional Forest Agreement Areas*, now in draft form, provides data on 24 indicators. This document will be available on the AFFA website (www.affa.gov.au) under Forestry Publications later in 2002.

Two regions Eden and north-east Victoria have been identified by the Stakeholder Advisory Committee as case studies to test the practicality of the indicators for both the Montreal and RFA reports. A survey method of testing measures of social capital is also being developed.

APPENDIX 1.1a

Table 1.1a Extent of area by forest type and tenure as at 30 June 2001

RFA Forest Vegetation Community	Land Classification (Tenure)							Percentage change since RFA (1996) (%)
	Conservation Reserve (Nat. Parks & Wildlife Act) (ha)	Public Reserve (Crown Lands Act) (ha)	Forest Reserve (Forestry Act) (ha)	Other State forest (multiple- use) (ha)	Other publicly managed land (ha)	Private freehold land (ha)	TOTAL (ha)	
Dry eucalypt forests								
Coastal <i>E. amygdalina</i> dry forest	45 500	1200	13 000	53 300	7000	69 100	189 100	-0.6%
Dry <i>E. delegatensis</i> forest	60 000	4400	7800	107 300	11 200	98 000	288 600	-0.3%
Dry <i>E. nitida</i> forest	133 100	200	1600	16 900	1900	6000	159 700	-0.1%
Dry <i>E. obliqua</i> forest	29 500	1500	7900	64 600	6600	52 100	162 200	-1.2%
<i>E. amygdalina</i> forest on dolerite	6400	1000	13 300	23 600	1100	132 100	177 500	-0.5%
<i>E. amygdalina</i> on sandstone	4200	100	100	6000	2000	17 600	30 100	-0.1%
<i>E. morrisbyi</i> forest	0	0	0	0	0	20	20	0.0%
<i>E. pauciflora</i> on dolerite	500	800	200	2500	1200	13 600	18 800	0.0%
<i>E. pauciflora</i> on sediments	3800	100	0	3300	100	8 900	16200	0.0%
<i>E. pulchella/globulus/viminalis</i> grassy shrubby forest	15 400	1700	9300	11 500	11 900	101 200	151 000	-0.2%
<i>E. risdonii</i> forest	200	10	0	0	0	200	400	0.0%
<i>E. rodwayi</i> forest	40	50	100	300	100	8000	8700	-0.1%
<i>E. sieberi</i> forest on granite	2900	30	800	11 600	200	2200	17 700	-0.1%
<i>E. sieberi</i> on other substrates	1900	100	6500	29 900	200	7200	45 900	-0.2%
<i>E. tenuiramis</i> on dolerite	2700	100	2600	2400	10	700	8400	0.0%
<i>E. tenuiramis</i> on granite	2700	100	0	0	0	200	3000	0.0%
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	300	20	0	10	20	900	1200	0.0%
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	1800	100	7800	13 600	300	15 600	39 200	-3.6%
Furneaux <i>E. nitida</i> forest	6900	200	0	1000	14 400	7300	29 800	0.0%
Furneaux <i>E. viminalis</i> forest	100	0	0	0	0	20	100	0.0%
Grassy <i>E. globulus</i> forest	6000	100	10	400	100	7700	14 300	-1.0%

Grassy <i>E. viminalis</i> forest	1400	100	1000	1500	200	109 100	113 300	0.0%
Inland <i>E. amygdalina</i> forest	1500	100	500	1300	200	21 800	25 400	-1.6%
Inland <i>E. tenuiramis</i> forest	6000	200	700	1200	500	46 300	55 000	-0.1%
Shrubby <i>E. ovata</i> forest	100	100	100	200	100	6500	7100	-1.3%
Wet eucalypt forests								
<i>E. brookeriana</i> wet forest	10	100	900	1300	30	2100	4500	-2.3%
<i>E. regnans</i> forest	4700	200	5100	55 700	1400	5000	72 100	-5.2%
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	200	10	0	400	30	1900	2400	0.0%
Tall <i>E. delegatensis</i> forest	58 000	3300	8600	160 700	3300	43 900	277 900	-2.8%
Tall <i>E. nitida</i> forest	65 800	20	600	7100	100	700	74 300	-0.1%
Tall <i>E. obliqua</i> forest	58 000	1300	20 400	255 100	6000	71 600	412 300	-3.1%
Wet <i>E. viminalis</i> forest on basalt	30	10	400	700	30	2800	4000	-4.5%
Sub-alpine eucalypt forest								
<i>E. coccoifera</i> dry forest	37 700	800	100	6000	3500	6500	54 500	0.0%
<i>E. subcrenulata</i> forest	7700	0	100	2400	20	10	10 200	0.0%
Non-eucalypt forest								
<i>Acacia melanoxylon</i> on flats	400	100	1500	4700	200	2100	9000	-0.3%
<i>Acacia melanoxylon</i> on rises	2600	100	600	5900	400	3400	13 000	-2.6%
<i>Allocasuarina verticillata</i> forest	600	40	0	0	100	800	1400	0.0%
<i>Banksia serrata</i> woodland	100	0	0	0	0	40	200	0.0%
Callidendrous and thamnic rainforest on fertile sites	66 400	200	26 600	82 700	500	14 200	190 600	-0.7%
<i>Callitris rhomboidea</i> forest	300	20	30	100	100	300	800	0.0%
Huon Pine forest	7500	0	10	1400	50	10	9000	0.0%
King Billy Pine forest	16 700	0	100	2800	500	10	20 100	0.0%
King Billy Pine with deciduous beech	800	0	0	30	40	0	800	0.0%
<i>Leptospermum</i> sp./ <i>Melaleuca</i> <i>squarrosa</i> swamp forest	9200	100	600	3500	300	5300	18 900	-0.3%
<i>Melaleuca ericifolia</i> forest	400	0	0	10	10	200	600	0.0%
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	100	30	10	40	20	40	300	-0.6%
Pencil Pine forest	300	0	0	0	0	0	300	0.0%
Pencil Pine with deciduous beech	200	0	0	0	0	0	200	0.0%
Silver wattle (<i>Acacia dealbata</i>)	3800	200	4300	26 100	700	16 900	52 000	-3.8%
Thamnic rainforest on less fertile sites	256 000	100	12 200	93 200	3900	11,700	377 100	-0.3%

Hardwood Plantation	0	20	10	25 400	200	91 800	117 500) 33.3%
Softwood Plantation	100	1100	100	52 600	100	23 900	77 800)
	930 400	19 600	155 700	1 140 000	80 700	1 037 700	3 364 500	0.3%

APPENDIX 1.1b

Table 1.1b(i) Area of forest types by growth stage and tenure as at 30 June 2001

RFA Forest Vegetation Community	Growth Stage	Land Classification (Tenure)						
		Conservation Reserve (Nat. Parks & Wildlife Act) (ha)	Public Reserve (Crown Lands Act) (ha)	Forest Reserve (Forestry Act) (ha)	Other State forest (multiple- use) (ha)	Other publicly managed land (ha)	Private freehold land (ha)	TOTAL (ha)
Dry eucalypt forests								
Coastal <i>E. amygdalina</i> dry forest	Regen.	0	0	0	2900	30	30	3,000
	Regrowth	1400	200	700	4400	800	10 400	17 900
	Mature	40 800	900	11 900	43 400	5800	48 800	151 600
	Unknown	3200	100	400	2700	500	9900	16 700
Dry <i>E. delegatensis</i> forest	Regen.	100	0	0	9800	20	100	10 000
	Regrowth	7100	1400	900	21 600	1100	12 500	44 500
	Mature	50 700	3000	6700	73 000	8900	76 200	218 500
	Unknown	2000	100	200	2900	1100	9300	15 600
Dry <i>E. nitida</i> forest	Regen.	10	0	0	800	0	10	800
	Regrowth	30 900	30	300	3600	300	500	35 600
	Mature	102 200	200	1300	12 400	1600	5500	123 200
	Unknown	20	0	0	40	10	0	100
Dry <i>E. obliqua</i> forest	Regen.	200	0	20	9500	200	100	10 000
	Regrowth	2800	600	1200	16 000	1800	16 800	39 200
	Mature	26 400	900	6700	37 700	4400	33 000	109 100
	Unknown	100	20	100	1400	200	2200	3900
<i>E. amygdalina</i> on dolerite	Regen.	50	0	0	2600	10	100	2700
	Regrowth	200	30	800	3000	100	16 700	20 900
	Mature	6100	900	12 500	17 600	900	105 100	143 200
	Unknown	100	10	100	300	100	10100	10 600
<i>E. amygdalina</i> on sandstone	Regen.	0	0	0	900	0	20	900
	Regrowth	100	10	0	1100	300	2400	3900
	Mature	4100	100	100	4000	1700	14 400	24 400
	Unknown	100	0	0	10	0	800	900
<i>E. morrisbyi</i> forest	Regen.	0	0	0	0	0	0	0

	Regrowth	0	0	0	0	0	0	0
	Mature	0	0	0	0	0	20	20
	Unknown	0	0	0	0	0	0	0
<i>E. pauciflora</i> on dolerite	Regen.	0	0	0	20	0	0	20
	Regrowth	100	20	20	100	200	1800	2200
	Mature	400	800	200	2200	800	9800	14 100
	Unknown	40	20	0	200	200	2100	2600
<i>E. pauciflora</i> on sediments	Regen.	0	0	0	100	0	20	100
	Regrowth	200	10	0	200	50	900	1300
	Mature	3600	40	0	2800	100	6500	12 900
	Unknown	30	0	0	300	30	1600	1900
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	Regen.	200	0	0	700	300	100	1300
	Regrowth	900	300	400	2000	2000	11 800	17 400
	Mature	14 300	1400	8900	8800	9500	89 200	132 200
	Unknown	0	0	0	40	10	100	100
<i>E. risdonii</i> forest	Regen.	0	0	0	0	0	0	0
	Regrowth	100	10	0	0	0	200	300
	Mature	20	0	0	0	0	100	100
	Unknown	0	0	0	0	0	0	0
<i>E. rodwayi</i> forest	Regen.	0	0	0	30	0	0	30
	Regrowth	0	0	20	100	10	1400	1500
	Mature	40	40	100	200	100	5700	6200
	Unknown	10	10	0	20	20	900	1000
<i>E. sieberi</i> forest on granite	Regen.	0	0	0	600	0	0	600
	Regrowth	20	0	0	800	10	300	1200
	Mature	2700	20	800	9800	100	1400	15 000
	Unknown	100	10	10	300	10	500	900
<i>E. sieberi</i> on other substrates	Regen.	0	0	0	4100	0	10	4100
	Regrowth	30	20	300	1300	20	1500	3100
	Mature	1900	30	6100	24 000	200	5400	37 600
	Unknown	10	30	100	500	10	400	1 000
<i>E. tenuiramis</i> on dolerite	Regen.	0	0	0	300	0	0	300
	Regrowth	400	10	10	300	0	100	800
	Mature	2300	100	2600	1800	10	600	7300
	Unknown	0	0	0	0	0	0	0
<i>E. tenuiramis</i> on granite	Regen.	0	0	0	0	0	0	0
	Regrowth	0	0	0	0	0	0	0
	Mature	2800	100	0	0	0	200	3000

<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	Unknown	0	0	0	0	0	0	0
	Regen.	0	0	0	0	0	0	0
	Regrowth	20	0	0	0	20	20	100
	Mature	200	30	0	0	0	900	1200
<i>E. viminalis/ovata/amygdalina/obliqua</i> damp sclerophyll forest	Unknown	0	0	0	0	0	0	0
	Regen.	0	0	0	1800	0	10	1800
	Regrowth	500	20	1300	2900	200	9100	13 900
	Mature	1300	30	6500	8800	200	5700	22 400
Furneaux <i>E. nitida</i> forest	Unknown	10	0	20	100	10	800	1000
	Regen.	0	0	0	0	0	0	0
	Regrowth	0	0	0	10	0	600	600
	Mature	6900	200	0	1000	14 400	6600	29 200
Furneaux <i>E. viminalis</i> forest	Unknown	0	0	0	0	0	100	100
	Regen.	0	0	0	0	0	0	0
	Regrowth	0	0	0	0	0	0	0
	Mature	100	0	0	0	0	20	100
Grassy <i>E. globulus</i> forest	Unknown	0	0	0	0	0	0	0
	Regen.	0	0	0	10	0	0	10
	Regrowth	300	0	0	200	50	1300	1900
	Mature	5700	100	20	200	100	6400	12 400
Grassy <i>E. viminalis</i> forest	Unknown	0	0	0	0	0	0	0
	Regen.	0	0	0	600	0	30	700
	Regrowth	100	10	30	30	30	11 900	12 000
	Mature	1400	50	900	800	200	94 100	97 400
Inland <i>E. amygdalina</i> forest	Unknown	0	0	100	10	0	3100	3200
	Regen.	0	0	0	100	0	20	100
	Regrowth	300	10	20	200	20	4000	4600
	Mature	1300	40	500	1000	100	16 400	19 300
Inland <i>E. tenuiramis</i> forest	Unknown	10	20	10	100	20	1400	1500
	Regen.	0	0	0	200	0	0	200
	Regrowth	900	100	200	200	100	11 800	13 300
	Mature	5100	200	500	800	400	34 100	41 100
Shrubby <i>E. ovata</i> forest	Unknown	0	0	10	10	10	300	300
	Regen.	0	0	0	10	0	0	10
	Regrowth	40	30	0	100	100	2200	2400
	Mature	100	40	100	100	40	3400	3800
Wet eucalypt forests	Unknown	0	0	10	30	10	900	1000

<i>E. brookeriana</i> wet forest	Regen.	0	0	0	30	0	100	100
	Regrowth	0	20	400	600	10	600	1600
	Mature	10	30	500	700	20	1500	2800
	Unknown	0	0	0	10	0	20	40
<i>E. regnans</i> forest	Regen.	10	0	0	5400	20	100	5500
	Regrowth	600	100	1300	28 100	500	2900	33 500
	Mature	4100	100	3800	20 900	800	1700	31 300
	Unknown	30	0	50	1400	100	400	1900
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	Regen.	0	0	0	0	0	0	0
	Regrowth	100	0	0	300	20	1100	1500
	Mature	100	10	0	100	10	800	900
	Unknown	0	0	0	0	0	0	0
Tall <i>E. delegatensis</i> forest	Regen.	10	0	0	14 300	100	300	14 700
	Regrowth	3900	2200	1000	38 900	900	12 200	59 000
	Mature	53 800	1100	7500	103 600	2100	27 400	195 500
	Unknown	300	20	200	4000	300	4000	8 700
Tall <i>E. nitida</i> forest	Regen.	0	0	0	200	0	0	200
	Regrowth	10 400	10	200	2300	10	300	13 200
	Mature	55 400	20	400	4600	100	400	60 900
	Unknown	10	0	10	30	0	0	50
Tall <i>E. obliqua</i> forest	Regen.	100	0	200	29 800	300	500	30 800
	Regrowth	10 900	800	6200	97 100	2000	46 100	163 100
	Mature	47 000	500	14 000	125 800	3600	22 200	213 000
	Unknown	100	20	100	2400	100	2800	5400
Wet <i>E. viminalis</i> forest on basalt	Regen.	0	0	0	0	0	30	30
	Regrowth	40	10	100	300	10	1100	1700
	Mature	0	0	300	400	20	1200	1900
	Unknown	0	0	0	0	0	400	400
Sub-alpine eucalypt forests								
<i>E. coccoifera</i> dry forest	Regen.	0	0	0	100	0	0	100
	Regrowth	7500	600	10	1400	500	800	10 800
	Mature	27 100	200	100	3900	2500	4600	38 400
	Unknown	3100	10	10	600	400	1000	5200
<i>E. subcrenulata</i> forest	Regen.	0	0	0	100	0	0	100
	Regrowth	1100	0	0	700	10	0	1800
	Mature	6600	0	100	1600	20	10	8200
	Unknown	100	0	0	0	0	0	100
Non-eucalypt forests*								

<i>Acacia melanoxylon</i> on flats	Unknown	400	100	1500	4700	200	2100	9000
<i>Acacia melanoxylon</i> on rises	Unknown	2600	100	600	5900	400	3400	13 000
<i>Allocasuarina verticillata</i> forest	Unknown	600	40	0	0	100	800	1400
<i>Banksia serrata</i> woodland	Unknown	100	0	0	0	0	40	200
Callidendrous and thamnic rainforest on fertile sites	Unknown	66 400	200	26 600	82 700	500	14 200	190 600
<i>Callitris rhomboidea</i> forest	Unknown	300	20	30	100	100	300	800
Huon Pine forest	Unknown	7500	0	10	1400	50	10	9000
King Billy Pine forest	Unknown	16 700	0	100	2800	500	10	20 100
King Billy Pine with deciduous beech	Unknown	800	0	0	30	40	0	800
<i>Leptospermum</i> sp./ <i>Melaleuca squarrosa</i> swamp forest	Unknown	9200	100	600	3500	300	5300	18 900
<i>Melaleuca ericifolia</i> forest	Unknown	400	0	0	10	10	200	600
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	Unknown	100	30	20	40	20	40	300
Pencil Pine forest	Unknown	300	0	0	0	0	0	300
Pencil Pine with deciduous beech	Unknown	200	0	0	0	0	0	200
Silver wattle (<i>Acacia dealbata</i>)	Unknown	3800	200	4300	26 100	700	16 900	52 000
Thamnic rainforest on less fertile sites	Unknown	256 000	100	12 200	93 200	3900	11 700	377 100
TOTAL		930 400	18 500	155 600	1 062 300	80 500	922 000	3 169 200

* Non-eucalypt communities cannot readily be mapped by growth stage.

Table 1.1b(ii) Distribution of growth stages distribution of each native forest type within broad tenure groups as at 30 June 2001

(Figures are the area of each growth stage expressed as a percentage of the total area of that forest type within a tenure group)

RN = Regeneration RG = Regrowth MO = Mature/Overmature UNK = Unknown

RFA Forest Vegetation Community	Land Tenure Group											
	Conservation & Public & Forest Reserves				Other State forest and publicly managed land				Private freehold land			
	RN %	RG %	MO %	UNK %	RN %	RG %	MO %	UNK %	RN %	RG %	MO %	UNK %
Dry eucalypt forest												
Coastal <i>E. amygdalina</i> dry forest	0	4	90	6	5	9	81	5	0	15	71	14
Dry <i>E. delegatensis</i> forest	0	13	84	3	8	19	69	3	0	13	78	9
Dry <i>E. nitida</i> forest	0	23	77	0	4	21	74	0	0	8	92	0
Dry <i>E. obliqua</i> forest	0	12	87	1	14	25	59	2	0	32	63	4
<i>E. amygdalina</i> on dolerite	0	5	94	1	10	13	75	2	0	13	80	8
<i>E. amygdalina</i> on sandstone	0	1	97	1	11	18	71	0	0	14	82	4
<i>E. morrisbyi</i> forest	0	0	0	0	0	0	0	0	0	0	100	0
<i>E. pauciflora</i> on dolerite	0	7	89	4	0	7	81	11	0	13	72	15
<i>E. pauciflora</i> on sediments	0	5	94	1	2	6	83	8	0	10	72	18
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	1	6	93	0	4	17	78	0	0	12	88	0
<i>E. risdonii</i> forest	0	87	13	0	0	0	0	0	0	75	25	0
<i>E. rodwayi</i> forest	0	9	84	6	6	15	69	10	0	18	71	11
<i>E. sieberi</i> forest on granite	0	1	97	3	5	7	85	3	0	15	63	22
<i>E. sieberi</i> on other substrates	0	4	94	2	14	4	80	2	0	20	75	5
<i>E. tenuiramis</i> on dolerite	0	7	92	0	14	11	75	0	0	13	87	0
<i>E. tenuiramis</i> on granite	0	0	100	0	0	0	100	0	0	0	100	0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	0	7	93	0	0	73	15	12	0	2	98	0
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	0	19	81	0	13	22	64	1	0	58	37	5
Furneaux <i>E. nitida</i> forest	0	0	100	0	0	0	100	0	0	8	91	1
Furneaux <i>E. viminalis</i> forest	0	0	100	0	0	0	100	0	0	0	100	0
Grassy <i>E. globulus</i> forest	0	5	95	0	1	47	52	0	0	17	83	0
Grassy <i>E. viminalis</i> forest	0	4	93	3	36	3	60	1	0	11	86	3
Inland <i>E. amygdalina</i> forest	0	13	85	2	4	16	73	7	0	19	75	6
Inland <i>E. tenuiramis</i> forest	0	17	83	0	14	17	68	1	0	26	74	1
Shrubby <i>E. ovata</i> forest	0	25	72	3	2	37	51	10	0	34	52	14

Wet eucalypt forest												
<i>E. brookeriana</i> wet forest	0	44	56	0	2	42	55	1	2	27	69	1
<i>E. regnans</i> forest	0	20	79	1	9	50	38	3	1	58	34	7
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	0	51	49	0	0	81	19	0	0	60	40	0
Tall <i>E. delegatensis</i> forest	0	10	89	1	9	24	64	3	1	28	62	9
Tall <i>E. nitida</i> forest	0	16	84	0	3	32	65	0	0	41	58	0
Tall <i>E. obliqua</i> forest	0	22	77	0	12	38	50	1	1	64	31	4
Wet <i>E. viminalis</i> on basalt	0	38	62	0	0	46	53	1	1	41	43	15
Sub-alpine eucalypt forest												
<i>E. coccifera</i> dry forest	0	21	71	8	1	20	68	11	0	13	71	16
<i>E. subcrenulata</i> forest	0	14	85	1	5	30	65	0	0	30	70	0
Non-eucalypt forest*												
<i>Acacia melanoxylon</i> on flats	0	0	0	100	0	0	0	100	0	0	0	100
<i>Acacia melanoxylon</i> on rises	0	0	0	100	0	0	0	100	0	0	0	100
<i>Allocasuarina verticillata</i> forest	0	0	0	100	0	0	0	100	0	0	0	100
<i>Banksia serrata</i> woodland	0	0	0	100	0	0	0	0	0	0	0	100
Callidendrous and thamnic rainforest on fertile sites	0	0	0	100	0	0	0	100	0	0	0	100
<i>Callitris rhomboidea</i> forest	0	0	0	100	0	0	0	100	0	0	0	100
Huon Pine forest	0	0	0	100	0	0	0	100	0	0	0	100
King Billy Pine forest	0	0	0	100	0	0	0	100	0	0	0	100
King Billy Pine with deciduous beech	0	0	0	100	0	0	0	100	0	0	0	0
<i>Leptospermum sp./Melaleuca squarrosa</i> swamp forest	0	0	0	100	0	0	0	100	0	0	0	100
<i>Melaleuca ericifolia</i> forest	0	0	0	100	0	0	0	100	0	0	0	100
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	0	0	0	100	0	0	0	100	0	0	0	100
Pencil Pine forest	0	0	0	100	0	0	0	0	0	0	0	0
Pencil Pine with deciduous beech	0	0	0	100	0	0	0	0	0	0	0	0
Silver wattle (<i>Acacia dealbata</i>)	0	0	0	100	0	0	0	100	0	0	0	100
Thamnic rainforest on less fertile sites	0	0	0	100	0	0	0	100	0	0	0	100
TOTAL	0	9	52	38	8	21	50	22	0	20	68	12

* Non-eucalypt communities cannot readily be mapped by growth stage.

Table 1.1b(iii) Changes in distribution OF growth stages distribution of each forest type as at 30 June 2001

(Figures are the area of each growth stage expressed as a percentage of the total area of that forest type)

RFA Forest Vegetation Community	Distribution in 1996 (%)				Distribution in 2001 (%)				Change in percentage points since 1996			
	RN %	RG %	MO %	UNK %	RN %	RG %	MO %	UNK %	RN %	RG %	MO %	UNK %
Dry eucalypt forest												
Coastal <i>E. amygdalina</i> dry forest	2	10	88	0	2	9	80	9	0	0	-8	9
Dry <i>E. delegatensis</i> forest	4	16	81	0	3	15	76	5	0	0	-5	5
Dry <i>E. nitida</i> forest	0	23	77	0	1	22	77	0	0	0	0	0
Dry <i>E. obliqua</i> forest	6	23	70	0	6	24	67	2	0	1	-3	2
<i>E. amygdalina</i> on dolerite	2	12	86	0	2	12	81	6	-1	0	-5	6
<i>E. amygdalina</i> on sandstone	3	13	85	0	3	13	81	3	0	0	-3	3
<i>E. morrisbyi</i> forest	0	0	100	0	0	0	100	0	0	0	0	0
<i>E. pauciflora</i> on dolerite	0	14	86	0	0	12	75	14	0	-2	-11	14
<i>E. pauciflora</i> on sediments	0	10	90	0	1	8	80	12	0	-2	-10	12
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	1	11	88	0	1	12	88	0	0	0	0	0
<i>E. risdonii</i> forest	0	81	19	0	0	81	19	0	0	0	0	0
<i>E. rodwayi</i> forest	0	17	83	0	0	18	71	11	0	1	-12	11
<i>E. sieberi</i> forest on granite	3	5	92	0	3	7	85	5	0	2	-7	5
<i>E. sieberi</i> on other substrates	8	9	82	1	9	7	82	2	1	-3	0	1
<i>E. tenuiramis</i> on dolerite	4	9	87	0	4	9	87	0	0	0	0	0
<i>E. tenuiramis</i> on granite	0	1	99	0	0	0	100	0	0	-1	1	0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	0	4	96	0	0	4	95	0	0	0	0	0
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	5	34	61	0	5	36	57	3	0	2	-4	3
Furneaux <i>E. nitida</i> forest	0	2	98	0	0	2	98	0	0	0	0	0
Furneaux <i>E. viminalis</i> forest	0	0	100	0	0	0	100	0	0	0	0	0
Grassy <i>E. globulus</i> forest	0	14	86	0	0	13	87	0	0	-1	1	0
Grassy <i>E. viminalis</i> forest	1	11	88	0	1	11	86	3	0	-1	-2	3
Inland <i>E. amygdalina</i> forest	0	22	78	0	0	18	76	6	0	-4	-2	6
Inland <i>E. tenuiramis</i> forest	0	25	75	0	0	24	75	1	0	0	0	1
Shrubby <i>E. ovata</i> forest	0	35	64	0	0	33	53	13	0	-2	-11	13
Wet eucalypt forest												
<i>E. brookeriana</i> wet forest	1	35	64	0	2	35	62	1	1	0	-2	1

<i>E. regnans</i> forest	8	45	47	1	8	46	43	3	0	1	-3	2
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	0	63	37	0	0	63	37	0	0	0	0	0
Tall <i>E. delegatensis</i> forest	5	22	72	0	5	21	70	3	0	-1	-2	3
Tall <i>E. nitida</i> forest	0	18	82	0	0	18	82	0	0	0	0	0
Tall <i>E. obliqua</i> forest	8	41	52	0	7	40	52	1	0	-1	0	1
Wet <i>E. viminalis</i> on basalt	0	42	57	0	1	42	47	11	0	-1	-10	11
Sub-alpine eucalypt forest												
<i>E. coccifera</i> dry forest	0	19	81	0	0	20	70	10	0	1	-10	10
<i>E. subcrenulata</i> forest	1	18	81	0	1	18	80	1	0	0	-1	1
Non-eucalypt forest*												
<i>Acacia melanoxylon</i> on flats	0	0	0	100	0	0	0	100	0	0	0	0
<i>Acacia melanoxylon</i> on rises	0	0	0	100	0	0	0	100	0	0	0	0
<i>Allocasuarina verticillata</i> forest	0	0	0	100	0	0	0	100	0	0	0	0
<i>Banksia serrata</i> woodland	0	0	0	100	0	0	0	100	0	0	0	0
Callidendrous and thamnic rainforest on fertile sites	0	0	0	100	0	0	0	100	0	0	0	0
<i>Callitris rhomboidea</i> forest	0	0	0	100	0	0	0	100	0	0	0	0
Huon Pine forest	0	0	0	100	0	0	0	100	0	0	0	0
King Billy Pine forest	0	0	0	100	0	0	0	100	0	0	0	0
King Billy Pine with deciduous beech	0	0	0	100	0	0	0	100	0	0	0	0
<i>Leptospermum</i> sp./ <i>Melaleuca</i> <i>squarrosa</i> swamp forest	0	0	0	100	0	0	0	100	0	0	0	0
<i>Melaleuca ericifolia</i> forest	0	0	0	100	0	0	0	100	0	0	0	0
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	0	0	0	100	0	0	0	100	0	0	0	0
Pencil Pine forest	0	0	0	100	0	0	0	100	0	0	0	0
Pencil Pine with deciduous beech	0	0	0	100	0	0	0	100	0	0	0	0
Silver wattle (<i>Acacia dealbata</i>)	0	0	0	100	0	0	0	100	0	0	0	0
Thamnic rainforest on less fertile sites	0	0	0	100	0	0	0	100	0	0	0	0

* Non-eucalypt communities cannot readily be mapped by growth stage.

APPENDIX 1.1c

Table 1.1c(i) Extent of area of native forest types in public and private reserves as at 30 June 2001

RFA Forest Vegetation Community	Public Land				Private Land		TOTAL (ha)
	Dedicated formal reserve (ha)	Other formal reserve (Min*) (ha)	Informal reserve (ha)	Other public land (ha)	Private CAR reserves (ha)	Other private land (ha)	
Dry eucalypt forests							
Coastal <i>E. amygdalina</i> forest	23 300	35 200	8000	53 500	100	69 000	189 100
Dry <i>E. delegatensis</i> forest	38 800	32 300	20 400	99 000	200	97 800	288 600
Dry <i>E. nitida</i> forest	93 900	40 900	2400	16 500	100	6000	159 700
Dry <i>E. obliqua</i> forest	16 100	22 800	12 600	58 600	40	52 000	162 200
<i>E. amygdalina</i> on dolerite	4400	15 400	7300	18 300	300	131 800	177 500
<i>E. amygdalina</i> on sandstone	300	4200	1000	7000	0	17 600	30 100
<i>E. morrisbyi</i> forest	0	0	0	0	0	20	20
<i>E. pauciflora</i> on dolerite	200	600	2300	2200	0	13 600	18 800
<i>E. pauciflora</i> on sediments	2800	1100	1100	2300	0	8900	16 200
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	15 300	10 100	10 900	13 400	500	100 700	151 000
<i>E. risdonii</i> forest	40	100	10	0	0	200	400
<i>E. rodwayi</i> forest	20	100	200	200	20	8000	8700
<i>E. sieberi</i> forest on granite	2600	1100	1700	10 000	0	2200	17 700
<i>E. sieberi</i> on other substrates	2000	6400	3000	27 200	10	7200	46 000
<i>E. tenuiramis</i> on dolerite	2300	2900	600	1800	0	700	8400
<i>E. tenuiramis</i> on granite	1700	1100	100	0	0	200	3000
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	300	0	30	30	100	800	1200
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	300	9400	2300	11 600	30	15 600	39 200
Furneaux <i>E. nitida</i> forest	4200	2700	300	15 400	30	7300	29 800
Furneaux <i>E. viminalis</i> forest	0	100	0	0	0	20	100
Grassy <i>E. globulus</i> forest	4500	1500	200	400	10	7700	14 300
Grassy <i>E. viminalis</i> forest	600	1800	400	1400	100	108 900	113 300
Inland <i>E. amygdalina</i> forest	700	1400	400	1100	400	21 400	25 400
Inland <i>E. tenuiramis</i> forest	2000	4900	700	1100	200	46 100	55 000
Shrubby <i>E. ovata</i> forest	100	200	100	300	100	6400	7100

Wet eucalypt forests							
<i>E. brookeriana</i> wet forest	0	900	100	1300	0	2100	4500
<i>E. regnans</i> forest	4700	5200	6300	50 800	0	5000	72 100
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	100	50	300	100	40	1800	2400
Tall <i>E. delegatensis</i> forest	54 100	15 700	19 600	144 500	20	43 900	277 900
Tall <i>E. nitida</i> forest	50 100	16 300	600	6600	10	700	74 300
Tall <i>E. obliqua</i> forest	34 800	44 400	32 500	229 000	200	71 400	412 300
Wet <i>E. viminalis</i> forest on basalt	30	400	100	700	0	2800	4000
Sub-alpine eucalypt forests							
<i>E. coccifera</i> dry forest	22 800	16 000	3500	5800	50	6400	54 500
<i>E. subcrenulata</i> forest	7600	200	900	1500	0	10	10 200
Non-eucalypt forests							
<i>Acacia melanoxylon</i> on flats	600	1300	400	4600	0	2100	9000
<i>Acacia melanoxylon</i> on rises	100	3100	600	5700	10	3400	13 000
<i>Allocasuarina verticillata</i> forest	500	40	40	40	20	700	1400
<i>Banksia serrata</i> woodland	100	0	0	0	0	40	200
Callidendrous and thamnic rainforest on fertile sites	40 900	52 100	10 700	72 600	100	14 200	190 600
<i>Callitris rhomboidea</i> forest	300	30	100	100	0	300	800
Huon Pine forest	6300	1300	100	1300	10	0	9000
King Billy Pine forest	10 300	6500	300	3000	10	0	20 100
King Billy Pine with deciduous beech	200	600	0	100	0	0	800
<i>Leptospermum sp./Melaleuca squarrosa</i> swamp forest	7400	2300	400	3400	0	5300	18 900
<i>Melaleuca ericifolia</i> forest	200	200	0	20	0	200	600
<i>Notelaea ligustrina</i> and/or	200	10	0	40	0	40	300
<i>Pomaderris apetala</i> forest							
Pencil Pine forest	300	0	0	0	0	0	300
Pencil Pine with deciduous beech	200	0	0	0	0	0	200
Silver wattle (<i>Acacia dealbata</i>) forest	2200	5900	5100	21 900	100	16 900	52 000
Thamnic rainforest on less fertile sites	169 000	99 200	13 100	84 100	20	11 700	377 100
TOTAL	629 300	468 100	171 000	978 800	2800	919 200	3 169 200

* Subject to the *Mineral Resources Development Act 1995*.

Table 1.1c(ii) Change in reservation status of forest types as at 30 June 2001

RFA Forest Vegetation Community	Forest in 1996		Forest in 2001				Change in proportion reserved since RFA (percentage points)
	Total area (ha)	Percentage of forest then in reserves (%)	Total area (ha)	Area in formal reserves (ha)	Area in informal and private CAR reserves (ha)	Percentage of existing forest now in reserves (%)	
Dry eucalypt forests							
Coastal <i>E. amygdalina</i> dry forest	190 200	17.1	189 100	58 500	8100	35.2	18.1
Dry <i>E. delegatensis</i> forest	289 600	25.8	288 600	71 100	20 600	31.8	5.9
Dry <i>E. nitida</i> forest	159 900	75.6	159 700	134 800	2400	85.9	10.3
Dry <i>E. obliqua</i> forest	164 100	22.5	162 200	38 900	12 700	31.8	9.3
<i>E. amygdalina</i> on dolerite	178 300	7.7	177 500	19 700	7700	15.4	7.8
<i>E. amygdalina</i> on sandstone	30 100	6.0	30 100	4400	1000	18.0	11.9
<i>E. morrisbyi</i> forest	20	0.0	20	0	0	0.0	0.0
<i>E. pauciflora</i> on dolerite	18 800	12.5	18 800	700	2300	16.0	3.5
<i>E. pauciflora</i> on sediments	16 200	24.1	16 200	3800	1100	30.5	6.4
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	151 300	9.2	151 000	25 500	11 400	24.4	15.2
<i>E. risdonii</i> forest	400	44.5	400	200	10	46.4	2.0
<i>E. rodwayi</i> forest	8700	3.2	8700	200	300	4.8	1.6
<i>E. sieberi</i> forest on granite	17 700	12.4	17 700	3700	1700	30.6	18.2
<i>E. sieberi</i> on other substrates	46 000	13.7	45 900	8400	3000	24.9	11.3
<i>E. tenuiramis</i> on dolerite	8400	42.4	8400	5300	600	70.0	27.6
<i>E. tenuiramis</i> on granite	3000	43.6	3000	2700	100	93.4	49.8
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	1200	23.0	1200	300	100	32.5	9.5
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	40 600	16.0	39 200	9600	2300	30.6	14.5
Furneaux <i>E. nitida</i> forest	29 800	18.6	29 800	6900	300	24.2	5.5
Furneaux <i>E. viminalis</i> forest	100	0.0	100	100	0	84.7	84.7
Grassy <i>E. globulus</i> forest	14 400	29.2	14 300	6000	200	43.3	14.1
Grassy <i>E. viminalis</i> forest	113 300	1.2	113 300	2400	500	2.6	1.3
Inland <i>E. amygdalina</i> forest	25 800	5.4	25 400	2100	800	11.6	6.1
Inland <i>E. tenuiramis</i> forest	55 000	5.9	55 000	6900	900	14.2	8.2
Shrubby <i>E. ovata</i> forest	7200	3.7	7100	200	300	6.9	3.2
Wet eucalypt forests							
<i>E. brookeriana</i> wet forest	4600	5.9	4500	900	100	22.9	17.0

<i>E. regnans</i> forest	76 000	17.6	72 100	10 000	6300	22.6	5.0
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	2400	5.2	2400	200	400	22.1	16.9
Tall <i>E. delegatensis</i> forest	285 700	26.3	277 900	69 800	19 600	32.2	5.9
Tall <i>E. nitida</i> forest	74 400	86.1	74 300	66 400	600	90.2	4.0
Tall <i>E. obliqua</i> forest	425 600	17.9	412 300	79 200	32 600	27.1	9.3
Wet <i>E. viminalis</i> forest on basalt	4200	7.6	4000	500	100	13.7	6.1
Sub-alpine eucalypt forests							
<i>E. coccifera</i> dry forest	54 500	69.1	54 500	38 800	3500	77.5	8.4
<i>E. subcrenulata</i> forest	10 200	83.2	10 200	7800	900	85.1	2.0
Non-eucalypt forests							
<i>Acacia melanoxylon</i> on flats	9000	10.7	9000	1900	400	25.1	14.4
<i>Acacia melanoxylon</i> on rises	13 300	9.9	13 000	3200	600	29.5	19.6
<i>Allocasuarina verticillata</i> forest	1400	36.9	1400	600	100	44.9	7.9
<i>Banksia serrata</i> woodland	200	73.8	200	100	0	73.8	0.0
Callidendrous and thamnic rainforest on fertile sites	192 000	45.1	190 600	93 000	10 800	54.5	9.4
<i>Callitris rhomboidea</i> forest	800	32.9	800	300	100	48.5	15.6
Huon Pine forest	8900	77.4	9000	7500	100	85.2	7.8
King Billy Pine forest	20 100	82.0	20 100	16 800	300	85.0	3.0
King Billy Pine with deciduous beech	800	78.5	800	800	0	91.3	12.9
<i>Leptospermum sp./Melaleuca squarrosa</i> swamp forest	19 000	45.3	18 900	9700	400	53.9	8.7
<i>Melaleuca ericifolia</i> forest	600	36.7	600	400	0	65.1	28.4
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	300	65.9	300	200	0	70.9	4.9
Pencil Pine forest	300	99.9	300	300	0	99.9	0.0
Pencil Pine with deciduous beech	200	100.0	200	200	0	100.0	0.0
Silver wattle (<i>Acacia dealbata</i>) forest	54 100	18.0	52 000	8100	5200	25.5	7.5
Thamnic rainforest on less fertile sites	378 000	61.3	377 100	268 200	13 200	74.6	13.3
TOTAL	3 207 200	30.5	3 169 200	1 097 400	173 800	40.1	9.6

Table 1.1c(iii) Reservation status of native forest types by IBRA biogeographic regions as at 30 June 2001

RFA Forest Vegetation Community	Furneaux Region			Woolnorth Region		
	Area reserved (ha)	Percentage reserved (%)	Total area (ha)	Area reserved (ha)	Percentage reserved (%)	Total area (ha)
Coastal <i>E. amygdalina</i> dry forest	0	0	0	7300	30	24 500
Dry <i>E. delegatensis</i> forest	0	0	0	2000	51	3900
Dry <i>E. nitida</i> forest	0	0	0	5600	40	14 100
Dry <i>E. obliqua</i> forest	0	0	0	9000	31	28 600
<i>E. amygdalina</i> forest on dolerite	0	0	0	1500	8	17 800
<i>E. amygdalina</i> forest on sandstone	0	0	0	20	7	300
<i>E. morrisbyi</i> forest	0	0	0	0	0	0
<i>E. pauciflora</i> on dolerite	0	0	0	0	0	0
<i>E. pauciflora</i> on sediments	0	0	0	0	0	0
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	0	0	0	0	0	0
<i>E. risdonii</i> forest	0	0	0	0	0	0
<i>E. rodwayi</i> forest	0	0	0	100	100	100
<i>E. sieberi</i> forest on granite	0	0	0	0	0	0
<i>E. sieberi</i> on other substrates	0	0	0	0	0	0
<i>E. tenuiramis</i> on dolerite	0	0	0	0	0	0
<i>E. tenuiramis</i> on granite	0	0	0	0	0	0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	0	0	0	0	0	10
<i>E. viminalis/ovata/amygdalina/obliqua</i> damp forest	0	0	0	9500	33	28 800
Furneaux <i>E. nitida</i> forest	7200	24	29 800	0	0	0
Furneaux <i>E. viminalis</i> forest	100	100	100	0	0	0
Grassy <i>E. globulus</i> forest	0	0	0	0	0	0
Grassy <i>E. viminalis</i> forest	0	0	0	200	7	2900
Inland <i>E. amygdalina</i> forest	0	0	0	0	0	900
Inland <i>E. tenuiramis</i> forest	0	0	0	0	0	0
Shrubby <i>E. ovata</i> forest	0	0	0	100	3	3000
<i>E. brookeriana</i> wet forest	0	0	0	1000	23	4400
<i>E. regnans</i> forest	0	0	0	800	31	2600

King Island <i>E. globulus/brookeriana/viminalis</i> forest	0	0	0	500	21	2400
Tall <i>E. delegatensis</i> forest	0	0	0	4800	35	13 700
Tall <i>E. nitida</i> forest	0	0	0	1000	34	2900
Tall <i>E. obliqua</i> forest	0	0	0	21 000	17	120 200
Wet <i>E. viminalis</i> forest on basalt	0	0	0	500	20	2500
<i>E. coccifera</i> dry forest	0	0	0	20	67	30
<i>E. subcrenulata</i> forest	0	0	0	100	100	100
<i>Acacia melanoxylon</i> forest on flats	0	0	0	1900	24	8000
<i>Acacia melanoxylon</i> forest on rises	0	0	0	800	10	7700
<i>Allocasuarina verticillata</i> forest	100	50	200	200	100	200
<i>Banksia serrata</i> woodland	0	0	0	100	50	200
Callidendrous and thamnic rainforest on fertile sites	0	0	0	10 900	38	28 600
<i>Callitris rhomboidea</i> forest	20	20	100	0	0	0
Huon Pine forest	0	0	0	0	0	0
King Billy Pine forest	0	0	0	10	100	10
King Billy Pine with deciduous beech	0	0	0	0	0	0
<i>Leptospermum sp./Melaleuca squarrosa</i> swamp forest	0	0	300	900	12	7400
<i>Melaleuca ericifolia</i> forest	0	0	10	200	100	200
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	0	0	0	0	0	50
Pencil Pine forest	0	0	0	0	0	0
Pencil Pine with deciduous beech	0	0	0	0	0	0
Silver wattle (<i>Acacia dealbata</i>) forest	0	0	0	4200	26	16 300
Thamnic rainforest on less fertile sites	0	0	0	7900	31	25 300
TOTAL	7400	24	30 600	92 100	25	367 700

Table 1.1c(iii) Continued

RFA Forest Vegetation Community	Ben Lomond Region			Freycinet Region		
	Area reserved (ha)	Percentage reserved (%)	Total area (ha)	Area reserved (ha)	Percentage reserved (%)	Total area (ha)
Coastal <i>E. amygdalina</i> dry forest	46 100	35	132 400	12 200	43	28 500
Dry <i>E. delegatensis</i> forest	9500	32	29 700	12 200	18	66 700
Dry <i>E. nitida</i> forest	0	0	0	0	0	0
Dry <i>E. obliqua</i> forest	6300	22	28 700	9300	30	30 500
<i>E. amygdalina</i> forest on dolerite	4200	10	42 300	18 900	27	70 500
<i>E. amygdalina</i> forest on sandstone	200	20	1000	4400	18	24 000
<i>E. morrisbyi</i> forest	0	0	0	0	0	0
<i>E. pauciflora</i> on dolerite	0	0	0	800	57	1400
<i>E. pauciflora</i> on sediments	900	50	1800	0	0	50
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	0	0	0	32 100	29	110 100
<i>E. risdonii</i> forest	0	0	0	0	0	0
<i>E. rodwayi</i> forest	0	0	40	30	1	2200
<i>E. sieberi</i> forest on granite	4900	29	16 800	500	63	800
<i>E. sieberi</i> on other substrates	10 200	24	43 000	1300	45	2900
<i>E. tenuiramis</i> on dolerite	0	0	0	5400	71	7600
<i>E. tenuiramis</i> on granite	0	0	0	2800	93	3000
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	0	0	0	300	30	1000
<i>E. viminalis/ovata/amygdalina/obliqua</i> damp forest	700	35	2000	0	0	0
Furneaux <i>E. nitida</i> forest	0	0	0	0	0	0
Furneaux <i>E. viminalis</i> forest	0	0	0	0	0	0
Grassy <i>E. globulus</i> forest	0	0	0	5200	48	10 900
Grassy <i>E. viminalis</i> forest	1000	5	19 400	800	4	21 100
Inland <i>E. amygdalina</i> forest	900	21	4200	300	50	600
Inland <i>E. tenuiramis</i> forest	0	0	0	100	4	2400
Shrubby <i>E. ovata</i> forest	30	8	400	100	14	700
<i>E. brookeriana</i> wet forest	0	0	0	0	0	20
<i>E. regnans</i> forest	5900	24	24 800	800	25	3200
King Island <i>E. globulus/brookeriana/viminalis</i> forest	0	0	0	0	0	0

Tall <i>E. delegatensis</i> forest	7400	16	46 200	5400	25	21 200
Tall <i>E. nitida</i> forest	0	0	0	0	0	0
Tall <i>E. obliqua</i> forest	7700	16	49 500	9900	33	30 100
Wet <i>E. viminalis</i> forest on basalt	0	0	100	100	13	800
<i>E. coccifera</i> dry forest	30	100	30	10	1	100
<i>E. subcrenulata</i> forest	0	0	0	0	0	0
<i>Acacia melanoxylon</i> forest on flats	20	7	300	0	0	0
<i>Acacia melanoxylon</i> forest on rises	0	0	100	0	0	0
<i>Allocasuarina verticillata</i> forest	100	33	300	300	60	500
<i>Banksia serrata</i> woodland	0	0	0	0	0	0
Callidendrous and thamnic rainforest on fertile sites	12 300	49	24 900	500	83	600
<i>Callitris rhomboidea</i> forest	0	0	0	400	57	700
Huon Pine forest	0	0	0	0	0	0
King Billy Pine forest	0	0	0	0	0	0
King Billy Pine with deciduous beech	0	0	0	0	0	0
<i>Leptospermum</i> sp./ <i>Melaleuca squarrosa</i> swamp forest	40	100	40	30	30	100
<i>Melaleuca ericifolia</i> forest	200	50	400	0	0	0
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	10	50	20	20	100	20
Pencil Pine forest	0	0	0	0	0	0
Pencil Pine with deciduous beech	0	0	0	0	0	0
Silver wattle (<i>Acacia dealbata</i>) forest	4300	21	20 500	700	33	2100
Thamnic rainforest on less fertile sites	0	0	0	0	0	0
TOTAL	122 600	25	489 000	125 000	28	444 100

Table 1.1c(iii) Continued

RFA Forest Vegetation Community	Midlands Region			Central Highlands Region		
	Area reserved (ha)	Percentage reserved (%)	Total area (ha)	Area reserved (ha)	Percentage reserved (%)	Total area (ha)
Coastal <i>E. amygdalina</i> dry forest	700	21	3300	200	67	300
Dry <i>E. delegatensis</i> forest	1800	17	10 300	55 000	34	164 100
Dry <i>E. nitida</i> forest	0	0	10	4800	86	5600
Dry <i>E. obliqua</i> forest	2300	17	13 600	1100	17	6400
<i>E. amygdalina</i> forest on dolerite	2000	5	41 000	800	14	5600
<i>E. amygdalina</i> forest on sandstone	700	18	3900	0	0	50
<i>E. morrisbyi</i> forest	0	0	20	0	0	0
<i>E. pauciflora</i> on dolerite	0	0	500	2200	13	17 000
<i>E. pauciflora</i> on sediments	0	0	1300	4100	32	13 000
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	2800	10	28 400	200	11	1800
<i>E. risdonii</i> forest	200	50	400	0	0	0
<i>E. rodwayi</i> forest	0	0	100	300	5	6200
<i>E. sieberi</i> forest on granite	0	0	0	0	0	0
<i>E. sieberi</i> on other substrates	0	0	0	0	0	0
<i>E. tenuiramis</i> on dolerite	0	0	0	0	0	10
<i>E. tenuiramis</i> on granite	0	0	0	0	0	0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	0	0	100	0	0	0
<i>E. viminalis/ovata/amygdalina/obliqua</i> damp forest	1300	17	7500	500	56	900
Furneaux <i>E. nitida</i> forest	0	0	0	0	0	0
Furneaux <i>E. viminalis</i> forest	0	0	0	0	0	0
Grassy <i>E. globulus</i> forest	900	31	2900	0	0	0
Grassy <i>E. viminalis</i> forest	700	1	59 500	200	2	10 200
Inland <i>E. amygdalina</i> forest	1700	9	19 800	0	0	0
Inland <i>E. tenuiramis</i> forest	5400	16	33 900	2200	13	17 600
Shrubby <i>E. ovata</i> forest	200	7	2700	0	0	100
<i>E. brookeriana</i> wet forest	0	0	0	10	100	10
<i>E. regnans</i> forest	300	27	1100	1500	19	7900
King Island <i>E. globulus/brookeriana/viminalis</i> forest	0	0	0	0	0	0

Tall <i>E. delegatensis</i> forest	1200	29	4200	45 100	31	147 000
Tall <i>E. nitida</i> forest	0	0	0	1900	95	2000
Tall <i>E. obliqua</i> forest	1500	19	7900	3900	29	13 500
Wet <i>E. viminalis</i> forest on basalt	0	0	100	40	8	500
<i>E. coccifera</i> dry forest	0	0	0	37 800	76	49 900
<i>E. subcrenulata</i> forest	10	100	10	3300	92	3600
<i>Acacia melanoxylon</i> forest on flats	0	0	0	0	0	0
<i>Acacia melanoxylon</i> forest on rises	0	0	0	40	20	200
<i>Allocasuarina verticillata</i> forest	40	13	300	0	0	0
<i>Banksia serrata</i> woodland	0	0	0	0	0	0
Callidendrous and thamnic rainforest on fertile sites	100	100	100	12 100	49	24 500
<i>Callitris rhomboidea</i> forest	0	0	0	0	0	0
Huon Pine forest	0	0	0	0	0	0
King Billy Pine forest	0	0	0	3600	100	3600
King Billy Pine with deciduous beech	0	0	0	200	100	200
<i>Leptospermum</i> sp./ <i>Melaleuca squarrosa</i> swamp forest	0	0	0	200	50	400
<i>Melaleuca ericifolia</i> forest	0	0	0	0	0	0
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	30	100	30	0	0	0
Pencil Pine forest	0	0	0	300	100	300
Pencil Pine with deciduous beech	0	0	0	200	100	200
Silver wattle (<i>Acacia dealbata</i>) forest	500	26	1900	2800	41	6800
Thamnic rainforest on less fertile sites	40	40	100	41 100	75	54 500
TOTAL	24 400	10	244 900	225 700	40	563 900

Table 1.1c(iii) Continued

RFA Forest Vegetation Community	West & South West Region			D'Entrecasteaux Region		
	Area reserved (ha)	Percentage reserved (%)	Total area (ha)	Area reserved (ha)	Percentage reserved (%)	Total area (ha)
Coastal <i>E. amygdalina</i> dry forest	0	0	0	0	0	100
Dry <i>E. delegatensis</i> forest	5300	87	6100	5800	74	7800
Dry <i>E. nitida</i> forest	123 700	90	13 900	3000	97	3100
Dry <i>E. obliqua</i> forest	14 300	58	24 800	9300	31	29 600
<i>E. amygdalina</i> forest on dolerite	0	0	0	10	5	200
<i>E. amygdalina</i> forest on sandstone	0	0	0	200	25	800
<i>E. morrisbyi</i> forest	0	0	0	0	0	0
<i>E. pauciflora</i> on dolerite	0	0	0	0	0	0
<i>E. pauciflora</i> on sediments	0	0	0	0	0	0
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	0	0	0	1800	17	10 700
<i>E. risdonii</i> forest	0	0	0	0	0	0
<i>E. rodwayi</i> forest	0	0	0	0	0	0
<i>E. sieberi</i> forest on granite	0	0	0	0	0	0
<i>E. sieberi</i> on other substrates	0	0	0	0	0	0
<i>E. tenuiramis</i> on dolerite	0	0	0	500	63	800
<i>E. tenuiramis</i> on granite	0	0	0	0	0	0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	100	100	100	0	0	0
<i>E. viminalis/ovata/amygdalina/obliqua</i> damp forest	0	0	0	0	0	0
Furneaux <i>E. nitida</i> forest	0	0	0	0	0	0
Furneaux <i>E. viminalis</i> forest	0	0	0	0	0	0
Grassy <i>E. globulus</i> forest	0	0	0	100	20	500
Grassy <i>E. viminalis</i> forest	0	0	0	100	50	200
Inland <i>E. amygdalina</i> forest	0	0	0	0	0	0
Inland <i>E. tenuiramis</i> forest	0	0	0	100	9	1100
Shrubby <i>E. ovata</i> forest	0	0	0	10	5	200
<i>E. brookeriana</i> wet forest	10	10	100	0	0	0
<i>E. regnans</i> forest	3200	26	12 200	3800	19	20 400
King Island <i>E. globulus/brookeriana/viminalis</i> forest	0	0	0	0	0	0

Tall <i>E. delegatensis</i> forest	18 100	86	21 000	7500	30	24 600
Tall <i>E. nitida</i> forest	62 300	93	67 000	1800	75	2400
Tall <i>E. obliqua</i> forest	40 300	49	81 600	27 400	25	109 500
Wet <i>E. viminalis</i> forest on basalt	0	0	0	0	0	0
<i>E. coccifera</i> dry forest	600	100	600	3900	100	3900
<i>E. subcrenulata</i> forest	2000	91	2200	3300	79	4200
<i>Acacia melanoxylon</i> forest on flats	400	50	800	0	0	0
<i>Acacia melanoxylon</i> forest on rises	3000	60	5000	0	0	0
<i>Allocasuarina verticillata</i> forest	0	0	0	0	0	0
<i>Banksia serrata</i> woodland	0	0	0	0	0	0
Callidendrous and thamnic rainforest on fertile sites	62 800	60	105 000	5100	74	6900
<i>Callitris rhomboidea</i> forest	0	0	0	0	0	0
Huon Pine forest	7600	85	8900	40	100	40
King Billy Pine forest	10 900	79	13 800	2600	100	2600
King Billy Pine with deciduous beech	600	86	700	10	100	10
<i>Leptospermum</i> sp./ <i>Melaleuca squarrosa</i> swamp forest	7800	83	9400	1200	92	1300
<i>Melaleuca ericifolia</i> forest	0	0	0	0	0	0
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	100	100	100	40	80	50
Pencil Pine forest	0	0	0	10	100	10
Pencil Pine with deciduous beech	0	0	0	0	0	0
Silver wattle (<i>Acacia dealbata</i>) forest	300	50	600	500	13	3800
Thamnic rainforest on less fertile sites	212 300	77	274 000	20 100	87	23 100
TOTAL	575 800	75	770 900	98 200	38	258 100

Table 1.1c(iv) Change in reservation status of forest types relative to their estimated 1750 extent as at 30 June 2001

RFA Forest Vegetation Community	Estimated 1750 extent (ha)	Reserved as at 1996		Reserved as at 2001		Change in proportion of 1750 extent reserved (percentage points)
		Area reserved (ha)	Percentage of 1750 extent (%)	Area reserved (ha)	Percentage of 1750 extent (%)	
Dry eucalypt forests						
Coastal <i>E. amygdalina</i> dry forest	357 800	32 500	9.1	66 600	18.6	9.5
Dry <i>E. delegatensis</i> forest	317 900	74 800	23.5	91 700	28.8	5.3
Dry <i>E. nitida</i> forest	174 400	120 900	69.3	137 200	78.7	9.4
Dry <i>E. obliqua</i> forest	258 200	36 900	14.3	51 600	20.0	5.7
<i>E. amygdalina</i> on dolerite	248 100	13 600	5.5	27 400	11.0	5.5
<i>E. amygdalina</i> on sandstone	114 300	1800	1.6	5400	4.7	3.1
<i>E. morrisbyi</i> forest	300	0	0.0	0	0.0	0.0
<i>E. pauciflora</i> on dolerite	27 800	2300	8.4	3000	10.8	2.4
<i>E. pauciflora</i> on sediments	31 400	3900	12.4	4900	15.7	3.3
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	219 100	14 000	6.4	36 900	16.8	10.5
<i>E. risdonii</i> forest	500	200	33.4	200	34.9	1.5
<i>E. rodwayi</i> forest	11 900	300	2.3	400	3.5	1.2
<i>E. sieberi</i> forest on granite	19 400	2200	11.3	5400	27.8	16.5
<i>E. sieberi</i> on other substrates	52 200	6300	12.1	11 400	21.9	9.9
<i>E. tenuiramis</i> on dolerite	8900	3600	40.1	5900	66.3	26.1
<i>E. tenuiramis</i> on granite	3200	1300	41.1	2800	88.1	47.0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	4700	300	6.0	400	8.4	2.5
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp sclerophyll forest	89 100	6500	7.3	12 000	13.4	6.1
Furneaux <i>E. nitida</i> forest	40 600	5600	13.7	7200	17.7	4.1
Furneaux <i>E. viminalis</i> forest	200	0	0.0	100	57.2	57.2
Grassy <i>E. globulus</i> forest	28 500	4200	14.8	6200	21.7	6.9
Grassy <i>E. viminalis</i> forest	242 900	1400	0.6	2900	1.2	0.6
Inland <i>E. amygdalina</i> forest	76 900	1400	1.8	2900	3.8	2.0
Inland <i>E. tenuiramis</i> forest	123 800	3300	2.6	7800	6.3	3.7
Shrubby <i>E. ovata</i> forest	232 000	300	0.1	500	0.2	0.1
Wet eucalypt forests						

<i>E. brookeriana</i> wet forest	13 500	300	2.0	1000	7.6	5.6
<i>E. regnans</i> forest	99 900	13 400	13.4	16 300	16.3	2.9
King Island <i>E. globulus</i> / <i>brookeriana/viminalis</i> forest	58 300	100	0.2	500	0.9	0.7
Tall <i>E. delegatensis</i> forest	316 800	75 100	23.7	89 400	28.2	4.5
Tall <i>E. nitida</i> forest	87 400	64 100	73.3	67 000	76.7	3.4
Tall <i>E. obliqua</i> forest	606 800	76 100	12.5	111 900	18.4	5.9
Wet <i>E. viminalis</i> forest on basalt	78 100	300	0.4	500	0.7	0.3
Sub-alpine eucalypt forests						
<i>E. coccifera</i> dry forest	59 200	37 700	63.7	42 300	71.5	7.8
<i>E. subcrenulata</i> forest	10 600	8500	80.3	8700	82.2	1.9
Non-eucalypt forests						
<i>Acacia melanoxylon</i> on flats	16 100	1000	6.0	2300	14.0	8.0
<i>Acacia melanoxylon</i> on rises	20 400	1300	6.5	3800	18.8	12.3
<i>Allocasuarina verticillata</i> forest	3500	500	15.1	600	18.3	3.2
<i>Banksia serrata</i> woodland	200	100	58.4	100	58.	0.0
Callidendrous and thamnic rainforest on fertile sites	212 700	86 600	40.7	103 800	48.8	8.1
<i>Callitris rhomboidea</i> forest	1100	300	23.6	400	34.8	11.2
Huon Pine forest	11 000	6900	62.8	7600	69.5	6.7
King Billy Pine forest	20 000	16 500	82.6	17 100	85.6	3.0
King Billy Pine with deciduous beech	800	700	82.9	800	96.5	13.6
<i>Leptospermum sp./Melaleuca</i> <i>squarrosa</i> swamp forest	40 800	8600	21.0	10 200	25.0	3.9
<i>Melaleuca ericifolia</i> forest	19 600	200	1.1	400	2.0	0.9
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	300	200	63.0	200	67.2	4.3
Pencil Pine forest	700	300	49.7	300	49.7	0.0
Pencil Pine with deciduous beech	300	200	73.8	200	73.8	0.0
Silver wattle (<i>Acacia dealbata</i>) forest	59 000	9700	16.5	13 300	22.5	6.0
Thamnic rainforest on less fertile sites	401 100	231 700	57.8	281 400	70.1	12.4
TOTAL	4 822 200	977 900	20.3	1 271 200	26.4	6.1

APPENDIX 1.1d

Table 1.1d(i) Extent of old growth by forest type and reserve type as at 30 June 2001

RFA Forest Vegetation Community	Public Land				Private Land		TOTAL (ha)	Change in area since RFA (1996) (%)
	Dedicated formal reserve (ha)	Other formal reserve (Min*) (ha)	Informal reserve (ha)	Other public land (ha)	Private CAR reserves (ha)	Other private land (ha)		
Dry eucalypt forest								
Coastal <i>E. amygdalina</i> dry forest	13 800	9200	1600	3800	0	11 600	40 000	-0.2
Dry <i>E. delegatensis</i> forest	23 100	16 300	8900	20 900	20	10 100	79 300	-0.6
Dry <i>E. nitida</i> forest	63 800	29 800	1700	8400	100	3500	107 200	-0.1
Dry <i>E. obliqua</i> forest	7700	13 300	5800	12 200	0	7600	46 600	-0.8
<i>E. amygdalina</i> on dolerite	1500	8600	4700	6400	0	9100	30 400	-0.4
<i>E. amygdalina</i> on sandstone	200	1400	600	2900	0	1600	6600	-0.1
<i>E. pauciflora</i> on dolerite	10	300	900	400	0	300	1900	-0.2
<i>E. pauciflora</i> on sediments	2200	300	500	700	0	600	4300	0.0
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	11 900	7200	7900	5800	100	30 600	63 400	-0.7
<i>E. risdonii</i> forest	0	0	0	0	0	10	10	0.0
<i>E. rodwayi</i> forest	10	100	50	40	0	500	700	0.0
<i>E. sieberi</i> forest on granite	400	100	200	100	0	100	1000	-0.1
<i>E. sieberi</i> on other substrates	100	400	300	500	0	400	1700	-0.5
<i>E. tenuiramis</i> on dolerite	1400	2600	400	900	0	200	5500	0.0
<i>E. tenuiramis</i> on granite	1700	1000	100	0	0	200	2900	0.0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	100	0	30	0	0	700	900	0.0
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	40	1200	400	500	0	300	2500	-0.2
Grassy <i>E. globulus</i> forest	3400	500	100	100	10	800	4900	-0.2
Grassy <i>E. viminalis</i> forest	500	300	100	200	0	7500	8500	-0.1
Inland <i>E. amygdalina</i> forest	100	300	100	100	0	2400	2900	0.0
Inland <i>E. tenuiramis</i> forest	500	1300	100	300	100	5700	8000	0.0
Shrubby <i>E. ovata</i> forest	100	100	20	30	20	300	500	0.0
Wet eucalypt forest								
<i>E. brookeriana</i> wet forest	0	40	20	100	0	500	600	-12.9

<i>E. regnans</i> forest	3100	1600	1700	6100	0	300	12 800	-3.6
Tall <i>E. delegatensis</i> forest	42 900	7400	8300	39 500	10	4200	102 300	-2.1
Tall <i>E. nitida</i> forest	34 600	12 500	200	2300	10	100	49 600	0.0
Tall <i>E. obliqua</i> forest	18 200	18 300	9500	32 700	40	2800	81 500	-2.4
Wet <i>E. viminalis</i> forest on basalt	0	100	0	20	0	30	100	0.0
Sub-alpine eucalypt forest								
<i>E. coccifera</i> dry forest	16 700	10 200	1500	2400	10	1900	32 600	0.0
<i>E. subcrenulata</i> forest	5900	100	600	800	0	0	7400	0.0
Non-eucalypt forest								
<i>Allocasuarina verticillata</i> forest	500	40	10	0	20	400	1000	0.0
<i>Banksia serrata</i> woodland	100	0	0	0	0	40	200	0.0
Callidendrous and thamnic rainforest on fertile sites	39 100	47 100	8900	59 200	100	4800	159 200	-0.3
<i>Callitris rhomboidea</i> forest	200	30	100	30	0	200	600	0.0
Huon Pine forest	6100	1200	50	300	10	0	7600	0.6
King Billy Pine forest	10 100	5500	300	1500	10	0	17 300	0.0
King Billy Pine with deciduous beech	200	200	0	30	0	0	400	0.0
<i>Leptospermum</i> sp./ <i>Melaleuca squarrosa</i> swamp forest	7300	900	200	1300	0	200	9900	-0.2
<i>Melaleuca ericifolia</i> forest	0	200	0	0	0	100	300	0.0
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	200	10	0	40	0	30	300	-0.7
Pencil Pine forest	300	0	0	0	0	0	300	0.0
Pencil Pine with deciduous beech	200	0	0	0	0	0	200	0.0
Thamnic rainforest on less fertile sites	165 400	91 300	10 600	63 100	20	5200	335 600	-0.1
TOTAL	483 300	290 800	76 300	273 400	500	114 900	1 239 100	-0.6

* Subject to the *Mineral Resources Development Act 1995*.

Table 1.1d(ii) Reservation status of old growth by forest type as at 30 June 2001

RFA Forest Vegetation Community	Extent of Old growth (ha)			Percentage of old growth now in reserves (%)	Change in proportion reserved since RFA (1996) (percentage points)
	Total area (ha)	Area in formal reserves (ha)	Area in informal and private CAR reserves (ha)		
Dry eucalypt forest					
Coastal <i>E. amygdalina</i> dry forest	40 000	23 000	1600	61.6	30.0
Dry <i>E. delegatensis</i> forest	79 300	39 400	8900	60.9	11.0
Dry <i>E. nitida</i> forest	107 200	93 600	1700	88.9	9.0
Dry <i>E. obliqua</i> forest	46 600	21 000	5800	57.5	17.0
<i>E. amygdalina</i> on dolerite	30 400	10 200	4700	49.0	30.0
<i>E. amygdalina</i> on sandstone	6600	1600	600	32.3	22.0
<i>E. pauciflora</i> on dolerite	1900	300	900	62.9	14.0
<i>E. pauciflora</i> on sediments	4300	2500	500	69.7	7.0
<i>E. pulchella/globulus/viminalis</i> grassy shrubby dry forest	63 400	19 000	8000	42.6	28.0
<i>E. risdonii</i> forest	10	0	0	8.0	1.0
<i>E. rodwayi</i> forest	700	100	50	19.5	4.0
<i>E. sieberi</i> forest on granite	1000	500	200	79.7	61.0
<i>E. sieberi</i> on other substrates	1700	400	300	48.0	29.0
<i>E. tenuiramis</i> on dolerite	5500	4100	400	81.3	41.0
<i>E. tenuiramis</i> on granite	2900	2700	100	94.0	50.0
<i>E. viminalis</i> and/or <i>E. globulus</i> coastal shrubby forest	900	100	30	14.4	0.0
<i>E. viminalis/ovata/amygdalina/</i> <i>obliqua</i> damp forest	2500	1200	400	67.0	40.0
Grassy <i>E. globulus</i> forest	4900	3900	100	81.4	26.0
Grassy <i>E. viminalis</i> forest	8500	800	100	9.8	4.0
Inland <i>E. amygdalina</i> forest	2900	300	100	14.3	9.0
Inland <i>E. tenuiramis</i> forest	8000	1800	200	25.1	15.0
Shrubby <i>E. ovata</i> forest	500	100	40	34.5	10.0
Wet eucalypt forest					
<i>E. brookeriana</i> wet forest	600	40	20	9.4	4.0
<i>E. regnans</i> forest	12 800	4600	1700	49.8	13.0

Tall <i>E. delegatensis</i> forest	102 300	50 300	8300	57.3	9.0
Tall <i>E. nitida</i> forest	49 600	47 000	200	95.1	4.0
Tall <i>E. obliqua</i> forest	81 500	36 500	9500	56.4	22.0
Wet <i>E. viminalis</i> forest on basalt	100	100	0	71.6	28.0
Sub-alpine eucalypt forest					
<i>E. coccifera</i> dry forest	32 600	26 800	1500	86.9	8.0
<i>E. subcrenulata</i> forest	7400	6000	600	88.6	1.0
Non-eucalypt forest					
<i>Allocasuarina verticillata</i> forest	1000	500	30	56.1	10.0
<i>Banksia serrata</i> woodland	200	100	0	73.8	0.0
Callidendrous and thamnic rainforest on fertile sites	159 200	86 200	9000	59.8	10.0
<i>Callitris rhomboidea</i> forest	600	300	100	54.3	16.0
Huon Pine forest	7600	7300	100	96.4	8.0
King Billy Pine forest	17 300	15 500	300	91.6	3.0
King Billy Pine with deciduous beech	400	300	0	91.6	0.0
<i>Leptospermum sp./Melaleuca squarrosa</i> swamp forest	9900	8200	200	84.8	8.0
<i>Melaleuca ericifolia</i> forest	300	200	0	65.1	56.0
<i>Notelaea ligustrina</i> and/or <i>Pomaderris apetala</i> forest	300	200	0	75.5	5.0
Pencil Pine forest	300	300	0	99.9	0.0
Pencil Pine with deciduous beech	200	200	0	100.0	0.0
Thamnic rainforest on less fertile sites	335 600	256 700	10 600	79.6	13.0
TOTAL	1 239 100	774 100	76 700	68.7	14.0

APPENDIX 1.2a

TABLE 1									
Class	Species	Common name	If sensitive are recovery or similar plans being implemented (Y/N)	Instrument being implemented	widespread	vulnerable	rare	endangered	presumed extinct
Fish	<i>Galaxias brevipinnis</i>	Climbing Galaxias	Y	Recovery plan	Y				
	<i>Galaxias johnstoni</i>	Clarence Galaxias			Y			Y	
	<i>Galaxias maculatus</i>	Jollytail							
	<i>Galaxias truttaceus</i>	Spotted Galaxias	Y	Recovery plan					
	<i>Galaxias auratus</i>	Golden Galaxias							
	<i>Galaxias tanycephalus</i>	Saddled Galaxias						Y	
	<i>Galaxias fontanus</i>	Swan Galaxias	Y	Recovery plan				Y	
	<i>Paragalaxias mesotes</i>	Arthurs Paragalaxias							
	<i>Galaxiella pusilla</i>	Dwarf Galaxias					Y		
	<i>Prototroctes maraena</i>	Australian Grayling						Y	
	<i>Gadopsis marmoratus</i>	Blackfish			Y				
Amphibians	<i>Litoria ewingi</i>	Brown Tree Frog	Y	Listing statement	Y				
	<i>Litoria burrowsi</i>	Tasmanian Tree Frog				Y			
	<i>Litoria raniformis</i>	Green and Golden frog							
	<i>Crinia tasmaniensis</i>	Tasmanian Froglet			Y				
	<i>Geocrinia laevis</i>	Tasmanian Smooth Frog			Y				
	<i>Crinia signifera</i>	Brown Froglet			Y				
	<i>Pseudophryne semimarmorata</i>	Southern Toadlet			Y				
	<i>Limnodynastes tasmaniensis</i>	Spotted Grass Frog			Y				
Reptiles	<i>Lampropholis delicata</i>	Delicate Grass Skink							
	<i>Pseudemoia entrecasteauxii</i>	Southern Grass Skink			Y				
	<i>Niveoscincus metallicus</i>	Metallic Skink			Y				
	<i>Niveoscincus ocellatus</i>	Ocellated Skink			Y				
	<i>Niveoscincus pretiosus</i>	Tasmanian Tree Skink			Y				
	<i>Bassiana duperryi</i>	Three-lined Skink			Y				
	<i>Egernia whitei</i>	White's Skink			Y				
	<i>Cyclodomorphus casuarinae</i>	She-oak Skink			Y				
	<i>Tiliqua nigrolutea</i>	Blotched Blue-tongue			Y				
	<i>Tympanocryptis diemensis</i>	Mountain Dragon							
	<i>Austrelaps superbus</i>	Copperhead Snake			Y				
	<i>Notechis ater</i>	Tiger Snake			Y				
	<i>Drysdalia coronoides</i>	White-lipped Snake			Y				

TABLE 1									
Class	Species	Common name	If sensitive are recovery or similar plans being implemented (Y/N)	Instrument being implemented	widespread	vulnerable	rare	endangered	presumed extinct
Birds	<i>Accipiter fasciatus</i>	Brown Goshawk			Y				
	<i>Accipiter cirrhocephalus</i>	Collared Sparrowhawk			Y				
	<i>Accipiter novaehollandiae</i>	Grey Goshawk						Y	
	<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle							
	<i>Aquila audax</i>	Wedge-tailed Eagle	Y	Recovery plan				Y	
	<i>Falco peregrinus</i>	Peregrine Falcon			Y				
	<i>Falco berigora</i>	Brown Falcon			Y				
	<i>Coturnix ypsilophorus</i>	Brown Quail			Y				
	<i>Turnix varia</i>	Painted Button-quail							
	<i>Phaps chalcoptera</i>	Common Bronzewing			Y				
	<i>Phaps elegans</i>	Brush Bronzewing			Y				
	<i>Calyptorhynchus funereus</i>	Yellow-tailed Black Cockatoo							
	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo			Y				
	<i>Glossopsitta concinna</i>	Musk Lorikeet							
	<i>Pezoporus wallicus</i>	Ground Parrot							
	<i>Lathamus discolor</i>	Swift Parrot	Y	Recovery plan			Y		
	<i>Platycercus caledonicus</i>	Green Rosella			Y				
	<i>Platycercus eximius</i>	Eastern Rosella			Y				
	<i>Neophema chrysostoma</i>	Blue-winged Parrot							
	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Y	Recovery plan				Y	
	<i>Cuculus pallidus</i>	Pallid Cuckoo			Y				
	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo			Y				
	<i>Chrysococcyx basalis</i>	Horsefield's Bronze Cuckoo			Y				
	<i>Chrysococcyx lucidus</i>	Shining Bronze Cuckoo			Y				
	<i>Ninox novaeseelandiae</i>	Southern Boobook			Y				
	<i>Tyto novaehollandiae</i>	Masked Owl							
	<i>Podargus strigoides</i>	Tawny Frogmouth			Y				
	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar							
	<i>Alcedo azurea</i>	Azure Kingfisher							
	<i>Hirundo nigricans</i>	Tree Martin			Y				
	<i>Anthus novaeseelandiae</i>	Richards Pipit			Y				
	<i>Coracina novaehollandiae</i>	Black Faced Cuckoo Shrike			Y				
	<i>Zoothera lunulata</i>	Bassian Thrush							
	<i>Petroica rodinogaster</i>	Pink Robin							
	<i>Petroica phoenicea</i>	Flame Robin			Y				
	<i>Petroica multicolor</i>	Scarlet Robin			Y				
	<i>Melanodryas vittata</i>	Dusky Robin			Y				
	<i>Pachycephala olivacea</i>	Olive Whistler			Y				
Birds (cont.)									

TABLE 1									
Class	Species	Common name	If sensitive are recovery or similar plans being implemented (Y/N)	Instrument being implemented	widespread	vulnerable	rare	endangered	presumed extinct
	<i>Pachycephala pectoralis</i>	Golden Whistler			Y				
	<i>Colluricincla harmonica</i>	Grey Shrike Thrush			Y				
	<i>Myiagra cyanoleuca</i>	Satin Flycatcher			Y				
	<i>Rhipidura fuliginosa</i>	Grey Fantail			Y				
	<i>Cinclosoma punctatum</i>	Spotted Quail-thrush							
	<i>Malurus cyaneus</i>	Superb Fairy-wren			Y				
	<i>Sericornis frontalis</i>	White-browed Scrubwren			Y				
	<i>Acanthornis magnus</i>	Scrubtit							
	<i>Acanthiza pusilla</i>	Brown Thornbill			Y				
	<i>Acanthiza pusilla archibaldi</i>	King Island thornbill							
	<i>Acanthiza ewingii</i>	Tasmanian Thornbill			Y				
	<i>Anthochaera paradoxa</i>	Yellow Wattlebird			Y				
	<i>Anthochaera chrysoptera</i>	Little Wattlebird			Y				
	<i>Lichenostomus flavicollis</i>	Yellow-throated Honeyeater			Y				
	<i>Melithreptus validirostris</i>	Strong-billed Honeyeater			Y				
	<i>Melithreptus affinis</i>	Black-headed Honeyeater			Y				
	<i>Phylidonyris pyrrhoptera</i>	Crescent Honeyeater			Y				
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			Y				
	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill			Y				
	<i>Pardalotus punctatus</i>	Spotted Pardalote			Y				
	<i>Pardalotus quadragintus</i>	Forty-spotted Pardalote						Y	
	<i>Pardalotus striatus</i>	Striated Pardalote			Y				
	<i>Zosterops lateralis</i>	Silvereye			Y				
	<i>Stagonopleura bella</i>	Beautiful Firetail							
	<i>Artamus cyanopterus</i>	Dusky Woodswallow			Y				
	<i>Cracticus torquatus</i>	Grey Butcherbird			Y				
	<i>Strepera fuliginosa</i>	Black Currawong			Y				
	<i>Strepera versicolor</i>	Grey Currawong			Y				
	<i>Corvus tasmanicus</i>	Forest Raven			Y				
Mammals	<i>Tachyglossus aculeatus</i>	Echidna			Y				
	<i>Ornithorhynchus anatinus</i>	Platypus			Y				
	<i>Macropus giganteus</i>	Forester kangaroo							
	<i>Macropus rufogriseus</i>	Bennett's Wallaby			Y				
	<i>Thylogale billardieri</i>	Tasmanian Pademelon			Y				
	<i>Bettongia gaimardi</i>	Tasmanian Bettong							
	<i>Potorous tridactylus</i>	Long-nosed Potoroo			Y				
Mammals (cont.)	<i>Trichosurus vulpecula</i>	Common Brush-tail Possum			Y				

TABLE 1									
Class	Species	Common name	If sensitive are recovery or similar plans being implemented (Y/N)	Instrument being implemented	widespread	vulnerable	rare	endangered	presumed extinct
	<i>Pseudocheirus peregrinus</i>	Common Ringtail Possum	Y	Recovery plan	Y	Y	Y		
	<i>Petaurus breviceps</i>	Sugar Glider							
	<i>Cercartetus nanus</i>	Eastern Pygmy-possum			Y				
	<i>Cercartetus lepidus</i>	Little Pygmy-possum			Y				
	<i>Vombatus ursinus</i>	Common Wombat			Y				
	<i>Isodon obesulus</i>	Southern Brown Bandicoot			Y				
	<i>Perameles gunnii</i>	Eastern Barred-bandicoot							
	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll							
	<i>Dasyurus viverrinus</i>	Eastern Quoll			Y				
	<i>Sarcophilus harrisii</i>	Tasmanian Devil			Y				
	<i>Antechinus swainsonii</i>	Dusky Antechinus			Y				
	<i>Antechinus minimus</i>	Swamp Antechinus			Y				
	<i>Sminthopsis leucopus</i>	White-footed Dunnart							
	<i>Rattus lutreolus</i>	Swamp Rat			Y				
	<i>Pseudomys higginsii</i>	Long-tailed Mouse			Y				
	<i>Pseudomys novaehollandiae</i>	New Holland Mouse							
	<i>Vespadelus vulturnus</i>	Small Forest Vespadelus			Y				
	<i>Vespadelus regulus</i>	King River Vespadelus			Y				
	<i>Vespadelus darlingtoni</i>	Large Forest Vespadelus			Y				
	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat			Y				
	<i>Nyctophilus timoriensis sherrini</i>	Greater Long-eared Bat			Y				
	<i>Chalinolobus morio</i>	Chocolate Wattled Bat			Y				
	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			Y				
	<i>Falsistrellus tasmaniensis</i>	Tasmanian Pipistrelle			Y				

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
ORDER DICOTYLEDONAE								
AMARANTHACEAE	<i>Alternanthera denticulata</i>	lesser joyweed	Further research	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
APIACEAE	<i>Daucus glochidiatus</i>	native carrot	not listed					
APIACEAE	<i>Eryngium ovinum</i>	blue devil	Recovery needed	4	vulnerable	down-listed	3.1	Endangered (extant)
APIACEAE	<i>Hydrocotyle callicarpa</i>	tiny pennywort	not listed			delisted	5	Rare
APIACEAE	<i>Hydrocotyle comocarpa</i>	fringe-fruit pennywort	New RFA spp	5	Rare	no change	5	Rare
APIACEAE	<i>Hydrocotyle hirta</i>	hairy pennywort	not listed					
APIACEAE	<i>Hydrocotyle laxiflora</i>	stinking pennywort	Recovery needed	4	Vulnerable	no change	4	Vulnerable
APIACEAE	<i>Hydrocotyle muscosa</i>	mossy pennywort	not listed					
APIACEAE	<i>Hydrocotyle pterocarpa</i>	wing pennywort	not listed					
APIACEAE	<i>Hydrocotyle sibthorpioides</i>	entire-leaf pennywort	not listed					
APIACEAE	<i>Oreomyrrhis gunnii</i>	gunn's carraway	not listed			delisted	5	Rare
APIACEAE	<i>Xanthosia pilosa</i>		not listed					
ARALIACEAE	<i>Polyscias aff. sambucifolia</i>	elderberry panax	Further research	4	Vulnerable	no change	4	Vulnerable
ARALIACEAE	<i>Pseudopanax gunnii</i>		not listed					
ASTERACEAE	<i>Argentipallium obtusifolium</i>		not listed					
ASTERACEAE	<i>Argentipallium spiceri</i>	spicer's everlasting	Further research	3.1	Endangered (extant)	rediscovered	3.2	Endangered (presumed extinct)
ASTERACEAE	<i>Bedfordia arborescens</i>	blanket leaf (mainland)	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Bedfordia linearis</i>		not listed					
ASTERACEAE	<i>Bedfordia salicina</i>		not listed					
ASTERACEAE	<i>Brachyglottis brunonis</i>	brown's tree-daisy	Priority sp. requiring protection	5	Rare	no change	5	Rare
ASTERACEAE	<i>Brachyscome decipiens</i>		not listed					
ASTERACEAE	<i>Brachyscome nivalis</i>	snow daisy	not listed	5	Rare	no change	5	Rare
ASTERACEAE	<i>Brachyscome perpusilla</i>	tiny daisy	new RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Brachyscome radicata</i>	rooted daisy	Priority sp. requiring protection	5	Rare	no change	5	Rare
ASTERACEAE	<i>Brachyscome rigidula</i>	hairy cutleaf daisy	Recovery needed	4	Vulnerable	no change	4	Vulnerable
ASTERACEAE	<i>Brachyscome sieberi</i> var. <i>gunnii</i>		Further research	5	Rare	no change	5	Rare
ASTERACEAE	<i>Brachyscome tenuiscapa</i>		not listed					Endangered (presumed extinct)
ASTERACEAE	<i>Brachyscome tenuiscapa</i> var. <i>pubescens</i>		Further research	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
ASTERACEAE	<i>Calocephalus citreus</i>	lemon beauty-heads	Priority sp. requiring protection	5	rare	down-listed	3.1	Endangered (extant)
ASTERACEAE	<i>Calocephalus lacteus</i>	milky beauty-heads	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Cassinia aculeata</i>		not listed					
ASTERACEAE	<i>Cassinia trinerva</i>		not listed					
ASTERACEAE	<i>Centipedia cunninghamii</i>		Priority sp. requiring protection	5	rare	no change	5	Rare

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
ASTERACEAE	<i>Chrysocephalum apiculatum</i>		not listed					
ASTERACEAE	<i>Chrysocephalum semipapposum</i>		not listed					
ASTERACEAE	<i>Cotula australis</i>		not listed					
ASTERACEAE	<i>Cotula vulgaris</i> var. <i>australasica</i>		New RFA species	5	rare	no change	5	rare
ASTERACEAE	<i>Craspedia coolaminica</i>		not listed					
ASTERACEAE	<i>Craspedia glauca</i>		not listed					
ASTERACEAE	<i>Cymbonotus preissianus</i>		not listed					
ASTERACEAE	<i>Euchiton collinus</i>		not listed					
ASTERACEAE	<i>Helichrysum scorpioides</i>		not listed					
ASTERACEAE	<i>Hyalosperma demissum</i>	drooping hyalosperma	Recovery needed	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
ASTERACEAE	<i>Isoetopsis graminifolia</i>	grass cushions	Priority sp. requiring protection	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
ASTERACEAE	<i>Lagenifera huegelii</i>		not listed					
ASTERACEAE	<i>Lagenifera stipitata</i>		not listed					
ASTERACEAE	<i>Leptorhynchos elongatus</i>	lanky buttons	Priority sp. requiring protection	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
ASTERACEAE	<i>Leptorhynchos linearis</i>		not listed					
ASTERACEAE	<i>Leptorhynchos squamatus</i>		not listed					
ASTERACEAE	<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Midlands straw daisy	New RFA spp	3.1	endangered	no change	3.1	Endangered
ASTERACEAE	<i>Microseris lanceolata</i>		not listed					
ASTERACEAE	<i>Millotia muelleri</i>	common bow-flower	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Millotia tenuifolia</i>	soft millotia	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Odixia achlaena</i>	ixodia, odixia	Priority sp. requiring protection	5	Rare	no change	5	Rare
ASTERACEAE	<i>Odixia angusta</i>		not listed					
ASTERACEAE	<i>Olearia algida</i>		not listed					
ASTERACEAE	<i>Olearia archeri</i>		not listed					
ASTERACEAE	<i>Olearia argophylla</i>		not listed					
ASTERACEAE	<i>Olearia axillaris</i>		not listed					
ASTERACEAE	<i>Olearia ciliata</i>		not listed					
ASTERACEAE	<i>Olearia ericoides</i>		not listed					
ASTERACEAE	<i>Olearia erubescens</i>		not listed					
ASTERACEAE	<i>Olearia floribunda</i>		not listed					
ASTERACEAE	<i>Olearia glandulosa</i>		not listed					
ASTERACEAE	<i>Olearia glutinosa</i>		not listed					
ASTERACEAE	<i>Olearia hookeri</i>	Hooker's crimson-tip daisy bush	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Olearia lirata</i>		not listed					
ASTERACEAE	<i>Olearia myrsinoides</i>		not listed					
ASTERACEAE	<i>Olearia obcordata</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
ASTERACEAE	<i>Olearia persoonioides</i>		not listed					
ASTERACEAE	<i>Olearia phlogopappa</i>		not listed					
ASTERACEAE	<i>Olearia pinifolia</i>		not listed					
ASTERACEAE	<i>Olearia ramulosa</i>		not listed					
ASTERACEAE	<i>Olearia stellulata</i>		not listed					
ASTERACEAE	<i>Olearia tasmanica</i>		not listed					
ASTERACEAE	<i>Olearia viscosa</i>		not listed					
ASTERACEAE	<i>Ozothamnus antennaria</i>		not listed					
ASTERACEAE	<i>Ozothamnus costatifructus</i>		not listed					
ASTERACEAE	<i>Ozothamnus hookeri</i>		not listed					
ASTERACEAE	<i>Ozothamnus lycopodioides</i>	lycophod everlasting	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Ozothamnus obcordatus</i>		not listed					
ASTERACEAE	<i>Ozothamnus purpurascens</i>		not listed					
ASTERACEAE	<i>Ozothamnus reticulatus</i>		not listed					
ASTERACEAE	<i>Ozothamnus rosmarinifolius</i>		not listed					
ASTERACEAE	<i>Ozothamnus scutellifolius</i>		not listed					
ASTERACEAE	<i>Ozothamnus selaginoides</i>	clubmoss everlasting	New RFA species	3.1	endangered (extant)	rediscovered 'extinct' species	3.1	Endangered
ASTERACEAE	<i>Ozothamnus thyrsoideus</i>		not listed					
ASTERACEAE	<i>Picris angustifolia</i> var. <i>angustifolia</i>		not listed					
ASTERACEAE	<i>Picris angustifolia</i> var. <i>merxmulleri</i>		not listed					
ASTERACEAE	<i>Podolepis jaceoides</i>		not listed					
ASTERACEAE	<i>Podotheca angustifolia</i>	sticky long-heads	Further research	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
ASTERACEAE	<i>Pseudognaphalium luteo- album</i>		not listed					
ASTERACEAE	<i>Rhodanthe anthemoides</i>	chamomile sunray	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Rutidosia multiflora</i>	small wrinklewort	Priority sp. requiring protection	5	Rare	no change	5	Rare
ASTERACEAE	<i>Senecio biserratus</i>		not listed					
ASTERACEAE	<i>Senecio glomeratus</i>		not listed					
ASTERACEAE	<i>Senecio hispidulus</i>		not listed					
ASTERACEAE	<i>Senecio linearifolius</i>		not listed					
ASTERACEAE	<i>Senecio macrocarpus</i>	fluffy groundsel	New RFA species	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
ASTERACEAE	<i>Senecio minimus</i>		not listed					
ASTERACEAE	<i>Senecio orarius</i>		not listed					
ASTERACEAE	<i>Senecio quadridentatus</i>		not listed					
ASTERACEAE	<i>Senecio squarrosus</i>	rigid grassland groundsel	Priority sp. requiring protection	5	Rare	no change	5	Rare

TABLE 2								
Family	<i>Genus species</i>	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
ASTERACEAE	<i>Senecio vagus</i>		not listed					
ASTERACEAE	<i>Senecio velleioides</i>	forest groundsel	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Solenogyne dominii</i>		not listed					
ASTERACEAE	<i>Solenogyne gunnii</i>		not listed					
ASTERACEAE	<i>Taraxacum aristum</i>	austral dandelion	New RFA species	5	Rare	no change	5	Rare
ASTERACEAE	<i>Triptilodiscus pygmaeus</i>	common sunray	New RFA species	4	Vulnerable	no change	4	Vulnerable
ASTERACEAE	<i>Vittadinia cuneata</i>	new holland daisy	Priority sp. requiring protection	5	Rare	no change	5	Rare
ASTERACEAE	<i>Vittadinia gracilis</i>	graceful new holland daisy	Priority sp. requiring protection	5	Rare	no change	5	Rare
ASTERACEAE	<i>Vittadinia megacephala</i>	giant new holland daisy	New RFA species	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
ASTERACEAE	<i>Vittadinia muelleri</i>	narrow-leaf new holland daisy	Priority sp. requiring protection	5	Rare	no change	5	Rare
BIGNONIACEAE	<i>Pandorea pandorana</i>	wonga vine	New RFA species	5	Rare	no change	5	Rare
BORAGINACEAE	<i>Cynoglossum latifolium</i>	forest hound's tongue	new RFA spp	5	Rare	no change	5	Rare
BORAGINACEAE	<i>Cynoglossum suaveolens</i>		not listed					
BORAGINACEAE	<i>Myosotis australis</i>		not listed					
BORAGINACEAE	<i>Myosotis exarrhena</i>		not listed					
BRASSICACEAE	<i>Ballantinia antipoda</i>	southern ballantine	Further research	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
BRASSICACEAE	<i>Barbarea australis</i>	native wintercress	Recovery committed or happening	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
BRASSICACEAE	<i>Lepidium hyssopifolium</i>	peppergrass	Recovery committed or happening	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
BRASSICACEAE	<i>Lepidium pseudotasmanicum</i>	shade peppergrass	Priority sp. requiring protection	5	Rare	no change	5	Rare
BRASSICACEAE	<i>Rorippa dictyosperma</i>		not listed					
BRUNONIACEAE	<i>Brunonia australis</i>	blue pincushion	Recovery needed	4	Vulnerable	no change	4	Vulnerable
CAMPANULACEAE	<i>Lobelia gibbosa</i>		not listed					
CAMPANULACEAE	<i>Lobelia pratioides</i>	poison lobelia	Recovery needed	4	Vulnerable	no change	4	Vulnerable
CAMPANULACEAE	<i>Lobelia rhombifolia</i>	branched lobelia	Priority sp. requiring protection	5	Rare	no change	5	Rare
CAMPANULACEAE	<i>Wahlenbergia gracilentia</i>		not listed					
CAMPANULACEAE	<i>Wahlenbergia gymnoclada</i>		not listed					
CAMPANULACEAE	<i>Wahlenbergia multicaulis</i>		not listed					
CAPRIFOLIACEAE	<i>Sambucus gaudichaudiana</i>		not listed					
CARYOPHYLLACEAE	<i>Colobanthus affinis</i>		not listed					
CARYOPHYLLACEAE	<i>Colobanthus curtisiae</i>	curtis' colobanth	Priority sp. requiring protection	5	Rare	no change	5	Rare
CARYOPHYLLACEAE	<i>Scleranthus biflorus</i>		not listed					
CARYOPHYLLACEAE	<i>Scleranthus diander</i>	knawel	Recovery needed	4	Vulnerable	no change	4	Vulnerable
CARYOPHYLLACEAE	<i>Scleranthus fasciculatus</i>	knawel	Recovery needed	4	Vulnerable	no change	4	Vulnerable

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
CARYOPHYLLACEAE	<i>Stellaria flaccida</i>		not listed					
CARYOPHYLLACEAE	<i>Stellaria multiflora</i>	rayless starwort	New RFA species	5	Rare	no change	5	Rare
CARYOPHYLLACEAE	<i>Stellaria pungens</i>		not listed					
CASUARINACEAE	<i>Allocasuarina crassa</i>	caples sheoak	New RFA species	5	Rare	no change	5	Rare
CASUARINACEAE	<i>Allocasuarina duncanii</i>	duncan's sheoak	Priority sp. requiring protection	5	Rare	no change	5	Rare
CASUARINACEAE	<i>Allocasuarina littoralis</i>		not listed					
CASUARINACEAE	<i>Allocasuarina monilifera</i>		not listed					
CASUARINACEAE	<i>Allocasuarina verticillata</i>		not listed					
CHENOPODIACEAE	<i>Chenopodium erosum</i>		not listed					
CHENOPODIACEAE	<i>Chenopodium pumilio</i>		not listed					
CLUSIACEAE	<i>Hypericum gramineum</i>		not listed					
CLUSIACEAE	<i>Hypericum japonicum</i>		not listed					
CONVOLVULACEAE	<i>Convolvulus erubescens</i>		not listed					
CONVOLVULACEAE	<i>Dichondra repens</i>		not listed					
CRASSULACEAE	<i>Crassula sieberiana</i>		not listed					
CUNONIACEAE	<i>Anodopetalum biglandulosum</i>		not listed					
CUNONIACEAE	<i>Bauera rubioides</i>		not listed					
DILLENIACEAE	<i>Hibbertia calycina</i>	lesser guinea-flower	Priority sp. requiring protection	4	Vulnerable	no change	4	Vulnerable
DILLENIACEAE	<i>Hibbertia empetrifolia</i> ssp. <i>empetrifolia</i>		not listed					
DILLENIACEAE	<i>Hibbertia hirsuta</i>		not listed					
DILLENIACEAE	<i>Hibbertia hirticalyx</i>		not listed					
DILLENIACEAE	<i>Hibbertia obtusifolia</i>	hoary guinea-flower	Recovery needed	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
DILLENIACEAE	<i>Hibbertia procumbens</i>		not listed					
DILLENIACEAE	<i>Hibbertia riparia</i>		not listed					
DILLENIACEAE	<i>Hibbertia rufa</i>	brown guinea-flower	New RFA spp	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
DILLENIACEAE	<i>Hibbertia serpyllifolia</i>		not listed					
DILLENIACEAE	<i>Hibbertia virgata</i>	twiggy guinea-flower	New RFA spp	5	Rare	no change	5	Rare
DROSERACEAE	<i>Drosera peltata</i> ssp. <i>peltata</i>		not listed					
ELAEOCARPACEAE	<i>Aristotelia peduncularis</i>		not listed					
ELAEOCARPACEAE	<i>Elaeocarpus reticulatus</i>	blueberry ash	new RFA spp	5	Rare	no change	5	Rare
EPACRIDACEAE	<i>Acrotriche serrulata</i>		not listed					
EPACRIDACEAE	<i>Archeria eriocarpa</i>		not listed					
EPACRIDACEAE	<i>Archeria hirtella</i>		not listed					
EPACRIDACEAE	<i>Astroloma humifusum</i>		not listed					
EPACRIDACEAE	<i>Astroloma pinifolium</i>		not listed					
EPACRIDACEAE	<i>Brachyloma ciliatum</i>		not listed					
EPACRIDACEAE	<i>Cyathodes divaricata</i>		not listed					
EPACRIDACEAE	<i>Cyathodes glauca</i>		not listed					
EPACRIDACEAE	<i>Cyathodes juniperina</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
EPACRIDACEAE	<i>Cyathodes parvifolia</i>		not listed					
EPACRIDACEAE	<i>Cyathodes pendulosa</i>		not listed					
EPACRIDACEAE	<i>Dracophyllum milliganii</i>		not listed					
EPACRIDACEAE	<i>Epacris acuminata</i>	clasping-leaf heath	Recovery comm- itted or happening	5	Rare	downlisted	4	Vulnerable
EPACRIDACEAE	<i>Epacris aff. exserta</i> 'Union Bridge'		Priority sp. requiring protection					
EPACRIDACEAE	<i>Epacris apsleyensis</i>	apsley heath	Recovery comm- itted or happening	3.1	endangered	uplisted	4	Vulnerable
EPACRIDACEAE	<i>Epacris barbata</i>	bearded heath	Recovery comm- itted or happening	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
EPACRIDACEAE	<i>Epacris curtisiae</i>	curtis' heath	Priority sp. requiring protection	5	Rare	no change	5	Rare
EPACRIDACEAE	<i>Epacris exserta</i>	south esk heath	Recovery needed	4	Vulnerable	no change	4	Vulnerable
EPACRIDACEAE	<i>Epacris glabella</i>	funnel heath	Recovery comm- itted or happening	3.1	endangered	uplisted	4	Vulnerable
EPACRIDACEAE	<i>Epacris grandis</i>	great heath	Recovery comm- itted or happening	4	Vulnerable	no change	4	Vulnerable
EPACRIDACEAE	<i>Epacris graniticola</i>	Granite heath	Recovery needed					
EPACRIDACEAE	<i>Epacris gunnii</i>		not listed					
EPACRIDACEAE	<i>Epacris heteronema</i>		not listed					
EPACRIDACEAE	<i>Epacris impressa</i>		not listed					
EPACRIDACEAE	<i>Epacris lanuginosa</i>		not listed					
EPACRIDACEAE	<i>Epacris limbata</i>	border heath	Recovery comm- itted or happening	3.1	endangered	uplisted	4	Vulnerable
EPACRIDACEAE	<i>Epacris marginata</i>		Other species requiring research					
EPACRIDACEAE	<i>Epacris mucronulata</i>		not listed					
EPACRIDACEAE	<i>Epacris obtusifolia</i>		not listed					
EPACRIDACEAE	<i>Epacris tasmanica</i>		not listed					
EPACRIDACEAE	<i>Epacris virgata</i>	pretty heath, drumstick heath	Recovery comm- itted or happening	4	Vulnerable	no change	4	Vulnerable
EPACRIDACEAE	<i>Leucopogon australis</i>		not listed					
EPACRIDACEAE	<i>Leucopogon collinus</i>		not listed					
EPACRIDACEAE	<i>Leucopogon ericoides</i>		not listed					
EPACRIDACEAE	<i>Leucopogon lanceolatus</i>	lance beard-heath	Priority sp. requiring protection	5	Rare	no change	5	Rare
EPACRIDACEAE	<i>Leucopogon parviflorus</i>		not listed					
EPACRIDACEAE	<i>Leucopogon stuartii</i>		not listed					
EPACRIDACEAE	<i>Leucopogon virgatus</i> var. <i>brevifolius</i>	short-leaf beard heath	New RFA species	5	Rare	new listing		
EPACRIDACEAE	<i>Leucopogon virgatus</i> var. <i>virgatus</i>	beard heath	not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
EPACRIDACEAE	<i>Lissanthe strigosa</i>		not listed					
EPACRIDACEAE	<i>Monotoca elliptica</i>		not listed					
EPACRIDACEAE	<i>Monotoca glauca</i>		not listed					
EPACRIDACEAE	<i>Monotoca linifolia</i> ssp. <i>algida</i>		not listed					
EPACRIDACEAE	<i>Monotoca linifolia</i> ssp. <i>linifolia</i>		not listed					
EPACRIDACEAE	<i>Monotoca scoparia</i>		not listed					
EPACRIDACEAE	<i>Monotoca submutica</i> var. <i>autumnalis</i>		not listed					
EPACRIDACEAE	<i>Monotoca submutica</i> var. <i>submutica</i>		not listed					
EPACRIDACEAE	<i>Pentachondra ericifolia</i>	matted pentachondra	Priority sp. requiring protection	5	Rare	no change	5	Rare
EPACRIDACEAE	<i>Pentachondra involucrata</i>		not listed					
EPACRIDACEAE	<i>Prionotes cerinthoides</i>		not listed					
EPACRIDACEAE	<i>Richea curtisiae</i>		not listed					
EPACRIDACEAE	<i>Richea dracophylla</i>		not listed					
EPACRIDACEAE	<i>Richea gunnii</i>		not listed					
EPACRIDACEAE	<i>Richea milliganii</i>		not listed					
EPACRIDACEAE	<i>Richea pandanifolia</i>		not listed					
EPACRIDACEAE	<i>Richea procera</i>		not listed					
EPACRIDACEAE	<i>Richea scoparia</i>		not listed					
EPACRIDACEAE	<i>Sprengelia incarnata</i>		not listed					
EPACRIDACEAE	<i>Styphelia adscendens</i>		not listed					
EPACRIDACEAE	<i>Trochocarpa cunninghamii</i>		not listed					
EPACRIDACEAE	<i>Trochocarpa disticha</i>		not listed					
EPACRIDACEAE	<i>Trochocarpa gunnii</i>		not listed					
ERICACEAE	<i>Gaultheria depressa</i>		not listed					
ERICACEAE	<i>Gaultheria hispida</i>		not listed					
ESCALLONIACEAE	<i>Anopterus glandulosus</i>		not listed					
ESCALLONIACEAE	<i>Tetracarpaea tasmanica</i>		not listed					
EUCRYPHIACEAE	<i>Eucryphia lucida</i>		not listed					
EUCRYPHIACEAE	<i>Eucryphia milliganii</i>		not listed					
EUPHORBIACEAE	<i>Amperea xiphioclada</i>		not listed					
EUPHORBIACEAE	<i>Bertya rosmarinifolia</i>	bertya	Recovery needed	4	Vulnerable	no change	4	Vulnerable
EUPHORBIACEAE	<i>Beyeria viscosa</i>		not listed					
EUPHORBIACEAE	<i>Chamaesyce drummondii</i>	caustic weed	new RFA species	5	Rare	no change	5	Rare
EUPHORBIACEAE	<i>Micrantheum hexandrum</i>		not listed					
EUPHORBIACEAE	<i>Micrantheum serpentinum</i>	serpentine micrantheum	Priority sp. requiring protection	4	Vulnerable	uplisted	5	Rare
EUPHORBIACEAE	<i>Poranthera microphylla</i>		not listed					
EUPHORBIACEAE	<i>Ricinocarpus pinifolius</i>		not listed					
FABACEAE	<i>Almaleea subumbellata</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
FABACEAE	<i>Aotus ericoides</i>		not listed					
FABACEAE	<i>Bossiaea cinerea</i>		not listed					
FABACEAE	<i>Bossiaea cordigera</i>		not listed					
FABACEAE	<i>Bossiaea obcordata</i>	spiny bossiaea	Priority sp. requiring protection	5	Rare	no change	5	Rare
FABACEAE	<i>Bossiaea prostrata</i>		not listed					
FABACEAE	<i>Bossiaea riparia</i>		not listed					
FABACEAE	<i>Daviesia latifolia</i>		not listed					
FABACEAE	<i>Daviesia sejugata</i>		not listed					
FABACEAE	<i>Daviesia ulicifolia</i>		not listed					
FABACEAE	<i>Desmodium gunnii</i>	slender or variable tick trefoil	Priority species requiring protection	4	Vulnerable	no change	4	Vulnerable
FABACEAE	<i>Dillwynia cinerascens</i>		not listed					
FABACEAE	<i>Dillwynia glaberrima</i>		not listed					
FABACEAE	<i>Dillwynia sericea</i>		not listed					
FABACEAE	<i>Glycine clandestina</i>		not listed					
FABACEAE	<i>Glycine latrobeana</i>	dwarf, clover or purple glycine	Recovery comm- itted or happening	4	Vulnerable	no change	4	Vulnerable
FABACEAE	<i>Glycine microphylla</i>	small-leaved glycine	New RFA spp	4	Vulnerable	uplisted	5	Rare
FABACEAE	<i>Gompholobium ecostatum</i>	dwarf wedge-pea	New RFA spp	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
FABACEAE	<i>Gompholobium huegelii</i>		not listed					
FABACEAE	<i>Goodia lotifolia</i> var. <i>lotifolia</i>		not listed					
FABACEAE	<i>Goodia lotifolia</i> var. <i>pubescens</i>		not listed					
FABACEAE	<i>Hardenbergia violacea</i>	false sarsparilla, purple coral pea,	New RFA spp	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
FABACEAE	<i>Hovea corrickiae</i>	corrick's hovea, glossy hovea	New RFA spp	5	Rare	no change	5	Rare
FABACEAE	<i>Hovea lanceolata</i>		not listed					
FABACEAE	<i>Hovea linearis</i>		not listed					
FABACEAE	<i>Indigofera australis</i>		not listed					
FABACEAE	<i>Kennedia prostrata</i>		not listed					
FABACEAE	<i>Mirbelia oxylobioides</i>	Mountain mirbelia	New RFA species	5	Rare	new listing		
FABACEAE	<i>Oxylobium arborescens</i>		not listed					
FABACEAE	<i>Oxylobium ellipticum</i>		not listed					
FABACEAE	<i>Platylobium formosum</i>		not listed					
FABACEAE	<i>Platylobium obtusangulum</i>		not listed					
FABACEAE	<i>Platylobium triangulare</i>		not listed					
FABACEAE	<i>Pultenaea daphnoides</i>		not listed					
FABACEAE	<i>Pultenaea dentata</i>		not listed					
FABACEAE	<i>Pultenaea fasciculata</i>		not listed					
FABACEAE	<i>Pultenaea gunnii</i>		not listed					
FABACEAE	<i>Pultenaea hibbertioides</i>		Recovery needed	4	Vulnerable	no change	4	Vulnerable

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
FABACEAE	<i>Pultenaea humilis</i>	dwarf bush-pea	Priority species requiring protection	4	Vulnerable	no change	4	Vulnerable
FABACEAE	<i>Pultenaea juniperina</i>		not listed					
FABACEAE	<i>Pultenaea pedunculata</i>		not listed					
FABACEAE	<i>Pultenaea prostrata</i>	bush pea	New RFA species	4	Vulnerable	no change	4	Vulnerable
FABACEAE	<i>Pultenaea selaginoides</i>	clubmoss bush-pea	Recovery comm- itted or happening	4	Vulnerable	no change	4	Vulnerable
FABACEAE	<i>Pultenaea stricta</i>		not listed					
FABACEAE	<i>Sphaerolobium minus</i>		not listed					
FABACEAE	<i>Viminaria juncea</i>	golden spray or native broom	New RFA species	3.1	endangered	no change	3.1	endangered
GENTIANACEAE	<i>Centaurium spicatum</i>		New RFA species			no change	5	rare
GERANIACEAE	<i>Geranium potentilloides</i>		not listed					
GERANIACEAE	<i>Geranium solanderi</i>		not listed					
GOODENIACEAE	<i>Goodenia amplexans</i>	clasping goodenia	New RFA spp	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
GOODENIACEAE	<i>Goodenia barbata</i>	purple goodenia	New RFA spp	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
GOODENIACEAE	<i>Goodenia elongata</i>		not listed					
GOODENIACEAE	<i>Goodenia lanata</i>		not listed					
GOODENIACEAE	<i>Goodenia ovata</i>		not listed					
GOODENIACEAE	<i>Scaevola aemula</i>	fairy fan-flower	Recovery needed	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
GOODENIACEAE	<i>Velleia paradoxa</i>	spur velleia	Recovery needed	4	Vulnerable	no change	4	Vulnerable
GYROSTEMONACEAE	<i>Gyrostemon thesioides</i>	didymotheca	New RFA spp	5	Rare	no change	5	Rare
HALORAGACEAE	<i>Gonocarpus humilis</i>		not listed					
HALORAGACEAE	<i>Gonocarpus micranthus</i>		not listed					
HALORAGACEAE	<i>Gonocarpus serpyllifolius</i>		not listed					
HALORAGACEAE	<i>Gonocarpus tetragynus</i>		not listed					
HALORAGACEAE	<i>Gonocarpus teucrioides</i>		not listed					
HALORAGACEAE	<i>Haloragis aspera</i>	rough raspwort	Recovery needed	4	Vulnerable	no change	4	Vulnerable
HALORAGACEAE	<i>Haloragis heterophylla</i>	variable raspwort	Priority species requiring protection	5	Rare	no change	5	Rare
LAMIACEAE	<i>Ajuga australis</i>		not listed					
LAMIACEAE	<i>Mentha diemenica</i>		not listed					
LAMIACEAE	<i>Prostanthera cuneata</i>	alpine mint bush	Further research	3.2	Endangered (presumed extinct)	no change	3	Endangered (presumed extinct)
LAMIACEAE	<i>Prostanthera lasianthos</i>		not listed					
LAMIACEAE	<i>Prostanthera rotundifolia</i>	round-leaved mint bush	Recovery needed	4	Vulnerable	no change	4	Vulnerable
LAMIACEAE	<i>Scutellaria humilis</i>	dwarf scullcap	New RFA species	5	Rare	no change	5	Rare
LAMIACEAE	<i>Teucrium corymbosum</i>	forest germander	New RFA species	5	Rare	no change	5	Rare
LAMIACEAE	<i>Westringia angustifolia</i>	scabrous westringia	New RFA species	5	Rare	no change	5	Rare
LAMIACEAE	<i>Westringia brevifolia</i> var. <i>brevifolia</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
LAMIACEAE	<i>Westringia brevifolia</i> var. <i>raleighii</i>		New RFA species	5	Rare	no change	5	Rare
LAMIACEAE	<i>Westringia rubiaefolia</i>		not listed					
LAURACEAE	<i>Cassytha glabella</i>		not listed					
LAURACEAE	<i>Cassytha melantha</i>		not listed					
LAURACEAE	<i>Cassytha pubescens</i>		not listed					
LINACEAE	<i>Linum marginale</i>		not listed					
LOGANIACEAE	<i>Mitrasacme pilosa</i> var. <i>pilosa</i>		not listed					
LOGANIACEAE	<i>Mitrasacme pilosa</i> var. <i>stuartii</i>		not listed					
LOGANIACEAE	<i>Phyllangium distylis</i>	tiny mitrewort	New RFA species	5	Rare	no change	5	Rare
LOGANIACEAE	<i>Phyllangium divergens</i> var. <i>divergens</i>		Other species requiring research	4	Vulnerable	no change	4	Vulnerable
LYTHRACEAE	<i>Lythrum hyssopifolia</i>		not listed					
MALVACEAE	<i>Asterotrichion discolor</i>		not listed					
MALVACEAE	<i>Gynatrix pulchella</i>	common hemp bush	Priority species requiring protection	5	Rare	no change	5	Rare
MIMOSACEAE	<i>Acacia axillaris</i>	midlands mimosa, small spike wattle	Recovery committed or happening			no change	4	Vulnerable
MIMOSACEAE	<i>Acacia dealbata</i>		not listed					
MIMOSACEAE	<i>Acacia genistifolia</i>		not listed					
MIMOSACEAE	<i>Acacia gunnii</i>		not listed					
MIMOSACEAE	<i>Acacia mearnsii</i>		not listed					
MIMOSACEAE	<i>Acacia melanoxylon</i>		not listed					
MIMOSACEAE	<i>Acacia mucronata</i>	variable sallow wattle	not listed					
MIMOSACEAE	<i>Acacia mucronata</i> var. <i>dependens</i>	variable sallow wattle	New RFA species	5	rare	no change	5	Rare
MIMOSACEAE	<i>Acacia myrtifolia</i>		not listed					
MIMOSACEAE	<i>Acacia pataczekii</i>	wally's or pataczek's wattle	Priority species requiring protection	5	Rare	no change	5	Rare
MIMOSACEAE	<i>Acacia riceana</i>		not listed					
MIMOSACEAE	<i>Acacia siculiformis</i>	dagger wattle	not listed	5	Rare	no change	5	Rare
MIMOSACEAE	<i>Acacia sophorae</i>		not listed					
MIMOSACEAE	<i>Acacia stricta</i>		not listed					
MIMOSACEAE	<i>Acacia suaveolens</i>		not listed					
MIMOSACEAE	<i>Acacia terminalis</i>		not listed					
MIMOSACEAE	<i>Acacia ulicifolia</i>		New RFA species	5	rare	no change	5	Rare
MIMOSACEAE	<i>Acacia verniciflua</i>		not listed					
MIMOSACEAE	<i>Acacia verticillata</i>		not listed					
MONIMIACEAE	<i>Atherosperma moschatum</i>		not listed					
MONIMIACEAE	<i>Hedycarya angustifolia</i>	austral mulberry	New RFA spp	5	Rare	no change	5	Rare
MYRTACEAE	<i>Baeckea ramosissima</i>		not listed					
MYRTACEAE	<i>Callistemon pallidus</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
MYRTACEAE	<i>Callistemon viridiflorus</i>		not listed					
MYRTACEAE	<i>Calytrix tetragona</i>		not listed					
MYRTACEAE	<i>Eucalyptus amygdalina</i>		not listed					
MYRTACEAE	<i>Eucalyptus archeri</i>		Other species requiring research					
MYRTACEAE	<i>Eucalyptus barberi</i>	barbers gum	new RFA spp	5	Rare	no change	5	Rare
MYRTACEAE	<i>Eucalyptus brookeriana</i>		not listed					
MYRTACEAE	<i>Eucalyptus coccifera</i>		not listed					
MYRTACEAE	<i>Eucalyptus cordata</i>		Other species requiring research					
MYRTACEAE	<i>Eucalyptus dalrympleana</i>		not listed					
MYRTACEAE	<i>Eucalyptus delegatensis ssp.</i>		not listed					
	<i>Delegatensis</i>							
MYRTACEAE	<i>Eucalyptus globulus ssp.</i>		not listed					
	<i>globulus</i>							
MYRTACEAE	<i>Eucalyptus globulus ssp.</i>		new RFA spp	5	Rare	no change	5	Rare
	<i>pseudo globulus</i>							
MYRTACEAE	<i>Eucalyptus gunnii</i>		not listed					
MYRTACEAE	<i>Eucalyptus johnstonii</i>		not listed					
MYRTACEAE	<i>Eucalyptus morrisbyi</i>	morrisby's gum	Recovery comm- itted or happening	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
MYRTACEAE	<i>Eucalyptus nitida</i>		not listed					
MYRTACEAE	<i>Eucalyptus obliqua</i>		not listed					
MYRTACEAE	<i>Eucalyptus ovata</i>		not listed					
MYRTACEAE	<i>Eucalyptus pauciflora ssp.</i>		not listed					
	<i>pauciflora</i>							
MYRTACEAE	<i>Eucalyptus perriniana</i>	spinning gum, round-leafed snow gum	Priority species requiring protection	5	Rare	no change	5	Rare
MYRTACEAE	<i>Eucalyptus pulchella</i>		not listed					
MYRTACEAE	<i>Eucalyptus radiata ssp.</i>		Priority species requiring protection	5	Rare	no change	5	Rare
	<i>robertsonii</i>							
MYRTACEAE	<i>Eucalyptus regnans</i>		not listed					
MYRTACEAE	<i>Eucalyptus risdonii</i>	risdon peppermint	Priority species requiring protection	5	Rare	no change	5	Rare
MYRTACEAE	<i>Eucalyptus rodwayi</i>		not listed					
MYRTACEAE	<i>Eucalyptus rubida</i>		not listed					
MYRTACEAE	<i>Eucalyptus sieberi</i>		not listed					
MYRTACEAE	<i>Eucalyptus subcrenulata</i>		not listed					
MYRTACEAE	<i>Eucalyptus tenuiramis</i>		not listed					
MYRTACEAE	<i>Eucalyptus urnigera</i>		not listed					
MYRTACEAE	<i>Eucalyptus vernicosa</i>		not listed					
MYRTACEAE	<i>Eucalyptus viminalis ssp.</i>		not listed					
	<i>viminalis</i>							

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
MYRTACEAE	<i>Kunzea ambigua</i>		not listed					
MYRTACEAE	<i>Leptospermum glaucescens</i>		not listed					
MYRTACEAE	<i>Leptospermum grandiflorum</i>		not listed					
MYRTACEAE	<i>Leptospermum lanigerum</i>		not listed					
MYRTACEAE	<i>Leptospermum nitidum</i>		not listed					
MYRTACEAE	<i>Leptospermum riparium</i>		not listed					
MYRTACEAE	<i>Leptospermum rupestre</i>		not listed					
MYRTACEAE	<i>Leptospermum scoparium</i> var. <i>scoparium</i>		not listed					
MYRTACEAE	<i>Melaleuca ericifolia</i>		not listed					
MYRTACEAE	<i>Melaleuca gibbosa</i>		not listed					
MYRTACEAE	<i>Melaleuca pustulata</i>	cranbrook paperbark	Priority species requiring protection	5	Rare	no change	5	Rare
MYRTACEAE	<i>Melaleuca squamea</i>		not listed					
MYRTACEAE	<i>Melaleuca squarrosa</i>		not listed					
MYRTACEAE	<i>Thryptomene micrantha</i>	heath myrtle, ribbed thryptomene, hea	Priority species requiring protection	5	Rare	no change	5	Rare
NOTHOFAGACEAE	<i>Nothofagus cunninghamii</i>		not listed					
NOTHOFAGACEAE	<i>Nothofagus gunnii</i>		not listed					
OLEACEAE	<i>Notelaea ligustrina</i>		not listed					
ONAGRACEAE	<i>Epilobium perpusillum</i>		not listed					
ORCHIDACEAE	<i>Calochilus paludosus</i>		not listed					
ORCHIDACEAE	<i>Cryptostylis leptochila</i>	small tongue orchid	New RFA species	3.1	endangered (extant)	uplisted	5	rare
OXALIDACEAE	<i>Oxalis exilis</i>		not listed					
OXALIDACEAE	<i>Oxalis magellanica</i>		not listed					
OXALIDACEAE	<i>Oxalis perennans</i>		not listed					
PITTOSPORACEAE	<i>Billardiera longiflora</i> var. <i>longifol</i>		not listed					
PITTOSPORACEAE	<i>Billardiera scandens</i>		not listed					
PITTOSPORACEAE	<i>Bursaria spinosa</i>		not listed					
PITTOSPORACEAE	<i>Pittosporum bicolor</i>		not listed					
PLANTAGINACEAE	<i>Plantago debilis</i>	shade plantain	New RFA species	5	Rare	no change	5	Rare
PLANTAGINACEAE	<i>Plantago gaudichaudii</i>	gaudichaud's plantain	New RFA species	4	Vulnerable	no change	4	Vulnerable
PLANTAGINACEAE	<i>Plantago varia</i>		not listed					
POLYGALACEAE	<i>Comesperma defoliatum</i>		not listed					
POLYGALACEAE	<i>Comesperma volubile</i>		not listed					
POLYGONACEAE	<i>Muehlenbeckia adpressa</i>		not listed					
POLYGONACEAE	<i>Muehlenbeckia gunnii</i>		not listed					
POLYGONACEAE	<i>Persicaria decipiens</i>	slender knotweed	New RFA species	4	Vulnerable	no change	4	Vulnerable
POLYGONACEAE	<i>Persicaria subsessilis</i>	bristly persicaria	New RFA species	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
POLYGONACEAE	<i>Polygonum plebeium</i>		not listed					
POLYGONACEAE	<i>Rumex dumosus</i>		not listed					
PORTULACACEAE	<i>Calandrinia granulifera</i>	grainy purslane	new RFA species	5	Rare	no change	5	Rare

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
PROTEACEAE	<i>Agastachys odorata</i>		not listed					
PROTEACEAE	<i>Banksia marginata</i>		not listed					
PROTEACEAE	<i>Banksia serrata</i>	saw banksia	Priority species requiring protection	5	Rare	no change	5	Rare
PROTEACEAE	<i>Bellenden montana</i>		not listed					
PROTEACEAE	<i>Cenarrhenes nitida</i>		not listed					
PROTEACEAE	<i>Comespermum hookeri</i>	leafless milkwort	New RFA species	4	vulnerable	uplisted	5	rare
PROTEACEAE	<i>Grevillea australis</i>		not listed					
PROTEACEAE	<i>Grevillea australis</i> var. <i>linearis</i>		New RFA spp	5	Rare	no change	5	Rare
PROTEACEAE	<i>Grevillea australis</i> var. <i>tenuifolia</i>		Priority species requiring protection					
PROTEACEAE	<i>Hakea epiglottis</i>		not listed					
PROTEACEAE	<i>Hakea lissosperma</i>		not listed					
PROTEACEAE	<i>Hakea microcarpa</i>		not listed					
PROTEACEAE	<i>Hakea nodosa</i>		not listed					
PROTEACEAE	<i>Hakea sericea</i>		not listed					
PROTEACEAE	<i>Hakea teretifolia</i>		not listed					
PROTEACEAE	<i>Hakea ulicina</i>	furze hakea	New RFA spp	4	Vulnerable	no change	4	Vulnerable
PROTEACEAE	<i>Lomatia polymorpha</i>		not listed					
PROTEACEAE	<i>Lomatia tasmanica</i>	king's holly	Priority species requiring protection	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
PROTEACEAE	<i>Lomatia tinctoria</i>		not listed					
PROTEACEAE	<i>Orites acicularis</i>		not listed					
PROTEACEAE	<i>Orites diversifolia</i>		not listed					
PROTEACEAE	<i>Orites revoluta</i>		not listed					
PROTEACEAE	<i>Persoonia gunnii</i> var. <i>angustifolia</i>	Gunn's geebung	New RFA species	5	Rare	no change	5	Rare
PROTEACEAE	<i>Persoonia gunnii</i> var. <i>oblanceolata</i>	Gunn's geebung	New RFA species	5	Rare	no change	5	Rare
PROTEACEAE	<i>Persoonia juniperina</i>		not listed					
PROTEACEAE	<i>Persoonia muelleri</i>		not listed					
PROTEACEAE	<i>Telopea truncata</i>		not listed					
RANUNCULACEAE	<i>Clematis aristata</i>		not listed					
RANUNCULACEAE	<i>Clematis gentianoides</i>		not listed					
RANUNCULACEAE	<i>Clematis microphylla</i>		not listed					
RANUNCULACEAE	<i>Ranunculus decurvus</i>		not listed					
RANUNCULACEAE	<i>Ranunculus lappaceus</i>		not listed					
RANUNCULACEAE	<i>Ranunculus pumilio</i>	ferny buttercup	New RFA species	5	Rare	no change	5	Rare
RANUNCULACEAE	<i>Ranunculus sessiliflorus</i>	small-flowered Australian buttercup	New RFA species	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Cryptandra amara</i>	bitter cryptandra	Priority species requiring protection	3.1	Endangered (extant)	no change	3.1	Endangered (extant)

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
RHAMNACEAE	<i>Cryptandra exilis</i>		not listed					
RHAMNACEAE	<i>Discaria pubescens</i>	thorn-bush, anchor plant	Recovery needed	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
RHAMNACEAE	<i>Pomaderris apetala</i>		not listed					
RHAMNACEAE	<i>Pomaderris aspera</i>		not listed					
RHAMNACEAE	<i>Pomaderris elachophylla</i>	small-leaf pomaderris	Recovery needed	4	Vulnerable	no change	4	Vulnerable
RHAMNACEAE	<i>Pomaderris elliptica</i>		not listed					
RHAMNACEAE	<i>Pomaderris intermedia</i>	tree pomaderris	not listed	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i>		New RFA species	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Pomaderris phyllicifolia</i> var. <i>phyllicifolia</i>	narrow-leaf pomaderris	Priority species requiring protection	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Pomaderris pilifera</i>		not listed					
RHAMNACEAE	<i>Pomaderris racemosa</i>		not listed					
RHAMNACEAE	<i>Spyridium eriocephalum</i>	heath spyridium	New RFA species	3.1	Endangerd (extant)	uplisted	5	Rare
RHAMNACEAE	<i>Spyridium gunnii</i>		not listed					
RHAMNACEAE	<i>Spyridium lawrencei</i>	small-leaf spyridium	Recovery needed	4	Vulnerable	no change	4	Vulnerable
RHAMNACEAE	<i>Spyridium obcordatum</i>	northern dusty miller	Recovery needing revision	4	Vulnerable	no change	4	Vulnerable
RHAMNACEAE	<i>Spyridium obovatum</i> var. <i>obovatum</i>		not listed					
RHAMNACEAE	<i>Spyridium obovatum</i> var. <i>velutinum</i>		not listed					
RHAMNACEAE	<i>Spyridium parvifolium</i> var. <i>molle</i>		New RFA species	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Spyridium parvifolium</i> var. <i>parvifolium</i>		New RFA species	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Spyridium ulicinum</i>		not listed					
RHAMNACEAE	<i>Spyridium vexilliferum</i>	winged spyridium	New RFA species	5	Rare	no change	5	Rare
RHAMNACEAE	<i>Stenanthemum pimeleoides</i>	spreading stenanthemum	Recovery needing revision			no change	4	Vulnerable
ROSACEAE	<i>Acaena echinata</i>		not listed					
ROSACEAE	<i>Acaena novae-zelandiae</i>		not listed					
ROSACEAE	<i>Acaena ovina</i>		not listed					
ROSACEAE	<i>Rubus gunnianus</i>		not listed					
ROSACEAE	<i>Rubus parvifolius</i>		not listed					
RUBIACEAE	<i>Asperula conferta</i>		not listed					
RUBIACEAE	<i>Asperula minima</i>	grassy woodruff	New RFA species	5	Rare	no change	5	Rare
RUBIACEAE	<i>Asperula scoparia</i> var. <i>scoparia</i>	prickly woodruff	New RFA species	5	rare	no change	5	rae
RUBIACEAE	<i>Asperula subsimplex</i>	water woodruff	Priority species requiring protection	5	Rare	no change	5	Rare
RUBIACEAE	<i>Coprosma hirtella</i>		not listed					
RUBIACEAE	<i>Coprosma nitida</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
RUBIACEAE	<i>Coprosma quadrifida</i>		not listed					
RUBIACEAE	<i>Galium australe</i>		not listed					
RUBIACEAE	<i>Galium ciliare</i>		not listed					
RUBIACEAE	<i>Galium gaudichaudii</i>		not listed					
RUBIACEAE	<i>Nertera depressa</i>		not listed					
RUBIACEAE	<i>Opercularia ovata</i>		not listed					
RUBIACEAE	<i>Opercularia varia</i>		not listed					
RUTACEAE	<i>Acradenia frankliniae</i>		not listed					
RUTACEAE	<i>Boronia anemonifolia</i>		not listed					
RUTACEAE	<i>Boronia citriodora</i>		not listed					
RUTACEAE	<i>Boronia parviflora</i>		not listed					
RUTACEAE	<i>Boronia pilosa</i>		not listed					
RUTACEAE	<i>Boronia rhomboidea</i>		Other species requiring research					
RUTACEAE	<i>Correa alba</i>		not listed					
RUTACEAE	<i>Correa backhousiana</i>		not listed					
RUTACEAE	<i>Correa lawrenciana</i>		not listed					
RUTACEAE	<i>Correa reflexa</i>		not listed					
RUTACEAE	<i>Leionema bilobum</i>		not listed					
RUTACEAE	<i>Nematolepis squamea</i> ssp. <i>retusum</i>		not listed					
RUTACEAE	<i>Nematolepis squamea</i> ssp. <i>squamea</i>		not listed					
RUTACEAE	<i>Phebalium daviesii</i>	davies' wax-flower	Recovery comm- itted or happening	3.1	Endangered (extant)	no change	3	Endangered (extant)
RUTACEAE	<i>Philotheca verrucosa</i>		not listed					
RUTACEAE	<i>Philotheca virgata</i>		not listed					
RUTACEAE	<i>Zieria arborescens</i>		not listed					
RUTACEAE	<i>Zieria cytisoides</i>	downy or dwarf zieria	New RFA species	5	Rare	no change	5	Rare
RUTACEAE	<i>Zieria veronicea</i>	pink zieria	New RFA species	5	Rare	no change	5	Rare
SANTALACEAE	<i>Exocarpos cupressiformis</i>		not listed					
SANTALACEAE	<i>Exocarpos strictus</i>		not listed					
SANTALACEAE	<i>Leptomeria drupacea</i>		not listed					
SANTALACEAE	<i>Thesium australe</i>	austral toadflax	Further research	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
SAPINDACEAE	<i>Dodonaea filiformis</i>		not listed					
SAPINDACEAE	<i>Dodonaea viscosa</i>		not listed					
SCROPHULARIACEAE	<i>Derwentia derwentiana</i>		not listed					
SCROPHULARIACEAE	<i>Euphrasia collina</i> ssp. <i>deflexifolia</i>		New RFA spp	5	Rare	no change	5	Rare
SCROPHULARIACEAE	<i>Euphrasia collina</i> ssp. <i>tetradonta</i>		New RFA spp	5	Rare	no change	5	Rare
SCROPHULARIACEAE	<i>Euphrasia fragosa</i>	shy eyebright	Priority species	3.1	endangered (extant)	new listing		

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
SCROPHULARIACEAE	<i>Euphrasia gibbsiae</i> ssp. <i>psilantherea</i>	swamp eyebright	requiring protection New RFA species	3.1	endangered (extant)	new listing		
SCROPHULARIACEAE	<i>Euphrasia scabra</i>	yellow eyebright	Recovery needed	3.1	endangered (extant)	no change	3.1	Endangered (extant)
SCROPHULARIACEAE	<i>Euphrasia semipicta</i>	port arthur eyebright	Priority species requiring protection	3.1	endangered (extant)	uplisted	4	Vulnerable
SCROPHULARIACEAE	<i>Gratiola nana</i>		not listed					
SCROPHULARIACEAE	<i>Gratiola peruviana</i>		not listed					
SCROPHULARIACEAE	<i>Gratiola pubescens</i>	hairy brooklime	Recovery needed	4	Vulnerable	no change	4	Vulnerable
SCROPHULARIACEAE	<i>Limosella australis</i>		not listed					
SCROPHULARIACEAE	<i>Veronica calycina</i>		not listed					
SCROPHULARIACEAE	<i>Veronica formosa</i>		not listed					
SCROPHULARIACEAE	<i>Veronica gracilis</i>		not listed					
SCROPHULARIACEAE	<i>Veronica notabilis</i>	forest speedwell	Further research	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
SCROPHULARIACEAE	<i>Veronica novae-hollandiae</i>	New Holland Speedwell	New RFA species	4	vulnerable	no change	4	Vulnerable
SCROPHULARIACEAE	<i>Veronica plebeia</i>	trailing speedwell	New RFA species	5	Rare	no change	5	Rare
SCROPHULARIACEAE	<i>Veronica serpyllifolia</i>		not listed			delisted	5	Rare
SOLANACEAE	<i>Cyphanthera tasmanica</i>	tasmanian ray-flower	new RFA spp	5	rare	no change	5	Rare
SOLANACEAE	<i>Solanum laciniatum</i>		not listed					
SOLANACEAE	<i>Solanum vescum</i>		not listed					
STACKHOUSIACEAE	<i>Stackhousia gunnii</i>	gunn's mignonette	New RFA species	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
STACKHOUSIACEAE	<i>Stackhousia monogyna</i>		not listed					
STACKHOUSIACEAE	<i>Stackhousia viminea</i>	slender stackhousia	New RFA species	5	Rare	no change	5	Rare
STERCULIACEAE	<i>Lasiopetalum micranthum</i>	tasmanian velvet bush	Recovery comm- itted or happening	4	Vulnerable	no change	4	Vulnerable
STYLIDIACEAE	<i>Levenhookia dubia</i>	hairy stylewort	New RFA species	3.2	Endangered (presumed extinct)	no change	3	Endangered (presumed extinct)
STYLIDIACEAE	<i>Stylidium graminifolium</i>		not listed					
THYMELAEACEAE	<i>Pimelea axiflora</i> ssp. <i>axiflora</i>		New RFA species	3.1	endangered (extant)	uplisting	5	Rare
THYMELAEACEAE	<i>Pimelea cinerea</i>		not listed					
THYMELAEACEAE	<i>Pimelea curviflora</i> var. <i>gracilis</i>		Priority species requiring protection	5	Rare	no change	5	Rare
THYMELAEACEAE	<i>Pimelea curviflora</i> var. <i>sericea</i>		New RFA species	5	Rare	no change	5	Rare
THYMELAEACEAE	<i>Pimelea drupacea</i>		not listed					
THYMELAEACEAE	<i>Pimelea filiformis</i>	trailing rice-flower	Priority species requiring protection	5	Rare	no change	5	Rare
THYMELAEACEAE	<i>Pimelea flava</i> ssp. <i>flava</i>	yellow rice-flower	New RFA species	5	Rare	no change	5	Rare
THYMELAEACEAE	<i>Pimelea humilis</i>		not listed					
THYMELAEACEAE	<i>Pimelea ligustrina</i>		not listed					
THYMELAEACEAE	<i>Pimelea linifolia</i> ssp. <i>linifolia</i>		not listed					
THYMELAEACEAE	<i>Pimelea linifolia</i> ssp. <i>linoides</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
THYMELAEACEAE	<i>Pimelea nivea</i>		not listed					
THYMELAEACEAE	<i>Pimelea pauciflora</i>	poison rice-flower or pimelea	Priority species requiring protection	5	Rare	no change	5	Rare
THYMELAEACEAE	<i>Pimelea phyllicoides</i>		not listed					
THYMELAEACEAE	<i>Pimelea stricta</i>		not listed					
TREMANDRACEAE	<i>Tetratheca gunnii</i>	serpentine black-eyed susan	Recovery comm- itted or happening	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
TREMANDRACEAE	<i>Tetratheca labillardierei</i>		not listed					
TREMANDRACEAE	<i>Tetratheca pilosa ssp. latifolia</i>		not listed					
TREMANDRACEAE	<i>Tetratheca pilosa ssp. pilosa</i>		not listed					
URTICACEAE	<i>Australina pusilla ssp. muelleri</i>		New RFA species	5	Rare	no change	5.	rare
URTICACEAE	<i>Australina pusilla ssp. pusilla</i>		not listed					
URTICACEAE	<i>Urtica incisa</i>		not listed					
VIOLACEAE	<i>Hymenanthera dentata</i>		not listed					
VIOLACEAE	<i>Viola betonicifolia</i>		not listed					
VIOLACEAE	<i>Viola caleyana</i>	swamp violet	New RFA species	5	Rare	no change	5	Rare
VIOLACEAE	<i>Viola cleistogamoides</i>		not listed					
VIOLACEAE	<i>Viola cunninghamii</i>	cunningham's violet	New RFA species	5	Rare	no change	5	Rare
VIOLACEAE	<i>Viola hederacea</i>		not listed					
WINTERACEAE	<i>Tasmania lanceolata</i>		not listed					
ZYGOPHYLLACEAE	<i>Zygophyllum billardieri</i>	coast twinleaf	New RFA species	5	Rare	no change	5	Rare
ORDER GYMNOSPERMAE								
CUPRESSACEAE	<i>Callitris oblonga ssp. oblonga</i>	South Esk pine	Recovery needing revision	4	Vulnerable	new listing		
CUPRESSACEAE	<i>Callitris rhomboidea</i>		not listed					
CUPRESSACEAE	<i>Diselma archeri</i>		not listed					
PHYLLOCLADACEAE	<i>Phyllocladus aspleniifolius</i>		not listed					
PODOCARPACEAE	<i>Lagarostrobos franklinii</i>		not listed					
PODOCARPACEAE	<i>Microcachrys tetragona</i>		not listed					
PODOCARPACEAE	<i>Podocarpus lawrencei</i>		not listed					
TAXODIACEAE	<i>Athrotaxis cupressoides</i>		not listed					
TAXODIACEAE	<i>Athrotaxis laxifolia</i>		not listed					
TAXODIACEAE	<i>Athrotaxis selaginoides</i>		not listed					
ORDER MONOCOTYLEDONAE								
BURMANNIACEAE	<i>Thismia rodwayi</i>	fairy lanterns	Further research	5	Rare	no change	5	Rare
CENTROLEPIDACEAE	<i>Aphelia gracilis</i>	slender aphelia	Priority species requiring protection	5	Rare	no change	5	Rare
CENTROLEPIDACEAE	<i>Aphelia pumilio</i>	dwarf aphelia	Priority species requiring protection	5	Rare	no change	5	Rare
CENTROLEPIDACEAE	<i>Centrolepis aristata</i>		not listed					
CENTROLEPIDACEAE	<i>Centrolepis fascicularis</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
CENTROLEPIDACEAE	<i>Centrolepis glabra</i>		not listed					
CENTROLEPIDACEAE	<i>Centrolepis monogyna</i>		not listed					
CENTROLEPIDACEAE	<i>Centrolepis polygyna</i>		not listed					
CENTROLEPIDACEAE	<i>Centrolepis strigosa</i>		not listed					
CENTROLEPIDACEAE	<i>Gaimardia fitzgeraldii</i>		not listed					
CENTROLEPIDACEAE	<i>Gaimardia setacea</i>		not listed					
CYPERACEAE	<i>Baumea articulatus</i>	jointed twig-rush	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Baumea gunnii</i>	slender twig-rush	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Bolboschoenus medianus</i>	marsh club-rush, river bullrush	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Carex aff. diandra</i>		not listed					
CYPERACEAE	<i>Carex appressa</i>		not listed					
CYPERACEAE	<i>Carex bichenoviana</i>		Other species requiring research					
CYPERACEAE	<i>Carex breviculmis</i>		not listed					
CYPERACEAE	<i>Carex cataractae</i>		not listed					
CYPERACEAE	<i>Carex chlorantha</i>		not listed					
CYPERACEAE	<i>Carex gunniana</i>	sedge	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Carex longibrachiata</i>	bergalia tussock, drooping sedge	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Carex tasmanica</i>		New RFA species					
CYPERACEAE	<i>Gahnia grandis</i>		not listed					
CYPERACEAE	<i>Gahnia microstachya</i>		not listed					
CYPERACEAE	<i>Gahnia radula</i>		not listed					
CYPERACEAE	<i>Gahnia rodwayi</i>	rodway's saw-sedge	New RFA spp	5	Rare	no change	5	Rare
CYPERACEAE	<i>Gahnia sieberiana</i>	red-fruit saw-sedge	Priority species requiring protection			delisted	5	Rare
CYPERACEAE	<i>Isolepis habra</i>	alpine club-rush	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Isolepis limbata</i>		not listed					
CYPERACEAE	<i>Isolepis setacea</i>	bristly club-rush	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Isolepis stellata</i>	star club-rush	Further research	5	Rare	no change	5	Rare
CYPERACEAE	<i>Isolepis tasmanica</i>		not listed					
CYPERACEAE	<i>Lepidosperma curtisiae</i>		not listed					
CYPERACEAE	<i>Lepidosperma elatius</i>		not listed					
CYPERACEAE	<i>Lepidosperma ensiforme</i>		not listed					
CYPERACEAE	<i>Lepidosperma globosum</i>		not listed					
CYPERACEAE	<i>Lepidosperma gunnii</i>		not listed					
CYPERACEAE	<i>Lepidosperma inops</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
CYPERACEAE	<i>Lepidosperma laterale</i>		not listed					
CYPERACEAE	<i>Lepidosperma oldfieldii</i>		not listed					
CYPERACEAE	<i>Lepidosperma tortuosum</i>	tortuous or twisting rapier-sedge	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Lepidosperma viscidum</i>	sticky sword-sedge	New RFA species	5	Rare	no change	5	Rare
CYPERACEAE	<i>Schoenoplectus validus</i>	river or lake club-rush	Priority species requiring protection	5	Rare	no change	5	Rare
CYPERACEAE	<i>Schoenus absconditus</i>		not listed					
CYPERACEAE	<i>Schoenus latelaminatus</i>	medusa or gimlet bog-rush	Recovery needed	3.1	endangered	no change	3.1	Endangered (extant)
CYPERACEAE	<i>Tetraria capillaris</i>		not listed					
CYPERACEAE	<i>Uncinia elegans</i>	handsome hooksedge	New RFA species	5	Rare	no change	5	Rare
CYPERACEAE	<i>Uncinia nervosa</i>		not listed					
CYPERACEAE	<i>Uncinia riparia</i>		not listed					
CYPERACEAE	<i>Uncinia tenella</i>		not listed					
IRIDACEAE	<i>Diplarrena latifolia</i>		not listed					
IRIDACEAE	<i>Diplarrena moraea</i>		not listed					
IRIDACEAE	<i>Libertia pulchella</i>		not listed					
IRIDACEAE	<i>Patersonia occidentalis</i>		not listed					
JUNCACEAE	<i>Juncus amabilis</i>	gentle juncus	Priority species requiring protection	5	Rare	no change	5	Rare
JUNCACEAE	<i>Juncus bassianus</i>		not listed					
JUNCACEAE	<i>Juncus filicaulis</i>		not listed					
JUNCACEAE	<i>Juncus pauciflorus</i>		not listed					
JUNCACEAE	<i>Juncus planifolius</i>		not listed					
JUNCACEAE	<i>Juncus prismatocarpus</i>	branching rush	New RFA spp	5	Rare	no change	5	Rare
JUNCACEAE	<i>Juncus vaginatus</i>	clustered rush	Priority species requiring protection	5	Rare	no change	5	Rare
JUNCACEAE	<i>Luzula campestris</i>		not listed					
JUNCACEAE	<i>Luzula congesta</i>		not listed					
LILIACEAE	<i>Arthropodium milleflorum</i>		not listed					
LILIACEAE	<i>Arthropodium minus</i>		Other species requiring research					
LILIACEAE	<i>Bulbine glauca</i>		not listed					
LILIACEAE	<i>Bulbine semibarbata</i>		not listed					
LILIACEAE	<i>Burchardia umbellata</i>		not listed					
LILIACEAE	<i>Caesia calliantha</i>	blue grass-lily	Priority species requiring protection	5	Rare	no change	5	Rare
LILIACEAE	<i>Campynema lineare</i>		not listed					
LILIACEAE	<i>Chamaescilla corymbosa</i> var. <i>corymbosa</i>		not listed					
LILIACEAE	<i>Dianella anoema</i>		New RFA spp					
LILIACEAE	<i>Dianella brevicaulis</i>		not listed					
LILIACEAE	<i>Dianella longifolia</i> var.		Priority species	5	Rare	no change	5	rare

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
LILIACEAE	<i>longifolia</i>		requiring protection					
LILIACEAE	<i>Dianella revoluta</i>		not listed					
LILIACEAE	<i>Dianella tasmanica</i>		not listed					
LILIACEAE	<i>Dichopogon strictus</i>		new RFA spp	5	Rare	no change	5	rare
LILIACEAE	<i>Drymophila cyanocarpa</i>		not listed					
LILIACEAE	<i>Hypoxis vaginata</i> var. <i>brevistigmata</i>	puple star	not listed					
LILIACEAE	<i>Hypoxis vaginata</i> var. <i>vaginata</i>	puple star	Further research	5	Rare	no change	5	Rare
LILIACEAE	<i>Thelionema caespitosum</i>		not listed					
LILIACEAE	<i>Thysanotus patersonii</i>		not listed					
LILIACEAE	<i>Tricoryne elatior</i>	yellow rush-lily, yellow autumn lily	Recovery needed	4	Vulnerable	no change	4	Vulnerable
LILIACEAE	<i>Wurmbea latifolia</i>	early nancy, harbinger-of- spring	Further research	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Arthrochilus huntianus</i> ssp. <i>huntianus</i>	elbow orchid	Priority species requiring protection	3.1	Endangered (extant)	uplisted	5	Rare
ORCHIDACEAE	<i>Arthrochilus huntianus</i> ssp. <i>nothofagicola</i>	elbow orchid	New RFA species	3.1	Endangered (extant)	new listing		Endangered (extant)
ORCHIDACEAE	<i>Caladenia alata</i>	winged caladenia	not listed				5	Rare
ORCHIDACEAE	<i>Caladenia anthracina</i>	black-tipped spider orchid	New RFA species	3.1	Endangered (extant)	new listing		
ORCHIDACEAE	<i>Caladenia atrata</i>		not listed					
ORCHIDACEAE	<i>Caladenia atrochila</i>		not listed					
ORCHIDACEAE	<i>Caladenia caudata</i>	tailed spider orchid	New RFA spp	5	rare	new listing		
ORCHIDACEAE	<i>Caladenia clavigera</i>		not listed					
ORCHIDACEAE	<i>Caladenia congesta</i>	black-tongue caladenia	New RFA species.	3.1	Endangered (extant)	uplisted	5	Rare
ORCHIDACEAE	<i>Caladenia deformis</i>		not listed					
ORCHIDACEAE	<i>Caladenia dilatata</i>		not listed					
ORCHIDACEAE	<i>Caladenia filamentosa</i> var. <i>filamentosa</i>	daddy long legs	New RFA species.	5	rare	new listing		
ORCHIDACEAE	<i>Caladenia gracilis</i>		not listed					
ORCHIDACEAE	<i>Caladenia helvina</i>	summer spider orchid	not listed			delisted	5	Rare
ORCHIDACEAE	<i>Caladenia lindleyana</i>	lindley's spider orchid	Recovery needed	3.1	Endangered (extant)	uplisted	5	Rare
ORCHIDACEAE	<i>Caladenia pallida</i>	pale spider orchid	Recovery needed	3.1	Endangered (extant)	uplisted	4	Vulnerable
ORCHIDACEAE	<i>Caladenia patersonii</i>		not listed					
ORCHIDACEAE	<i>Caladenia saggicola</i>		new RFA species	3.1	Endangered (extant)	uplisted	5	rare
ORCHIDACEAE	<i>Caladenia sylvicola</i>		new RFA species	3.1	Endangered (extant)	uplisted	5	rare
ORCHIDACEAE	<i>Caladenia tonellii</i>	robust fingers	New RFA species.	3.1	Endangered (extant)	new listing		
ORCHIDACEAE	<i>Caladenia transitoria</i>		not listed					
ORCHIDACEAE	<i>Caladenia vulgaris</i>		not listed					
ORCHIDACEAE	<i>Caleana major</i>		not listed					
ORCHIDACEAE	<i>Caleana minor</i>	small duck orchid	not listed			delisted	5	Rare

TABLE 2								
Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
ORCHIDACEAE	<i>Calochilus campestris</i>	copper beard orchid	New RFA species	3.1	Endangerd (extant)	new listing		
ORCHIDACEAE	<i>Calochilus robertsonii</i>		not listed					
ORCHIDACEAE	<i>Chiloglottis cornuta</i>		not listed					
ORCHIDACEAE	<i>Chiloglottis grammata</i>		not listed					
ORCHIDACEAE	<i>Chiloglottis gunnii</i>		not listed					
ORCHIDACEAE	<i>Chiloglottis trapeziformis</i>	broad-lip bird orchid	Priority species requiring protection	3.1	endangered (extant)	uplisted	5	Rare
ORCHIDACEAE	<i>Chiloglottis triceratops</i>		not listed					
ORCHIDACEAE	<i>Corybas aconitiflorus</i>		not listed					
ORCHIDACEAE	<i>Corybas diemenicus</i>	stately helmet orchid	not listed			delisted	5	Rare
ORCHIDACEAE	<i>Corybas fimbriatus</i>		not listed					
ORCHIDACEAE	<i>Corybas incurvus</i>		not listed					
ORCHIDACEAE	<i>Cyrtostylis reniformis</i>		not listed					
ORCHIDACEAE	<i>Cyrtostylis robusta</i>		New RFA spp	5	rare	new listing		
ORCHIDACEAE	<i>Dipodium roseum</i>		not listed					
ORCHIDACEAE	<i>Diuris palustris</i>	swamp diuris	new RFA spp	3.1	Endangered (extant)	uplisted	5	Rare
ORCHIDACEAE	<i>Diuris pardina</i>		not listed					
ORCHIDACEAE	<i>Diuris sulphurea</i>		not listed					
ORCHIDACEAE	<i>Gastrodia procera</i>		not listed					
ORCHIDACEAE	<i>Gastrodia sesamoides</i>		not listed					
ORCHIDACEAE	<i>Genoplesium despectans</i>		not listed					
ORCHIDACEAE	<i>Genoplesium nudum</i>	tiny midge orchid	New RFA spp	5	Rare	no change	5	rare
ORCHIDACEAE	<i>Glossodia major</i>		not listed					
ORCHIDACEAE	<i>Microtis arenaria</i>		not listed					
ORCHIDACEAE	<i>Prasophyllum apoxychilum</i>	tapered leek orchid	New RFA species	3.1	endangered	new listing		
ORCHIDACEAE	<i>Prasophyllum brevilabre</i>		not listed					
ORCHIDACEAE	<i>Prasophyllum correctum</i>	gaping leek orchid	New RFA species	3.1	endangered	new listing		
ORCHIDACEAE	<i>Prasophyllum flavum</i>		not listed					
ORCHIDACEAE	<i>Prasophyllum milfordense</i>		Recovery needed; Other species requiring research	3.1	endangered	new listing		
ORCHIDACEAE	<i>Prasophyllum montanum</i>	mountain leek orchid	New RFA species	3.1	endangered	uplisting	5	Rare
ORCHIDACEAE	<i>Prasophyllum perangustum</i>		New RFA species	3.1	endangered	new listing		
ORCHIDACEAE	<i>Prasophyllum robustum</i>	robust leek orchid	Priority species requiring protection	3.1	endangered	rediscovered 'extinct' species	3.2	Endangered (presumed extinct)
ORCHIDACEAE	<i>Prasophyllum stellatum</i>	Ben Lomond leek orchid	New RFA species	3.1	endangered	new listing		
ORCHIDACEAE	<i>Prasophyllum tadgellii</i>	Tadgell's leek orchid	New RFA species	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Prasophyllum truncatum</i>	truncate leek orchid	not listed			delisted	5	Rare
ORCHIDACEAE	<i>Pterostylis atriola</i>	Snug greenhood	New RFA species	3.1	Endangered (extant)	new listing		
ORCHIDACEAE	<i>Pterostylis commutata</i>	Midlands greenhood	New RFA species	3.1	Endangered (extant)	new listing		
ORCHIDACEAE	<i>Pterostylis concinna</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
ORCHIDACEAE	<i>Pterostylis curta</i>		not listed					
ORCHIDACEAE	<i>Pterostylis cynnocephala</i>	Swan greenhood	New RFA species	3.1	Endangered (extant)	new listing		
ORCHIDACEAE	<i>Pterostylis decurva</i>		not listed					
ORCHIDACEAE	<i>Pterostylis dubia</i>		not listed					
ORCHIDACEAE	<i>Pterostylis falcata</i>	sickle greenhood	New RFA species	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Pterostylis foliata</i>		not listed					
ORCHIDACEAE	<i>Pterostylis furcata</i>		not listed					
ORCHIDACEAE	<i>Pterostylis grandiflora</i>	cobra greenhood	not listed	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Pterostylis nana</i>		not listed					
ORCHIDACEAE	<i>Pterostylis nutans</i>		not listed					
ORCHIDACEAE	<i>Pterostylis parviflora</i>		not listed					
ORCHIDACEAE	<i>Pterostylis pedoglossa</i>		not listed					
ORCHIDACEAE	<i>Pterostylis pedunculata</i>		not listed					
ORCHIDACEAE	<i>Pterostylis sanguinea</i>	banded greenhood	New RFA species	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Pterostylis scabrida</i>		not listed					
ORCHIDACEAE	<i>Pterostylis squamata</i>	ruddy greenhood	New RFA species	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Pterostylis tunstallii</i>	Tunstall's greenhood	New RFA species	3.1	Endangered (extant)	new listing		
ORCHIDACEAE	<i>Sarcochilus australis</i>		not listed					
ORCHIDACEAE	<i>Thelymitra mucida</i>	Plum greenhood	New RFA species	5	Rare	no change	5	Rare
ORCHIDACEAE	<i>Thelymitra rubra</i>		not listed					
ORCHIDACEAE	<i>Townsonia viridis</i>		not listed					
POACEAE	<i>Agrostis aemula</i> var. <i>aemula</i>	blown grass	New RFA species	5	Rare	no change	5	Rare
POACEAE	<i>Agrostis aemula</i> var. <i>setifolia</i>	bristle blown grass	Priority species requiring protection	5	Rare	no change	5	Rare
POACEAE	<i>Agrostis aff. australiensis</i>	flat-leaved southern bent	New RFA species	5	Rare	no change	5	Rare
POACEAE	<i>Agrostis aff. scabra</i>		not listed					
POACEAE	<i>Agrostis parviflora</i>		not listed					
POACEAE	<i>Amphibromus macrorhinus</i>	long-nosed swamp wallaby-grass	Recovery needed	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
POACEAE	<i>Aristida benthamii</i>	three-awned spear grass	New RFA species	3.1	Endangered	no change	3.1	Endangered (extant)
POACEAE	<i>Australopyrum pectinatum</i>		not listed					
POACEAE	<i>Australopyrum velutinum</i>	mountain wheat grass	New RFA species	5	Rare	no change	5	Rare
POACEAE	<i>Austrodanthonia popinensis</i>	roadside wallaby-grass	Priority species requiring protection	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
POACEAE	<i>Austrodanthonia remota</i>	remote wallaby-grass	new RFA spp	5	Rare	no change	5	Rare
POACEAE	<i>Austrofestuca hookeriana</i>	hooker fescue	Priority species requiring protection			delisted	5	Rare
POACEAE	<i>Austrofestuca plebeia</i>		Other species requiring research					
POACEAE	<i>Austrostipa aphylla</i>		not listed					
POACEAE	<i>Austrostipa bigeniculata</i>	rare spear-grass	New RFA species	5	Rare	no change	5	Rare
POACEAE	<i>Austrostipa blackii</i>	crested spear-grass	New RFA species	5	Rare	no change	5	Rare
POACEAE	<i>Austrostipa nodosa</i>	spear grass	New RFA species	5	Rare	no change	5	Rare

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
POACEAE	<i>Austrostipa scabra</i>	rough spear-grass	Priority species requiring protection			no change	5	Rare
POACEAE	<i>Bromus japonicus</i> var. <i>vestutis</i>	sand brome	New RFA species	3.1	Endangered (presumed extinct)	new listing		
POACEAE	<i>Danthonia geniculata</i>		not listed					
POACEAE	<i>Danthonia gracilis</i>		not listed					
POACEAE	<i>Danthonia nitens</i>		Other species requiring research					
POACEAE	<i>Deyeuxia apsleyensis</i>	apsley bent grass	new RFA spp	5	Rare	no change	5	Rare
POACEAE	<i>Deyeuxia benthamiana</i>	bent grass	new RFA spp	5	Rare	no change	5	Rare
POACEAE	<i>Deyeuxia brachyathera</i>	bent grass	new RFA spp	5	Rare	no change	5	Rare
POACEAE	<i>Deyeuxia contracta</i>		not listed					
POACEAE	<i>Deyeuxia decipiens</i>	trickerey-grass	new RFA spp	5	Rare	no change	5	Rare
POACEAE	<i>Deyeuxia frigida</i>		not listed					
POACEAE	<i>Deyeuxia lawrencei</i>	lawrence's bent grass	Further research	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
POACEAE	<i>Deyeuxia minor</i>	bent grass	Priority sp. requir- ing protection	5	Rare	no change	5	Rare
POACEAE	<i>Deyeuxia quadriseta</i>		not listed					
POACEAE	<i>Deyeuxia rodwayi</i>		not listed					
POACEAE	<i>Deyeuxia scaberula</i>		not listed					
POACEAE	<i>Dichelachne inaequiglumis</i>	asymmetrical plume-grass	not listed			delisted	5	Rare
POACEAE	<i>Dichelachne micrantha</i>		not listed					
POACEAE	<i>Dichelachne rara</i>		not listed					
POACEAE	<i>Dryopoa dives</i>	giant mountain grass	Priority sp. requiring protection	5	Rare	no change	5	Rare
POACEAE	<i>Echinopogon ovatus</i>		not listed					
POACEAE	<i>Ehrharta acuminata</i>		not listed					
POACEAE	<i>Ehrharta distichophylla</i>		not listed					
POACEAE	<i>Ehrharta juncea</i>	forest wire-grass	Priority sp. requiring protection	5	Rare	no change	5	Rare
POACEAE	<i>Ehrharta stipoides</i>		not listed					
POACEAE	<i>Ehrharta tasmanica</i>		not listed					
POACEAE	<i>Elymus scaber</i>		not listed					
POACEAE	<i>Hierochloe rariflora</i>	cane holy-grass, scented holy-grass	New RFA spp	5	Rare	no change	5	Rare
POACEAE	<i>Pentapogon quadrifidus</i>		not listed					
POACEAE	<i>Poa clelandii</i>		not listed					
POACEAE	<i>Poa labillardieri</i>		not listed					
POACEAE	<i>Poa mollis</i>	soft poa grass	Priority sp. requiring protection	5	Rare	no change	5	Rare
POACEAE	<i>Poa rodwayi</i>		not listed					
POACEAE	<i>Poa sieberiana</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
POACEAE	<i>Poa tenera</i>		not listed					
POACEAE	<i>Rytidosperma procerum</i>	tall wallaby-grass	Priority sp. requiring protection	5	Rare	no change	5	Rare
POACEAE	<i>Themeda triandra</i>		not listed					
RESTIONACEAE	<i>Baloskion tetraphyllum</i> subsp. <i>tetrap</i>		not listed					
RESTIONACEAE	<i>Calorophus elongatus</i>		not listed					
RESTIONACEAE	<i>Empodisma minus</i>		not listed					
RESTIONACEAE	<i>Eurychorda complanata</i>		not listed					
RESTIONACEAE	<i>Hypolaena fastigiata</i>		not listed					
RESTIONACEAE	<i>Leptocarpus tenax</i>		not listed					
XANTHORRHOEACEAE	<i>Lomandra longifolia</i>		not listed					
XANTHORRHOEACEAE	<i>Lomandra nana</i>		not listed					
XANTHORRHOEACEAE	<i>Xanthorrhoea australis</i>		not listed					
XANTHORRHOEACEAE	<i>Xanthorrhoea bracteata</i>	grass-tree, black-boy	Recovery needed	4	Vulnerable	no change	4	Vulnerable
ORDER PTERIDOPHYTA								
ADIANTACEAE	<i>Adiantum aethiopicum</i>		not listed					
ADIANTACEAE	<i>Anogramma leptophylla</i>	annual fern	Recovery needed	5	Rare	no change	5	Rare
ADIANTACEAE	<i>Cheilanthes austrotenuifolia</i>		not listed					
ADIANTACEAE	<i>Cheilanthes distans</i>	cloak fern	Recovery needed	3.1	Endangered (extant)	no change	3.1	Endangered (extant)
ADIANTACEAE	<i>Cheilanthes sieberi</i>		not listed					
ADIANTACEAE	<i>Pellaea calidurupium</i>	hot-rock fern	New RFA species	5	Rare	no change	5	Rare
ADIANTACEAE	<i>Pellaea falcata</i>		not listed					
ASPLENIACEAE	<i>Asplenium bulbiferum</i>		not listed					
ASPLENIACEAE	<i>Asplenium flabellifolium</i>		not listed					
ASPLENIACEAE	<i>Asplenium flaccidum</i>		not listed					
ASPLENIACEAE	<i>Asplenium hookerianum</i>	hooker's spleenwort	Recovery needed	4	Vulnerable	no change	4	Vulnerable
ASPLENIACEAE	<i>Asplenium obtusatum</i>		not listed					
ASPLENIACEAE	<i>Asplenium terrestre</i>		not listed					
ASPLENIACEAE	<i>Asplenium trichomanes</i>		not listed					
ASPLENIACEAE	<i>Asplenium trichomanes ssp.</i> <i>trichomanes</i>		Other species requiring research					
ASPLENIACEAE	<i>Pleurosorus rutifolius</i>		not listed					
ATHYRIACEAE	<i>Cystopteris tasmanica</i>		not listed					
ATHYRIACEAE	<i>Diplazium australe</i>		not listed					
AZOLLACEAE	<i>Azolla filiculoides</i>		not listed					
BLECHNACEAE	<i>Blechnum cartilagineum</i>	gristle-fern	Recovery needed	4	Vulnerable	no change	4	Vulnerable
BLECHNACEAE	<i>Blechnum chambersii</i>		not listed					
BLECHNACEAE	<i>Blechnum fluviatile</i>		not listed					
BLECHNACEAE	<i>Blechnum minus</i>		not listed					
BLECHNACEAE	<i>Blechnum nudum</i>		not listed					
BLECHNACEAE	<i>Blechnum patersonii</i>		not listed					
BLECHNACEAE	<i>Blechnum penna-marina</i>		not listed					

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
BLECHNACEAE	<i>Blechnum vulcanicum</i>		not listed					
BLECHNACEAE	<i>Blechnum wattsii</i>		not listed					
BLECHNACEAE	<i>Doodia caudata</i>	small rasp-fern	Recovery needed	4	Vulnerable	no change	4	Vulnerable
BLECHNACEAE	<i>Doodia media</i>		not listed					
CYATHEACEAE	<i>Cyathea australis</i>		not listed					
CYATHEACEAE	<i>Cyathea cunninghamii</i>		Other species requiring research					
CYATHEACEAE	<i>Cyathea X marcescens</i>		Further research	4	vulnerable	no change	4	Vulnerable
DENNSTAEDTIACEAE	<i>Histiopteris incisa</i>		not listed					
DENNSTAEDTIACEAE	<i>Hypolepis amaurorachis</i>		not listed					
DENNSTAEDTIACEAE	<i>Hypolepis distans</i>	scrambling gound-fern	Recovery needed	4	Vulnerable	no change	4	Vulnerable
DENNSTAEDTIACEAE	<i>Hypolepis glandulifera</i>		not listed					
DENNSTAEDTIACEAE	<i>Hypolepis muelleri</i>	harsh ground-fern	New RFA spp	5	Rare	no change	5	Rare
DENNSTAEDTIACEAE	<i>Hypolepis rugosula</i>		not listed					
DENNSTAEDTIACEAE	<i>Pteridium esculentum</i>		not listed					
DICKSONIACEAE	<i>Calochlaena dubia</i>		not listed					
DICKSONIACEAE	<i>Dicksonia antarctica</i>		not listed					
DRYOPTERIDACEAE	<i>Lastreopsis acuminata</i>		not listed					
DRYOPTERIDACEAE	<i>Lastreopsis hispida</i>		not listed					
DRYOPTERIDACEAE	<i>Polystichum proliferum</i>		not listed					
DRYOPTERIDACEAE	<i>Rumohra adiantiformis</i>		not listed					
GLEICHENIACEAE	<i>Gleichenia abscida</i>		not listed					
GLEICHENIACEAE	<i>Gleichenia alpina</i>		not listed					
GLEICHENIACEAE	<i>Gleichenia dicarpa</i>		not listed					
GLEICHENIACEAE	<i>Gleichenia microphylla</i>		not listed					
GLEICHENIACEAE	<i>Sticherus tener</i>		not listed					
GRAMMITIDACEAE	<i>Ctenopteris heterophylla</i>		not listed					
GRAMMITIDACEAE	<i>Grammitis billardierei</i>		not listed					
GRAMMITIDACEAE	<i>Grammitis magellanica</i>		not listed					
GRAMMITIDACEAE	<i>Grammitis poeppigiana</i>		not listed					
GRAMMITIDACEAE	<i>Grammitis pseudociliata</i>		not listed					
HYMENOPHYLLACEAE	<i>Apteropteris applanata</i>		not listed					
HYMENOPHYLLACEAE	<i>Hymenophyllum australe</i>		not listed					
HYMENOPHYLLACEAE	<i>Hymenophyllum cupressiforme</i>		not listed					
HYMENOPHYLLACEAE	<i>Hymenophyllum flabellatum</i>		not listed					
HYMENOPHYLLACEAE	<i>Hymenophyllum marginatum</i>		not listed					
HYMENOPHYLLACEAE	<i>Hymenophyllum peltatum</i>		not listed					
HYMENOPHYLLACEAE	<i>Hymenophyllum rarum</i>		not listed					
HYMENOPHYLLACEAE	<i>Polyphlebium venosum</i>		not listed					
ISOETACEAE	<i>Isoetes gunnii</i>		not listed					
LINDSAEACEAE	<i>Lindsaea linearis</i>		not listed					
LINDSAEACEAE	<i>Lindsaea trichomanoides</i>	oval wedge-fern	not listed			no change	5	Rare

TABLE 2 Family	Genus species	Common name	RFA Attachment 2	TSPA schedule 2000	Status 2000	Change	TSPA schedule 1995	TSPA status
LYCOPODIACEAE	<i>Huperzia australiana</i>		not listed					
LYCOPODIACEAE	<i>Huperzia varia</i>		not listed					
LYCOPODIACEAE	<i>Lycopodiella lateralis</i>		not listed					
LYCOPODIACEAE	<i>Lycopodium deuterodensum</i>		not listed					
LYCOPODIACEAE	<i>Lycopodium fastigiatum</i>		not listed					
LYCOPODIACEAE	<i>Lycopodium scariosum</i>		not listed					
MARSILIACEAE	<i>Pilularia novae-hollandiae</i>	Austral pillwort	New RFA species	5	Rare	no change	5	Rare
OPHIOGLOSSACEAE	<i>Botrychium australe</i>	austral moonwort, parsley-fern	New RFA species	3.2	Endangered (presumed extinct)	no change	3.2	Endangered (presumed extinct)
OPHIOGLOSSACEAE	<i>Botrychium lunaria</i>		not listed					
OPHIOGLOSSACEAE	<i>Ophioglossum lusitanicum</i>		not listed					
OSMUNDACEAE	<i>Todea barbara</i>		not listed					
POLYPODIACEAE	<i>Phymatosorus pustulatus</i>		not listed					
PSILOTACEAE	<i>Tmesipteris elongata</i>		not listed					
PSILOTACEAE	<i>Tmesipteris obliqua</i>		not listed					
PSILOTACEAE	<i>Tmesipteris parva</i>	small fork-fern	New RFA species	5	Rare	no change	5	Rare
PTERIDACEAE	<i>Pteris comans</i>		not listed					
PTERIDACEAE	<i>Pteris tremula</i>		not listed					
SCHIZAEACEAE	<i>Schizaea bifida</i>		not listed					
SCHIZAEACEAE	<i>Schizaea fistulosa</i>		not listed					
SELAGINELLACEAE	<i>Selaginella uliginosa</i>		not listed					
THELYPTERIDACEAE	<i>Pneumatopteris pennigera</i>	lime fern	Recovery needed	4	Vulnerable	no change	4	Vulnerable

APPENDIX 1.2.b Listed Forest Dwelling Species

Species	Common name	Prescription source	Basis for recommendation	Recommendation
FAUNA				
<i>Accipiter novaehollandiae</i>	Grey goshawk	Threatened Fauna Advisor		
<i>Antipodia chaostola</i>	Chaostola skipper	Threatened Fauna Advisor		
<i>Aquila audax</i>	Wedge-tailed eagle	Recovery Plan/Threatened Fauna Advisor		
<i>Astacopsis gouldi</i>	Giant Freshwater Crayfish	Recovery Plan/Threatened Fauna Advisor		
<i>Austrochloritis victoriae</i>	Southern hairy red snail	Threatened Fauna Advisor	Rediscovered; Forest dwelling	Add to RFA priority species list
<i>Beddomeia angulata</i>	Hydrobiid Snail (Rabid River)	Threatened Fauna Advisor		
<i>Beddomeia averti</i>	Hydrobiid Snail (West Gawler)	Threatened Fauna Advisor		
<i>Beddomeia bellii</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Beddomeia bowryensis</i>	Hydrobiid Snail (Bowry Creek)	Threatened Fauna Advisor		
<i>Beddomeia briansmithi</i>	Hydrobiid Snail (Fern Creek)	Threatened Fauna Advisor		
<i>Beddomeia camensis</i>	Hydrobiid Snail (Cam River)	Threatened Fauna Advisor		
<i>Beddomeia capensis</i>	Hydrobiid Snail (Table Cape)	Threatened Fauna Advisor		
<i>Beddomeia fallax</i>	Hydrobiid Snail (Heathcote Creek)	Threatened Fauna Advisor		
<i>Beddomeia forthensis</i>	Hydrobiid Snail (Wilmot River)	Threatened Fauna Advisor		
<i>Beddomeia franklandensis</i>	Hydrobiid Snail (Frankland River)	Threatened Fauna Advisor		
<i>Beddomeia fromensis</i>	Hydrobiid Snail (Frome River)	Threatened Fauna Advisor		
<i>Beddomeia fultoni</i>	Hydrobiid Snail (Farnhams Creek)	Threatened Fauna Advisor		
<i>Beddomeia gibba</i>	Hydrobiid Snail (Salmon River Road)	Threatened Fauna Advisor		
<i>Beddomeia hallae</i>	Hydrobiid Snail (Buttons Rivulet)	Threatened Fauna Advisor		
<i>Beddomeia hermansi</i>	Hydrobiid Snail (Viking Creek)	Threatened Fauna Advisor		
<i>Beddomeia hullii</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Beddomeia inflata</i>	Hydrobiid Snail (Heathcote Creek)	Threatened Fauna Advisor		
<i>Beddomeia kershawi</i>	Hydrobiid Snail (Macquarie River)	Threatened Fauna Advisor		
<i>Beddomeia kessneri</i>	Hydrobiid Snail (Dip Falls)	Threatened Fauna Advisor		
<i>Beddomeia krybetes</i>	Hydrobiid Snail (Great Lake)	Threatened Fauna Advisor		
<i>Beddomeia launcestonensis</i>	Hydrobiid Snail (Cataract Gorge)	Threatened Fauna Advisor		
<i>Beddomeia lodderae</i>	Hydrobiid Snail (Upper Castra Rivulet)	Threatened Fauna Advisor		
<i>Beddomeia mesibovi</i>	Hydrobiid Snail (Arthur River)	Threatened Fauna Advisor		
<i>Beddomeia minima</i>	Hydrobiid Snail (Scottsdale)	Threatened Fauna Advisor		
<i>Beddomeia petterdi</i>	Hydrobiid Snail (Blyth River)	Threatened Fauna Advisor		
<i>Beddomeia phasianella</i>	Hydrobiid Snail (Keddies Creek)	Threatened Fauna Advisor		
<i>Beddomeia protuberata</i>	Hydrobiid Snail (Emu River)	Threatened Fauna Advisor		
<i>Beddomeia ronaldi</i>	Hydrobiid Snail (St. Patricks River)	Threatened Fauna Advisor		
<i>Beddomeia salmonis</i>	Hydrobiid Snail (Salmon River)	Threatened Fauna Advisor		
<i>Beddomeia tasmanica</i>	Hydrobiid Snail (Terrys Creek)	Threatened Fauna Advisor		
<i>Beddomeia topsiae</i>	Hydrobiid Snail (Williamson Creek)	Threatened Fauna Advisor		
<i>Beddomeia trochiformis</i>	Hydrobiid Snail (Bowry Creek)	Threatened Fauna Advisor		
<i>Beddomeia tumida</i>	Hydrobiid Snail (St. Pauls River)	Threatened Fauna Advisor		
<i>Beddomeia turnerae</i>	Hydrobiid Snail (Minnow River)	Threatened Fauna Advisor		

Species	Common name	Prescription source	Basis for recommendation	Recommendation
<i>Beddomeia waterhouseae</i>	Hydrobiid Snail (Clayton's Rivulet)	Threatened Fauna Advisor		
<i>Beddomeia wilmotensis</i>	Hydrobiid Snail (Wilmot river)	Threatened Fauna Advisor		
<i>Beddomeia wiseae</i>	Hydrobiid Snail (Blizzards Creek)	Threatened Fauna Advisor		
<i>Beddomeia zeehanensis</i>	Hydrobiid Snail (Little Henty River)	Threatened Fauna Advisor		
<i>Catadromus lacordairei</i>	Catadromus carabid beetle	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Charopidae "Skemps"</i>	"Skemps" snail	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Dasyurus maculatus</i>	Spotted tailed quoll	Threatened Fauna Advisor		
<i>Diplectrona lyella</i>	Caddisfly	Threatened Fauna Advisor		
<i>Ecnomina vega</i>	Caddisfly	Threatened Fauna Advisor		
<i>Engaeus orramakunna</i>	Mt. Arthur Burrowing Crayfish	Recovery Plan/Threatened Fauna Advisor		
<i>Engaeus spinicaudatus</i>	Scottsdale Burrowing Crayfish	Recovery Plan/Threatened Fauna Advisor		
<i>Engaeus yabbimunna</i>	Burrowing Crayfish (Burnie)	Recovery Plan/Threatened Fauna Advisor		
<i>Fraus latistria</i>	Broad-striped ghost moth	Threatened Fauna Advisor		
<i>Galaxias auratus</i>	Golden galaxias	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Galaxias fontanus</i>	Swan galaxias	Recovery Plan/Threatened Fauna Advisor		
<i>Galaxias johnstoni</i>	Clarence galaxias	Recovery Plan/Threatened Fauna Advisor		
<i>Galaxias parvus</i>	Swamp galaxias	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Galaxias tanycephalus</i>	Saddled galaxias	Threatened Fauna Advisor		
<i>Galaxiella pusilla</i>	Dwarf galaxias	Recovery Plan/Threatened Fauna Advisor		
<i>Glacidorbis pawpela</i>	Hydrobiid Snail (Great Lake)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Goedetrechus mendumae</i>	Cave Beetle (Ida Bay)	Threatened Fauna Advisor		
<i>Goedetrechus parallelus</i>	Cave Beetle (June-Florentine)	Threatened Fauna Advisor		
<i>Helicarion rubicundus</i>	Burgundy snail	Threatened Fauna Advisor		
<i>Hickmanoxymomma cavaticum</i>	Cave Harvestman	Threatened Fauna Advisor		
<i>Hickmanoxymomma gibbergunyar</i>	Cave Harvestman	Threatened Fauna Advisor		
<i>Hoplogonus bornemisszai</i>	Bornemisszas stag beetle	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Hoplogonus simsoni</i>	Simsons stag beetle	Threatened Fauna Advisor		
<i>Hoplogonus vanderschoori</i>	Vanderschoors stag beetle	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Hydrobiosella armata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Hydrobiosella sagitta</i>	Caddisfly	Threatened Fauna Advisor		
<i>Hydroptila scamandra</i>	Caddisfly	Threatened Fauna Advisor		
<i>Idacarabus cordicollis</i>	Cave Beetle (Hastings Cave)	Threatened Fauna Advisor		
<i>Idacarabus troglodytes</i>	Cave Beetle (Precipitous Bluff)	Threatened Fauna Advisor		
<i>Lathamus discolor</i>	Swift parrot	Recovery Plan/Threatened Fauna Advisor		
<i>Leptocerus soutu</i>	Caddisfly	Threatened Fauna Advisor		
<i>Lissotes latidens</i>	Broad-toothed stag beetle	Threatened Fauna Advisor		
<i>Lissotes menalcas</i>	Mt Mangana stag beetle	Threatened Fauna Advisor		
<i>Litoria raniformis</i>	Green and gold frog	Listing Statement/Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Mesacanthotelson setosus</i>	Isopod (Great Lake)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Mesacanthotelson tasmaniae</i>	Isopod (Great Lake)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Micropathus kiernani</i>	Cave Cricket	Threatened Fauna Advisor		
<i>Migas plomleyi</i>	Spider (Cataract Gorge)		Does not occur in production forest	Remove from list

Species	Common name	Prescription source	Basis for recommendation	Recommendation
<i>Miselaoma weldi</i>	Stanley Snail		Does not occur in production forest	Remove from list
<i>Oecetis gilva</i>	Caddisfly	Threatened Fauna Advisor		
<i>Olgaia excavata</i>	Cave Spider (Bubs Hill Cave)	Threatened Fauna Advisor		
<i>Onchotelson brevicaudatus</i>	Isopod (Great Lake & Shannon Lagoon)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Onchotelson spatulatus</i>	Isopod (Great Lake)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Ooperipatellus cryptus</i>	Northwest velvet worm	Threatened Fauna Advisor		
<i>Oreixenica ptunarra</i>	Ptunarra brown butterfly	Threatened Fauna Advisor		
<i>Orphninostrichia maculata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Orthotrichia adornata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Oxyethira mienica</i>	Caddisfly	Threatened Fauna Advisor		
<i>Paragalaxias dissimilis</i>	Shannon paragalaxias	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Paragalaxias eleotroides</i>	Great Lake paragalaxias	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Paragalaxias mesotes</i>	Arthurs paragalaxias	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Pardalotus quadragintus</i>	Forty-spotted pardalote	Threatened Fauna Advisor		
<i>Pasmaditta jungermanniae</i>	"Cataract Gorge" snail	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Perameles gunni</i>	Eastern barred bandicoot	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Phrantela annamurrayae</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Phrantela conica</i>	Hydrobiid Snail (Little Henty River)	Threatened Fauna Advisor		
<i>Phrantela marginata</i>	Hydrobiid Snail (Heazlewood River)	Threatened Fauna Advisor		
<i>Phrantela pupiformis</i>	Hydrobiid Snail (Tyenna River)	Threatened Fauna Advisor		
<i>Prototroctes maraena</i>	Australian grayling	Threatened Fauna Advisor		
<i>Pseudomys novaehollandiae</i>	New Holland mouse	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Pseudotyranochthonius typhlus</i>	Cave Pseudoscorpion (Mole Creek)	Threatened Fauna Advisor		
<i>Ramiheithrus kocinus</i>	Caddisfly	Threatened Fauna Advisor		
<i>Roblinella agnewi</i>	Silky Snail		Does not occur in production forest	Remove from list
<i>Schayera baiulus</i>	Schayers grasshopper	Threatened Fauna Advisor		
<i>Stenopsychodes lineata</i>	Caddisfly	Threatened Fauna Advisor		
<i>Tasimia drepana</i>	Caddisfly	Threatened Fauna Advisor		
<i>Tasmanipatus anophthalmus</i>	Blind velvet worm	Threatened Fauna Advisor		
<i>Tasmanipatus barretti</i>	Giant velvet worm	Threatened Fauna Advisor		
<i>Tasmanotrechus cockerilli</i>	Cave Beetle (Mole Creek)	Threatened Fauna Advisor		
<i>Tasmaphena lamproides</i>	Keeled snail	Threatened Fauna Advisor		
<i>Tasniphargus tyleri</i>	Amphipod (Great Lake)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list
<i>Uramphisopus pearsoni</i>	Isopod (Great Lake)	Threatened Fauna Advisor	Forest dwelling species	Add to RFA priority species list

SPECIES NOT LISTED UNDER LEGISLATION FAUNA

<i>Bettongia gaimardi</i>	Tasmanian bettong	Threatened Fauna Advisor
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Species	Common name	Prescription source	Basis for recommendation	Recommendation
<i>Dasyurus viverrinus</i>	Eastern quoll	Threatened Fauna Advisor		
<i>Haliaeetus leucogaster</i>	White bellied sea eagle	Threatened Fauna Advisor		
<i>Anoglypta launcestonensis</i>	Northeast forest snail	Threatened Fauna Advisor	Delisted SAC	Remove from list
Hollow dependant species		Forest Practices Code		
Karst species		Forest Practices Code		

Species FLORA	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Acacia axillaris</i>	Midlands Wattle	Recovery plan/listing statement/Forestry Tas technical Report Phytophthora/Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report/RFA Management Prescription Report		
<i>Acacia mucronata var dependens</i>		Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Acacia pataczekii</i>	Wally's Wattle	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Forest Botany Manual/Recovery Research Report		
<i>Acacia ulicifolia</i>	Juniper Wattle	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Agrostis aemula var aemula</i>	Blown Grass		is a forest dwelling species	Add to RFA priority species list
<i>Agrostis aemula var setifolia</i>	Blown Grass	Forest Botany Manual		
<i>Agrostis aff australiensis</i>	Similar to Australian or Southern Bent		is a forest dwelling species	Add to RFA priority species list
<i>Allocasuarina crassa</i>	Cape Sheoak	Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Allocasuarina duncanii</i>	Duncan's Sheoak	Forest Botany Manual		
<i>Alternanthera denticulata</i>	Lesser Joyweed	Forest Botany Manual	marginal forest species	remove from RFA priority list
<i>Amphibromus macrorhinus</i>	Long-nosed Swamp Wallaby-grass	Forest Botany Manual		
<i>Anogramma leptophylla</i>	Annual Fern	RFA Report Threatened Ferns/Forest Botany Manual		
<i>Aphelia gracilis</i>	Slender Aphelia	Forest Botany Manual		
<i>Aphelia pumilio</i>	Dwarf Aphelia	Forest Botany Manual		
<i>Argentipallium spiceri</i>	Spicer's Everlasting	Forest Botany Manual	rediscovered now listed as endangered State and National	
<i>Aristida benthamii</i>	Three-awned Spear Grass		is a forest dwelling species	Add to RFA priority species list
<i>Arthrochilus huntianus ssp huntianus</i>	Elbow Orchid	Recovery Plan	Was Arthrochilus huntianus now split into two subspecies	Add to RFA priority species list
<i>Arthrochilus huntianus ssp nothofagicola</i>	Elbow Orchid	Recovery Plan	Was Arthrochilus huntianus now split into two subspecies	Add to RFA priority species list
<i>Arthropodium minus</i>	Small Vanilla-lily	Forest Botany Manual		
<i>Asperula minima</i>	Grassy Woodruff		is a forest dwelling species	Add to RFA priority species list
<i>Asperula scoparia var scoparia</i>	Prickly Woodruff	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Asperula subsimplex</i>	Water Woodruff	Forest Botany Manual		
<i>Asplenium hookerianum</i>	Hooker's Spleenwort	RFA Report Threatened Ferns/Recovery Plan/Forest Botany Manual		
<i>Australina pusilla ssp muelleri</i>	Mueller's Small Shade Nettle	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Australopyrum velutinum</i>	Mountain Wheat Grass		is a forest dwelling species	Add to RFA priority species list
<i>Austrodanthonia popinensis</i>	Wallaby-grass	Forest Botany Manual/community Recovery Plan	Was Danthonia popinensis	Change name to accord with 1999 plant census
<i>Austrodanthonia remota</i>	Remote Wallaby-grass		is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Basis for recommendation	Recommendation
<i>Austrostipa bigeniculata</i>	Spear-grass	Forest Botany Manual		
<i>Austrostipa blackii</i>	Crested Spear-grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Austrostipa nodosa</i>	Spear Grass		is a forest dwelling species	Add to RFA priority species list
<i>Austrostipa scabra</i>	Rough Spear-grass	Forest Botany Manual		
<i>Ballantinia antipoda</i>	Southern Ballantine	Forest Botany Manual/community Recovery Plan		
<i>Banksia serrata</i>	Saw Banksia			
<i>Barbarea australis</i>	Native Wintercress	Forest Botany Manual		
<i>Baumea articulata</i>	Jointed Twig-rush		is a forest dwelling species	Add to RFA priority species list
<i>Baumea gunnii</i>	Slender Twig-rush	Forest Botany Manual		
<i>Bedfordia arborescens</i>	Blanket leaf (Mainland)		is a forest dwelling species	Add to RFA priority species list
<i>Bertya rosmarinifolia</i>	Bertya	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Blechnum cartilagineum</i>	Gristle-fern	RFA Report Threatened Ferns/Threatened Flora Manual NE Tas		
<i>Bolboschoenus medianus</i>	Marsh Club-rush, River Bullrush	Forest Botany Manual		
<i>Bossiaea obcordata</i>	Spiny Bossiaea	Forest Botany Manual/Recovery Plan/listing statement/Forestry Tas Technical Report Phytophthora/Recovery Research Report		
<i>Botrychium australe</i>	Austral Moonwort, Parsley- fern		is a forest dwelling species	Add to RFA priority species list
<i>Brachyglottis brunonis</i>	Brown's Tree-daisy			
<i>Brachyloma depressum</i>	Spreading Brachyloma		is a forest dwelling species	Add to RFA priority species list
<i>Brachyscome radicata</i>	Rooted Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Brachyscome rigidula</i>	Hairy Cutleaf Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Brachyscome sieberi var gunnii</i>	Sieber's Daisy	Forest Botany Manual		
<i>Brachyscome tenuiscapa var pubescens</i>	Hairy Mountain Daisy	Forest Botany Manual		
<i>Brunonia australis</i>	Blue Pincushion	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Caesia calliantha</i>	Blue Grass-lily	Forest Botany Manual		
<i>Caladenia anthracina</i>	Black-tipped spider orchid		is a forest dwelling species	Add to RFA priority species list
<i>Caladenia caudata</i>	Tailed Spider Orchid	Forest Botany Manual/Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Caladenia congesta</i>	Black-tongue Caladenia	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Caladenia filamentosa var filamentosa</i>	Daddy Long-legs	Forest Botany Manual		
<i>Caladenia lindleyana</i>	Lindley's Spider Orchid	Forest Botany Manual/Recovery Plan		
<i>Caladenia pallida</i>	Rosy Spider Orchid	Forest Botany Manual/Recovery Plan		
<i>Caladenia saggicola</i>	Sagg spider orchid	Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Caladenia sylvicola</i>	Forest Fingers		is a forest dwelling species	Add to RFA priority species list
<i>Caladenia tonellii</i>	Robust fingers	Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Calandrinia granulifera</i>	Grainy Purslane	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Basis for recommendation	Recommendation
<i>Callitris aff oblonga</i>	South Esk Pine	Forest Botany Manual/Recovery Plan/listing statement/Threatened Flora Manual NE Tas/RFA Management Prescription Report	now <i>Callitris oblonga</i> ssp <i>oblonga</i>	change name to accord with 1999 plant census
<i>Calocephalus citreus</i>	Lemon Beauty-heads	Forest Botany Manual		
<i>Calocephalus lacteus</i>	Milky Beauty-heads	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Calochilus campestris</i>	Copper beard orchid		is a forest dwelling species	Add to RFA priority species list
<i>Carex gunniana</i>	Sedge			
<i>Carex longibrachiata</i>	Bergalia Tussock, Drooping Sedge	Forest Botany Manual		
<i>Centaurium spicatum</i>	Australian Centaury		is a forest dwelling species	Add to RFA priority species list
<i>Centipeda cunninghamii</i>	Common Sneezeweed	Forest Botany Manual		
<i>Chamaesyce drummondii</i>	Caustic Weed	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Cheilanthes distans</i>	Cloak Fern	RFA Report Threatened Ferns/Threatened Flora Manual NE Tas		
<i>Chiloglottis trapeziformis</i>	Broad-lip Bird Orchid	Recovery Plan		
<i>Colobanthus curtisiae</i>	Curtis' Colobanth	Threatened Flora Manual NE Tas/Forest Botany Manual/Community Recovery Plan		
<i>Conospermum hookeri</i>	Variable Smoke-bush	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Cotula vulgaris var australasica</i>	Slender Cotula	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Cryptandra amara</i>	Bitter Cryptandra	Forest Botany Manual		
<i>Cryptostylis leptochila</i>	Small Tongue Orchid		is a forest dwelling species	Add to RFA priority species list
<i>Cyathea X marcescens</i>	Skirted Tree-fern	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Cynoglossum latifolium</i>	Forest Hound's Tongue		is a forest dwelling species	Add to RFA priority species list
<i>Cyphanthera tasmanica</i>	Tasmanian Ray-flower	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Cyrtostylis robusta</i>	Large Gnat Orchid	Forest Botany Manual/Recovery Plan		
<i>Desmodium gunnii</i>	Slender Tick Trefoil	Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report		
<i>Deyeuxia apsleyensis</i>	Apsley Bent Grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia benthamiana</i>	Bent Grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia brachyathera</i>	Bent Grass		is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia decipiens</i>	Trickerey-grass	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Deyeuxia lawrencei</i>	Lawrence's Bent Grass	Forest Botany Manual		
<i>Deyeuxia minor</i>	Bent Grass			
<i>Dianella longifolia var longifolia</i>	Pale or Smooth Flax-lily	Forest Botany Manual		
<i>Dichopogon strictus</i>	Chocolate-lily, Grass-lily - N.S.W.	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Discaria pubescens</i>	Druce Thorn-bush	Forest Botany Manual/Recovery Research Report		
<i>Diuris palustris</i>	Swamp Diuris	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Doodia caudata</i>	Small Rasp-fern	RFA Report Threatened Ferns/Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Dryopoa dives</i>	Giant Mountain Grass	Forest Botany Manual		
<i>Ehrharta juncea</i>	Forest Wire-grass	Forest Botany Manual		

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Elaeocarpus reticulatus</i>	Blueberry Ash		is a forest dwelling species	Add to RFA priority species list
<i>Epacris acuminata</i>	Clasping-leaf Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris apsleyensis</i>	Apsley Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris barbata</i>	Bearded Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris curtisiae</i>	Curtis' Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora		
<i>Epacris exserta</i>	South Esk Heath	Forest Botany Manua/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris glabella</i>	Funnel Heath	Forest Botany Manua/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris grandis</i>	Great Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris limbata</i>	Border Heath	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Plan		
<i>Epacris stuartii</i>	Stuart's Heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora	Not a forest species	Remove from RFA priority List
<i>Epacris virgata</i>	Pretty Heath, Drumstick Heath	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Forest Botany Manual/Recovery Plan		
<i>Epacris virgata sens strict Beaconsfield</i>			listed on TSPA 1995 as E. virgata	
<i>Eryngium ovinum</i>	Blue Devil	Forest Botany Manual		
<i>Eucalyptus barberi</i>	Barbers Gum	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Eucalyptus globulus ssp pseudoglobulus</i>	Gippsland Blue Gum		is a forest dwelling species	Add to RFA priority species list
<i>Eucalyptus morrisbyi</i>	Morrisby's Gum	Forest Botany Manual/wwf report		
<i>Eucalyptus perriniana</i>	Spinning Gum	Forest Botany Manual		
<i>Eucalyptus radiata ssp robertsonii</i>	Narrow-leaf Peppermint	Forest Botany Manual	now ssp radiata will be in next census	
<i>Eucalyptus risdonii</i>	Risdon Peppermint	Forest Botany Manual/wwf report		
<i>Euphrasia collina ssp deflexifolia</i>		Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Euphrasia collina ssp tetragona</i>			is a forest dwelling species	Add to RFA priority species list
<i>Euphrasia fragosa</i>	Shy Eyebright			
<i>Euphrasia scabra</i>	Yellow Eyebright	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Euphrasia semipicta</i>	Peninsula Eyebright	Forest Botany Manual		
<i>Gahnia rodwayi</i>	Rodway's Saw-sedge		is a forest dwelling species	Add to RFA priority species list
<i>Genoplesium nudum</i>	Tiny Midge Orchid	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Glycine latrobeana</i>	Dwarf Clover or Purple Glycine	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/Recovery Research Report/RFA Management Prescription Report		
<i>Glycine microphylla</i>	Small-leaved Glycine	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Gompholobium ecostatum</i>	Dwarf Wedge-Pea		is a forest dwelling species	Add to RFA priority species list
<i>Goodenia amplexans</i>	Clasping Goodenia		is a forest dwelling species	Add to RFA priority species list
<i>Goodenia barbata</i>	Purple Goodenia		is a forest dwelling species	Add to RFA priority species list
<i>Gratiola pubescens</i>	Hairy Brooklime	Forest Botany Manual		
<i>Grevillea australis var linearifolia</i>	Southern Grevillea	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Gynatrix pulchella</i>	Common Hemp Bush	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Gyrostemon thesioides</i>	Didymotheca	Threatened Flora Manual NE Ta/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Hakea ulicina</i>	Furze Hakea	Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Haloragis aspera</i>	Rough Raspwort	Forest Botany Manual		
<i>Haloragis heterophylla</i>	Variable Raspwort	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Hardenbergia violacea</i>	False Sarsparilla	Forest Botany Manual/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Hedycarya angustifolia</i>	Austral Mulberry		is a forest dwelling species	Add to RFA priority species list
<i>Hibbertia calycina</i>	Lesser Guinea-flower	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Hibbertia obtusifolia</i>	Hoary Guinea-flower	Forest Botany Manual		
<i>Hibbertia rufa</i>	Brown Guinea-flower	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Hibbertia virgata</i>	Twiggy Guinea-flower	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Hierochloe rariflora</i>	Cane Holy-grass, Scented Holy-grass		is a forest dwelling species	Add to RFA priority species list
<i>Hovea corrickiae</i>	Corrick's Hovea,	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Hyalosperma demissum</i>	Drooping Hyalosperma	Forest Botany Manual		
<i>Hydrocotyle comocarpa</i>	Mueller's Pennywort		is a forest dwelling species	Add to RFA priority species list
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	Forest Botany Manual		

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Hypolepis distans</i>	Scrambling Ground-fern	RFA Report Threatened Ferns		
<i>Hypolepis muelleri</i>	Harsh Ground-fern	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Hypoxis vaginata</i>	Purple Star	Forest Botany Manual		
<i>Isoetopsis graminifolia</i>	Grass Cushions	Forest Botany Manual		
<i>Isolepis habra</i>	Habra Club-rush	Forest Botany Manual		
<i>Isolepis setacea</i>	Bristly Club-rush	Forest Botany Manual		
<i>Isolepis stellata</i>	Star Club-rush	Forest Botany Manual		
<i>Juncus amabilis</i>	Gentle Juncus	Forest Botany Manual		
<i>Juncus prismatocarpus</i>	Branching Rush			
<i>Juncus vaginatus</i>	Clustered Rush	Forest Botany Manual		
<i>Lasiopetalum micranthum</i>	Tasmanian Velvet Bush	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report		
<i>Lepidium hyssopifolium</i>	Peppercress	Forest Botany Manua/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report		
<i>Lepidium pseudotasmanicum</i>	Peppercress	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Lepidosperma tortuosum</i>	Tortuous or Twisting Rapier-sedge	Forest Botany Manual		
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge		is a forest dwelling species	Add to RFA priority species list
<i>Leptorhynchos elongatus</i>	Lanky Buttons	Forest Botany Manual		
<i>Leucochrysium albicans ssp albicans var tricolor</i>	Grassland Paper Daisy	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Leucopogon lanceolatus</i>	Lance Beard-heath	Forest Botany Manual/Forestry Tas Technical Report Phytophthora		
<i>Leucopogon virgatus var brevifolius</i>			is a forest dwelling species	Add to RFA priority species list
<i>Levenhookia dubia</i>	Hairy Stylewort		is a forest dwelling species	Add to RFA priority species list
<i>Lobelia pratioides</i>	Poison Lobelia	Forest Botany Manual		
<i>Lobelia rhombifolia</i>	Branched Lobelia	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Lomatia tasmanica</i>	King's Lomatia			
<i>Melaleuca pustulata</i>	Cranbrook Paperbark	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Micrantheum serpentinum</i>	Serpentine Micrantheum	Forest Botany Manual		
<i>Millotia muelleri</i>	Common Bow-flower		is a forest dwelling species	Add to RFA priority species list
<i>Millotia tenuifolia</i>	Soft Millotia	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Mirbelia oxylobioides</i>	Mountain Mirbelia		is a forest dwelling species	Add to RFA priority species list
<i>Monotoca submutica var autumnalis</i>	Round-leaf Monotoca	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Odixia achlaena</i>		Forest Botany Manual		

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Olearia hookeri</i>	Hooker's Daisy Bush	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Ozothamnus lycopodioides</i>	Lycopoid Everlasting	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora	is a forest dwelling species	Add to RFA priority species list
<i>Ozothamnus selaginoides</i>	Clubmoss Everlasting		Rediscovered – now listed as Endangered [ident. In doubt]	Add to RFA priority species list
<i>Pandorea pandorana</i>	Wonga Vine		is a forest dwelling species	Add to RFA priority species list
<i>Pellaea calidirupium</i>	Hot-rock Fern	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Pentachondra ericifolia</i>	Matted Pentachondra	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Persicaria decipiens</i>	Slender Knotweed	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Persicaria subsessilis</i>			is a forest dwelling species	Add to RFA priority species list
<i>Persoonia muelleri</i> var <i>angustifolia</i>	Mueller's Geebung			
<i>Phebalium daviesii</i>	Davies' Wax-flower	Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Phyllangium distylis</i>	Tiny Mitrewort		is a forest dwelling species	Add to RFA priority species list
<i>Phyllangium divergens</i>	Wiry Mitrewort			
<i>Pilularia novae-hollandiae</i>	Austral Pilwort		is a forest dwelling species	Add to RFA priority species list
<i>Pimelea axiflora</i> ssp <i>axiflora</i>	Bootlace Bush		is a forest dwelling species	Add to RFA priority species list
<i>Pimelea curviflora</i> var <i>gracilis</i>	Slender Curved Rice-flower	Forest Botany Manual		
<i>Pimelea curviflora</i> var <i>sericea</i>	Curved Rice-flower		is a forest dwelling species	Add to RFA priority species list
<i>Pimelea filiformis</i>	Trailing Rice-flower	Forest Botany Manual		
<i>Pimelea flava</i> ssp <i>flava</i>	Yellow Rice-flower	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pimelea pauciflora</i>	Poison Rice-flower	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Plantago debilis</i>	Shade Plantain	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Plantago gaudichaudii</i>	Gaudichaud's Plantain		is a forest dwelling species	Add to RFA priority species list
<i>Pneumatopteris pennigera</i>	Lime Fern	RFA Report Threatened Ferns/Forest Botany Manual		
<i>Poa mollis</i>	Soft Poa Grass	Forest Botany Manual		
<i>Podotheca angustifolia</i>	Sticky Long-heads	Forest Botany Manual	a recent record near Ulverstone found for this species, Status not yet changed TSPA 1995	
<i>Polyscias aff sambucifolia</i>	Elderberry Panax	Threatened Flora Manual NE Tas		
<i>Pomaderris elachophylla</i>	Small-leaf Pomaderris	Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Reasearch Report		
<i>Pomaderris intermedia</i>	Tree Pomaderris		is a forest dwelling species	Add to RFA priority species list
<i>Pomaderris oraria</i>	Coast Pomaderris	Threatened Flora Manual NE Tas/Forest Botany Manual		
<i>Pomaderris paniculosa</i> ssp <i>paralia</i>	Paralia Dogwood		is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Basis for recommendation	Recommendation
<i>Pomaderris phyllicifolia</i> ssp <i>phyllicifolia</i>	Narrow-leaf Pomaderris	Forest Botany Manual/Threatened Flora Manual NE Tas	listed on RFA priority list as <i>Pomaderris phyllicifolia</i> should be ssp <i>phyllicifolia</i>	Change name to accord with to 1999 plant census
<i>Prasophyllum apoxychilum</i>	Tapered leek orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum correctum</i>	Gaping leek orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum milfordense</i>	Milford leek orchid	Recovery Plan		
<i>Prasophyllum montanum</i>	Mountain Leek Orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum perangustum</i>	Knocklofty leek orchid	Forest Botany Manual/Recovery Plan	is a forest dwelling species	Add to RFA priority species list
<i>Prasophyllum robustum</i>	Robust Leek Orchid	Recovery Plan	Rediscovered – now listed as Endangered	Add to RFA priority species list
<i>Prasophyllum stellatum</i>	Ben Lomond leek orchid	Recovery Plan	Is a forest dwelling species	
<i>Prasophyllum tadgellianum</i>	Tadgell's Leek Orchid		is a forest dwelling species	Add to RFA priority species list
<i>Prostanthera cuneata</i>	Alpine Mint-Bush	Forest Botany Manual		
<i>Prostanthera rotundifolia</i>	Round-leaved Mint Bush	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora		
<i>Pterostylis atriola</i>	Snug greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis commutata</i>	Midland Greenhood	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis cynocephala</i>	Swan Greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis falcata</i>	Sickle Greenhood	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis grandiflora</i>	Cobra or Superb Greenhood	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis sanguinea</i>	Banded Greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis squamata</i>	Ruddy Greenhood		is a forest dwelling species	Add to RFA priority species list
<i>Pterostylis tunstallii</i>			is a forest dwelling species	Add to RFA priority species list
<i>Pultenaea hiebertioides</i>	Guinea-flower Bush-pea	Forestry Tas Technical Report Phytophthora		
<i>Pultenaea humilis</i>	Dwarf Bush-pea			
<i>Pultenaea prostrata</i>	Bush Pea	Forest Botany Manual/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Pultenaea selaginoides</i>	Clubmoss Bush-pea	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/Recovery Research Report/RFA Management Prescription Report		
<i>Ranunculus pumilio</i>	Ferny Buttercup	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Ranunculus sessiliflorus</i>	Small-flowered Australian Buttercup	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Rhodanthe anthemoides</i>	Chamomile Sunray	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Rutidosia multiflora</i>	Small Wrinklewort	Threatened Flora Manual NE Tas		
<i>Rytidosperma procerum</i>	Tall Wallaby-grass		was <i>Danthonia procera</i>	Change name to accord with to 1999 plant census
<i>Scaevola aemula</i>	Fairy Fan-flower	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Schoenoplectus validus</i>	River or Lake Club-rush	Forest Botany Manual		

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Schoenus latelaminatus</i>	Medusa	Forest Botany Manual		
<i>Scleranthus diander</i>	Knawel	Forest Botany Manual		
<i>Scleranthus fasciculatus</i>	Knawel	Forest Botany Manual		
<i>Scutellaria humilis</i>	Dwarf Scullcap	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Senecio macrocarpus</i>	Fluffy Groundsel		is a forest dwelling species	Add to RFA priority species list
<i>Senecio squarrosus</i>	Rigid Grassland Groundsel	Forest Botany Manual		
<i>Senecio velleioides</i>	Forest Groundsel	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Spyridium eriocephalum</i>	Heath Spyridium	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Spyridium lawrencei</i>	Small-leaf Spyridium	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report/Recovery Reasearch Report	was Spyridium microphyllum	Change name to accord with to 1999 plant census
<i>Spyridium obcordatum</i>	Creeping Spyridium	Recovery Plan/Forest Botany Manual/Recovery Reasearch Report		
<i>Spyridium parvifolium</i> var <i>molle</i>	Soft Furneaux Spyridium	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Spyridium parvifolium</i> var <i>parvifolium</i>	Australian Dusty Miller		is a forest dwelling species	Add to RFA priority species list
<i>Spyridium vexilliferum</i>	Winged Spyridium	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Stackhousia gunnii</i>	Gunn's Mignonette	Threatened Flora Manual NE T/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Stackhousia viminea</i>	Slender Stackhousia	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Stellaria multiflora</i>	Rayless Starwort	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Stenanthemum pimeleoides</i>	Spreading Stenanthemum	Forest Botany Manual/Recovery Plan/Threatened Flora Manual NE Tas/RFA Management Prescription Report/Recovery Reasearch Report		
<i>Taraxacum aristum</i>	Austral Dandelion		is a forest dwelling species	Add to RFA priority species list
<i>Tetradlea gunnii</i>	Serpentine Black-eyed Susan	Forestry Tas Technical Report Phytophthora/Forest Botany Manual/RFA Management Prescription Report/Recovery Plan		
<i>Teucrium corymbosum</i>	Forest Germander	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Thelymitra mucida</i>	Plum Orchid	Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Thesium australe</i>	Austral Toadflax	Forest Botany Manual/Recovery Report ,extension Survey	not yet located in Tas.	
<i>Thismia rodwayi</i>	Fairy Lanterns	Forest Botany Manual		
<i>Thryptomene micrantha</i>	Heath Myrtle, Ribbed Thryptomene,	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Tmesipteris parva</i>	Small Fork-fern		is a forest dwelling species	Add to RFA priority species list
<i>Tricoryne elatior</i>	Yellow Rush-lily, Yellow Autumn Lily	Forest Botany Manual		
<i>Triptilodiscus pygmaeus</i>	Common Sunray		is a forest dwelling species	Add to RFA priority species list
<i>Uncinia elegans</i>	Handsome Hook-sedge		is a forest dwelling species	Add to RFA priority species list

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
<i>Velleia paradoxa</i>	Spur Velleia	Forest Botany Manual		
<i>Veronica notabilis</i>	Forest Speedwell	Forest Botany Manual	Now extant Collingwood River status not yet changed TSPA 1995	
<i>Veronica novae-hollandiae</i>	New Holland Veronica		is a forest dwelling species	Add to RFA priority species list
<i>Veronica plebeia</i>	Trailing Speedwell	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Viminaria juncea</i>	Native Broom	Forest Botany Manual/Threatened Flora Manual NE Tas/Recovery Research Report	is a forest dwelling species	Add to RFA priority species list
<i>Viola calejana</i>	Swamp Violet	Threatened Flora Manual NE Tas/Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Viola cunninghamii</i>	Cunningham's Violet	Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Vittadinia cuneata</i>	FuzzyNew Holland Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Vittadinia gracilis</i>	Graceful New Holland Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Vittadinia megacephala</i>	Giant New Holland Daisy		is a forest dwelling species	Add to RFA priority species list
<i>Vittadinia muelleri</i>	Narrow-leaf New Holland Daisy	Forest Botany Manual/Threatened Flora Manual NE Tas		
<i>Westringia angustifolia</i>		Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Westringia brevifolia</i> var <i>raleighii</i>		Forest Botany Manual	is a forest dwelling species	Add to RFA priority species list
<i>Wurmbea latifolia</i>	Early Nancy, Harbinger-of-spring			
<i>Xanthorrhoea bracteata</i>	Grass-tree, Black-boy	Recovery Plan/Threatened Flora Manual NE Tas/Forestry Tas Technical Report Phytophthora/RFA Management Prescription Report		
<i>Zieria cytisoides</i>	Downy or Dwarf Zieria	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list
<i>Zieria veronicea</i>	Pink Zieria	Forest Botany Manual/Threatened Flora Manual NE Tas	is a forest dwelling species	Add to RFA priority species list

SPECIES NOT LISTED UNDER LEGISLATION

FLORA

<i>Arthrochilus huntianus</i>	elbow orchid		Been split into two subspecies	remove from RFA priority list
<i>Arthropodium minus</i>	Small Vanilla-lily	Forest Botany Manual		
<i>Asplenium trichomanes</i> ssp <i>trichomanes</i>	Maidenhair Spleenwort	RFA Report Threatened Ferns		
<i>Austrofestuca hookeriana</i>		Forest Botany Manual	delisted	remove from RFA priority list

Species	Common name	Prescription source	Basis fo recommendation	Recommendation
Boronia rhomboidea				
Carex bichenoviana	Sedge	Forest Botany Manual		
Carex tasmanica	Curly Sedge	Forest Botany Manual	Listed On EPBCA 1999 considered forest dependant	List on RFA priority list
Cyathea cunninghamii	Slender Tree-fern	RFA Report Threatened Ferns/Forest Botany Manual	Forest Botany Manual	
Epacris aff exerta Union Bridge			Listed on TSPA 1995 as E. exerta	
Epacris graniticola			listed on TSPA 1995 as Epacris virgata	
Epacris marginata	Stiffly Erect Heath	Forest Botany Manual		
Epacris virgata Kettering		Recovery Plan	listed on TSPA 1995 as E. virgata	
Epacris virgata sens strict Beaconsfield		Recovery Plan	listed on TSPA 1995 as E. virgata	
Eucalyptus archeri	Alpine Cider Gum	Forest Botany Manual		
Eucalyptus cordata	Silver Gum	Forest Botany Manual/wwf report		
Festuca plebeia		Forest Botany Manual		
Gahnia sieberiana	red fruit saw sedge	Forest Botany Manual	delisted	remove from RFA priority list
Grevillea australis var tenuifolia	Southern Grevillea			
Rytidosperma nitens		Forest Botany Manual		

APPENDIX 6.2A

Table 6.2a Reservation status of high quality wilderness

High Quality Wilderness Area	Status in 1996				Status in 2001				Change in wilderness reservation since 1996 (%)
	Formal reserves (ha)	Informal & private reserves (ha)	Total wilderness area (ha)	Proportion reserved (%)	Formal reserves (ha)	Informal & private reserves (ha)	Total wilderness area (ha)	Proportion reserved (%)	
Ben Lomond	9 800	0	10 300	95%	9 800	0	10 300	95%	0%
Cradle - Central Plateau	311 200	27 700	376 100	90%	370 500	1 500	376 200	99%	+9%
Donaldson	0	5 100	53 200	10%	25 400	1 700	53 200	51%	+41%
Douglas Apsley	10 000	0	10 100	99%	10 000	0	10 100	99%	0%
Freycinet	8 500	0	8 500	100%	8 500	0	8 500	100%	0%
Henty	300	1 500	24,000	8%	23 600	0	24 000	99%	+91%
Little Henty	300	400	9 100	8%	300	400	9 100	8%	0%
Maria	8 500	0	8 500	100%	8 500	0	8 500	100%	0%
Meredith Range	700	14 500	63 400	24%	59 000	400	63 400	94%	+70%
Mt Field	11 200	2400	15 400	88%	11 200	2 400	15 400	88%	0%
Mt Heemskirk	0	0	10 900	0%	9 900	0	10 900	91%	+91%
Mt William	7 200	0	7 700	93%	7 200	0	7 700	93%	0%
Norfolk Range	1 100	79 300	92 300	87%	89 800	200	92 300	98%	+10%
Savage	0	32 200	51 600	62%	32 800	2 200	51 600	68%	+5%
South West	964 600	152 500	1 182 300	94%	1 139 400	10 600	1 182 900	97%	+3%
Sumac	9 200	1 600	14, 000	77%	10 800	200	14 100	78%	+2%
Total HQ Wilderness	1 342 500	317 100	1 937 900	86%	1 816 700	19 600	1 937 900	95%	+9%

Notes:

1. The extent of some wilderness areas published in the 1996 CRA and 1997 RFA included areas of sea, (eg Bathurst Harbour); these are excluded in the above table.
2. Areas are rounded to the nearest 100ha to reflect the spatial resolution of the wilderness mapping, which was based on 1km x 1km units.

APPENDIX 7.4.a

Table 7.4.a Availability of data

Indicator	Availability & Extent	Issues/Comment
1.1.a	Forest-type data are current and available for the whole region.	1. Update of 1996 forest type data is not comprehensive, especially on private property. 2. RFA forest type data, (as used for the 1996 CRA and 2001 RFA Review), proposed for replacement by TASVEG data for the next five-year period subject to availability of statewide coverage and agreed procedures.
	Tenure data are current and available for the whole region.	
1.1.b	Forest-type and tenure data are current and available for the whole region.	As per 1.1.a
	Growth-stage data are current and available for the whole region, although there are some problems that limit its applicability (see issues).	Growth-stage data is based on photo-interpreted structural forest classification; this cannot readily discriminate growth-stage in non-eucalypt communities, and defines forest differently to floristic forest-type classification.
1.1.c	Forest-type data are current and available for the whole region.	As per 1.1.a
	Reserved land classification data are current and available for the whole region.	
1.1.d	Forest-type data are current and available for the whole region.	As per 1.1.a
	Reserved land classification data are current and available for the whole region.	
	Old growth data are current and available for the whole region.	Old growth typing is as per 1996 CRA mapping, as adjusted for recent records of logging and clearing.

1.2.a	Indicator data on vertebrate species and higher plants are currently available and will be regularly updated	There is a lack of information on invertebrates and lower plants, which makes their inclusion as indicators impractical.
1.2.b	Data for the list of RFA Priority Species that are used as the basis for this indicator are currently available and will be regularly updated.	
1.2.c	Data and/or expert knowledge on the status of the listed representative species are currently available.	Representative indicator species and updating indicator data may vary from time to time, according to recovery plan and monitoring priorities.
2.1.a	Data are available for the net area of State forest available for timber production but the net area is not available for private land.	
2.1.c	Plantation areas, species, age-classes and yield estimates are current and available for the whole region.	
2.1.d	Sustainable sawlog yield estimates for public native forests are current and available for the whole region.	<ol style="list-style-type: none"> 1. Sustainable yields are not calculated for pulpwood and other products from public native forests because these are byproducts of sawlog production. 2. Sustainable yields are not calculated for private native forests. 3. Sustainable yields are not calculated for public or private plantation forests.
	Annual wood product removal statistics are current and available for the whole region.	
2.1.e	Data on seed production and game harvest are adequate.	
	There has been no reliable data on treefern removal up to 2001.	With purchased tagging of treeferns a legal requirement from January 2002 data will be available for the next five-year review.
	Data for licenced apiary sites are available but the actual number of hives used was not recorded for Crown land prior to 2000/01	
2.1.f	No quantitative data available for State or private land. Data for all tenures will be available from certificates of	

	compliance lodged as from the 2001/2002 reporting year.	
2.1.g	Data available for State forest for current areas. No data for current areas on private land. Data for all tenures will be available from certificates of compliance lodged as from the 2001/2002 reporting year.	
3.1.a	Wildfire severity data are current and available for the whole region.	
	Forest health survey data are current and available for plantations on public land for the whole region.	Forest health data are not available for native forests or for most plantations on private land.
4.1.a	Quantitative data are available for State forest and private land from the Forest Practices Board database on Forest Practices Plans and results of audit. Quantitative data are not likely to be collected for formal reserves or other areas.	
5.1.a	<p>Forest type data are available for the whole region through the National Vegetation Information System (NVIS)</p> <p>Information on “forest disturbance” is not available to discount the assumed mature/undisturbed condition of forests.</p> <p>Models and site estimates are available to estimate site productivity and aboveground and total biomass</p>	<p>There is currently no update program for NVIS mapping. Remote sensed monitoring of land clearing and afforestation will be available in the next year. Models are being developed to reflect the impact of disturbance detected by remote sensing.</p>
6.1.a	<p>Current ABS log volume data are up to date. Due to recent changes in ownership of the hardwood woodchip sector, ABS will no longer publish data on pulpwood production.</p> <p>ABS data on value added through downstream processing is adequate to track trends.</p>	
6.1.b	Data on non-wood production and value are very limited. The only data collected by ABS are for honey production. Discussions with representatives of the Tasmanian honey industry give little confidence that the reported data are reliable.	The existing data on honey production appears to have little relevance to sustainability of forest management. There appears to be few opportunities to achieve improved data for this indicator at a State level. Most non-wood production data (for example tourism, honey, water, minerals) does not distinguish

		between forest and non-forest sources. Continuation of reporting of this indicator needs to be reviewed.
6.1.d	Acceptable data on wood production value for the sawmilling and paper product sectors are available from ABS. No data are available on the non-wood production value.	

6.2.a	Precise data are not available on restricted areas within conservation reserves; 'restricted area' does not mean total exclusion of visitors	
6.2.b	Although data exists, no common definitions of facilities or activities exist across agencies	There would be benefit in standardising definitions of facilities (assets) and activities across agencies.
6.2.c	Data on the number of visitors is collected in most national parks, though some figures are only estimates. On State forest accurate numbers are available for Tahune and estimates for other areas.	DPIWE is about to implement a new monitoring system that will bring all national park visitor counts up to global best practice. This will be implemented for all national parks over the next four years.
6.4.(a)i	Data for areas formally managed to protect these values are currently available and are updated as new management decisions are made.	
6.4.(a)ii	Data for areas formally managed to protect these values are currently available and are updated as new management decisions are made.	
6.5.a	Forest industry employment data collected and reported by ABS is not comprehensive. Important employment sectors such as forest management, harvesting and transport are not reported. No reliable data is available on non-wood forestry employment.	Without comprehensive employment data the importance of the sector in the Tasmanian economy is undervalued. Continuation and expansion of the AFFA pilot survey provides an option for improvements in the accuracy of this important indicator.
6.5.b	The data available on forest industry wages and salaries do not adequately address the criterion. Wage rates per employee are not available so trends over time can not be presented. Reasonable comparative data on injury rates in the industry is available.	Available wage data has some inexplicable variations, casting doubt on their accuracy. Until meaningful wage rate data is available for this indicator it should not be reported on.

APPENDIX 1

RPDC Terms of Reference



Appendix 1: RPDC Terms of Reference

Pursuant to Section 14 of the *Public Land (Administration and Forests) Act 1991*, a reference is hereby issued to the Resource Planning and Development Commission. The Commission is to conduct an inquiry and report on the progress with implementation of the Tasmanian Regional Forest Agreement (1997).

1. Description of Land

Those lands identified by the Commonwealth and Tasmanian Governments as areas on public land and private land subject to the Regional Forest Agreement.

2. The Scope of the Inquiry

Acting pursuant to the Scoping Agreement for the Five Year Review of Progress with Implementation of the RFA (2001) as jointly agreed by the Commonwealth and Tasmanian Governments, the Tasmanian Regional Forest Agreement (1997) and using information as identified, the inquiry is to review the performance of the RFA (1997) to assess progress against the agreed milestones and specified commitments in accordance with the provisions of clauses 45, 46, 47 of the RFA (1997).

3. Matters to be taken into account

In arriving at its recommendations the Commission is to take into account the following:

- The Report on Implementation of the Tasmanian Regional Forest Agreement – 1997/2002; and
- The Sustainability Indicators for Tasmanian Forests – 1997/2001.

4. Date for submission of Final Recommendations

The Commission is to provide its Final Recommendations to the Minister by Friday, 11 October 2002.

APPENDIX 2

Scoping Agreement

Tasmanian Regional Forest Agreement

**Five Year Review
of
Progress with Implementation of the RFA**

Scoping Agreement

**between
The Commonwealth of Australia
&
The State of Tasmania**

July 2001

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1. Preamble

The purpose of this Scoping Agreement is to confirm the arrangements agreed by the Commonwealth and Tasmanian Governments to undertake the first five yearly review of performance against the specified milestones and commitments of the Tasmanian Regional Forest Agreement (RFA) in accordance with the provisions of Clauses 45, 46 and 47 of the RFA.

The provisions of this Agreement are not intended to give rise to legally enforceable rights or obligations between the Commonwealth and Tasmania.

The Commonwealth and Tasmania agree that this Scoping Agreement will be consistent, (including with respect to the definition of terms) with the RFA, the National Forest Policy Statement (NFPS), and other relevant agreements and policies including the National Strategy for Ecologically Sustainable Development (NSED) and the Intergovernmental Agreement on the Environment (IGAE). The Commonwealth and Tasmania recognise that this Agreement cannot impose on a party any obligation that is inconsistent with a law of the Commonwealth or of Tasmania where that law is binding on that party.

2. Background

The State of Tasmania and the Commonwealth of Australia entered into the Tasmanian Regional Forest Agreement (RFA) on 8 November 1997. The RFA provided for the maintenance and development of a vibrant and sustainable forest industry in Tasmania. The duration of the RFA is twenty years.

The RFA is consistent with the National Forest Policy Statement, which establishes the national goals and objectives for management of Australia's forests and forest industries.

The RFA provides for a suite of measures to provide certainty for conservation of the environmental and heritage values of the forest estate. These include the establishment of a Comprehensive, Adequate and Representative (CAR) Reserve System, management systems to ensure sustainable management of the forest industry and a reporting framework to ensure their effective implementation.

The RFA also provides a suite of measures to ensure the efficient and effective development of the forestry and forest based industries to provide for better social and, in particular, employment outcomes in regional Tasmania. It also provides specific measures to ensure security for the mining and tourism industries. It provides for a substantial increase in the net benefit of the forest industry to the Tasmanian economy.

The Commonwealth Government provided significant resources to assist in attaining the conservation outcomes and to assist in achieving the

technological change and industry restructuring required to maximise the benefits of the industry.

An important element of the RFA is the requirement for reporting. The Commonwealth and the State report annually, during the first five years, on a series of milestones identified in the RFA. In addition Clause 45 of the RFA specifically provides for five yearly reviews of performance against the specified milestones and commitments.

3. Australian RFAs under Review

The Tasmanian RFA was the second of a series of Regional Forest Agreements between the Commonwealth Government and the Governments of Victoria, New South Wales, Western Australia and Tasmania. Whilst all the RFAs have their own unique elements they have all been drawn up under the aegis of the National Forest Policy Statement and all have a requirement for five yearly reviews.

There is a need to strike a balance between a consistent approach to five yearly reporting across all the RFAs, the particular provisions contained in each RFA and the particular circumstances pertaining in each of the States.

4. The RFA Requirement for a Performance Review

Clause 45 of the RFA requires inter alia that:

- A review of the performance of the RFA will be undertaken in the fifth year of each five year period to assess progress against the specified milestones and commitments,
- The parties (the Commonwealth and Tasmanian Governments) will appoint a person or body to conduct the review,
- The parties are to agree on the priorities, procedures and funding arrangements for the review no later than six months before the end of each five year period. This Scoping Agreement represents that agreement, and
- the review:
 - will invite and take account of public comments,
 - will use and take account of the sustainability indicators.
The Sustainability Indicators for the First Review in 2002 have been developed as required by clause 91 and are available on the internet at <http://www.dpac.tas.gov.au/divisions/policy/rfa/>.
 - would be sufficient to satisfy the requirements for the *State of the Forests Report*,
 - should be completed within three months of its commencement,
 - will develop a report detailing the review process and its findings.

The “milestones” referred to in the first dot point above are detailed in Attachment 3 of the RFA (Appendix 2). The “commitments” are outlined in Appendix 3.

5. Principles for Conduct of the Review

The RFA is a twenty year agreement. It explicitly provides for reporting annually for the first five years and thereafter every 5 years. The purpose of this Review is to assess and report on progress achieved during the first five years with implementation of the milestones and commitments specified in the RFA. It is not an opportunity to re-negotiate the RFA.

The Commonwealth and Tasmanian Governments recognise the Tasmanian Government's constitutional responsibility for land and forest management in Tasmania.

In undertaking the Review the parties agree that they are jointly responsible for the Review and undertake to take such measures as are necessary to ensure effective coordination within and between the governments.

The Governments also recognise their responsibility for the efficient management of taxpayers' money. To help the Governments meet this responsibility, the review process will be designed to avoid duplication of process and waste of effort. Therefore, the Review will be consistent with, will draw on and will contribute to other State and national forest reporting processes and requirements.

The Governments recognise their responsibility to the community for accounting for the management of Tasmania's forests under the RFA. Therefore the conduct of the review of progress with implementation of the RFA is to be undertaken in a manner that:

- is open, transparent and equitable;
- provides appropriate opportunities for communication with and input from the community;
- is consistent with other forest reporting requirements; and
- is scientifically based and reliant on agreed data as required by the RFA.

6. Linkages to other Processes

There are a number of processes requiring essentially similar information aimed at reporting on sustainable management of forest ecosystems. These include the Tasmanian and Australian State of the Environment reporting, Tasmanian and Australian State of the Forests reporting and reporting against Montreal criteria and indicators.

The Tasmanian *State Policies and Projects Act 1993* requires that the Resource Planning and Development Commission produce a *State of the Environment Report* every 5 years. The next report is due in December 2002.

The *Forest Practices Act 1985* requires that the Forest Practices Board produce a report on the state of Tasmania's public and private forests by no later than 30 November 2002 and every five years thereafter.

The information from the above Tasmanian reports feeds into the *National State of Environment Report* and *State of the Forests Report*.

In addition, because Australia is a signatory to the Montreal protocol, the Tasmanian and Commonwealth Governments have obligations to report under the Montreal Protocol by December 2002.

7. Timeframe for conducting the Review

The following timeframe for the Review has been agreed

Phase 1 - Preparation

By February 2002:

- A draft *Report on the Sustainability Indicators* prepared; and
- A draft *Report on Progress with Implementation of the RFA* against the milestones (Appendix 2) and the other commitments (Appendix 3) prepared.

Phase 2 - Public Comment

March/April 2002

- Public comment invited on the draft *Report on the Sustainability Indicators* and the draft *Report on Progress with Implementation of the RFA*.

Phase 3 – Review

May/June/July 2002

- The draft *Report on Sustainability Indicators* and the draft *Report on Progress with Implementation of RFA* and the public comment on those *Reports* reviewed;
- A draft report prepared by the Review team; and
- The *State of the Forests Report* prepared by the Forest Practices Board.

By August 2002

- Final *Report on the Review of Progress with Implementation of RFA* presented to Governments.

Phase 4 – Public Reporting and Government Response

By 30th November 2002

- Government response to the Review findings prepared;
- *State of the Forests Report* tabled in the Tasmanian Parliament; and
- *State of the Forests Report* and *Report on the Review of Progress with Implementation of RFA* published.

8. Arrangements for conduct of the Review

Terms of Reference for the Review Team are in Appendix 1. These may be amended by agreement between the responsible Ministers.

The Parties have agreed to jointly appoint a Review Team to undertake Phase Three, comprising an independent chair supported by two senior representatives from each of the Commonwealth and Tasmanian Governments with expertise and knowledge of the RFA and sustainable natural resource management.

The responsible Ministers identified in section 11 of the Scoping Agreement will approve the appointment of the Review Team by 28 February 2002. Notwithstanding, it is intended to nominate the Review Team as soon as possible. The target date is 30 August 2001.

9. Public Consultation

Public consultation has been integral to the development and implementation of the Regional Forest Agreement. The process and outcomes of this public consultation is detailed in the reports of the Public Land Use Commission and its successor the Resource Planning and Development Commission (<http://www.rpdc.tas.gov.au/>).

The public have also been consulted in the preparation of the *Tasmanian Regional Forest Agreement – Sustainability Indicators for the First Review in 2002* (<http://www.dpac.tas.gov.au/divisions/policy/rfa/>). A draft was prepared and released for a two month public comment period.

There is a three month limit on the Review as prescribed in the RFA (Clause 45 (iii) and (vi)). The public will be invited to comment on the documentation on progress with implementation of the RFA to be considered by the Review Team. The Review Team will then have opportunity to consider the public comment as part of the review process. It is expected that the Review Team may address queries to government agencies, to people or to organisations that have provided comment on the draft report to clarify issues raised.

10. Communication Strategy

A communication strategy will be agreed by the parties. The communication strategy will guide the parties in informing the public on the process for the conduct of the Review and their opportunity to comment.

The communication strategy will be completed by 30 June 2001.

11. Governance Issues

The Steering Committee will have responsibility for:

- Day to day implementation of this Scoping Agreement;

- Arrange preparation of the draft *Report on Sustainability Indicators* and the draft *Report on Progress with Implementation of RFA* to be the subject of the Review;
- Inviting public comment on the draft *Reports*;
- Approval and implementation of the communication strategy;
- Oversight of the Review Team; and
- Allocation of resources to assist the Review Team.

The Steering Committee will be chaired by Tasmania.

Ministerial

The parties to the Agreement are represented by:

Tasmania

The Hon Jim Bacon MHA

Premier and Minister for State Development

Commonwealth

The Hon Wilson Tuckey MP

Minister for Forestry and Conservation

The Ministers shall jointly appoint the Review Team.

The Ministers will receive the *Report of Progress with Implementation of RFA* and prior on its publication.

12 Financial Issues

The State and the Commonwealth are to be responsible for all their own internal costs associated with the implementation of this Agreement. The parties will share evenly the agreed additional costs of the Review, including costs of the Review Team preparation and publishing of reports, implementing the communication strategy and any necessary additional data collection required for the Review as agreed by the Steering Committee.

13 Reporting protocols

The Steering Committee shall report to:

- responsible Ministers by 30 July 2001 on progress toward meeting the Phase 1 milestone and on the Communication Strategy;
- responsible Ministers on the recommendations for the persons to undertake Phase Three; and
- responsible Ministers on the Review Team's compliance with the Terms of Reference.

The responsible Ministers shall consider the report of the Review Team and a formal response from the parties with a view to publication of the Review by 30 November 2002.

Appendix 1

Terms of Reference for the Review of Progress with Implementation of the RFA for the Review Team

The Review Team is required to undertake a review of the progress with implementation of the RFA to assess performance and progress against its specified milestones and commitments as required in Clauses 45, 46 and 47 of the Tasmanian Regional Forest Agreement 1997. The “commitments” and “milestones” are detailed in the Scoping Agreement (Tasmanian Regional Forest Agreement Five Year Review of Progress with Implementation of the RFA, June 2001).

The parties have invited public comment on the draft *Report on the Sustainability Indicator* and the draft *Report on the Review of Progress with Implementation of the RFA*.

Inter alia the Review Team is required to:

- adhere to the Principles that are detailed in the Scoping Agreement;
- review the draft *Report on the Sustainability Indicators*, the draft *Report on the Review of Progress with Implementation of the RFA*;
- consider and take account of the public comment on those draft *Reports*;
- if necessary, address queries to government agencies, to people or to organisations who have provided comment on the draft *Reports* to clarify outstanding issues;
- provide a Report to the parties detailing the Review process and its findings –including an assessment of the performance and progress of the RFA in terms of sustainability indicators (and trends), milestones and commitments; and
- complete and provide copies of this Report to the parties no later than three months from commencement of the Review.

Administrative Arrangements

- The Commonwealth and Tasmanian governments have established a Steering Committee to oversight the Review.
- The Steering Committee shall provide administrative and technical support to the Review Team in undertaking its task.

Appendix 2

RFA Attachment 3 Agreed Milestones

Clause	Milestone / Action	Timeline
#8	The State and the Commonwealth to jointly determine the process for extending the RFA.	as part of the third 5 yearly review of the RFA (2012)
#23(a)	The Commonwealth to prepare a policy outline for RFA legislation, which will include provisions as specified in clause 22.	by 31 December 1997
#23(c)	The Commonwealth to introduce legislation to provide certainty to the provisions specified in clause 22.	by 30 June 1998
#24(b)	The State to proclaim such new reserves having categories provided by existing legislation	by 31 December 1998
#24(c)	The State to introduce legislation to establish required new categories of the revised public land classification system.	by 31 December 1998
#39	The State and the Commonwealth to jointly participate in further World heritage assessment of the relevant themes	commencing by 30 June 1998
#44	The parties to provide each other with written reports detailing the achievements of Milestones	annually for the first 5 years; then 5 yearly
#45	The State and the Commonwealth to review the performance of the RFA.	5 yearly (during the last year) (2002, 2007, 2012)
#55	The State to review and publish a report on its resource estimates for deep red myrtle available supply	during first 4 years of the RFA (2001)
#87	The State to review legislation relevant to the allocation and pricing of hardwood logs from State forests as part of the Competition Principles Agreement	before 31 December 1999
#91	The State and the Commonwealth to develop a set of appropriate, practical, and cost effective sustainability indicators.	by first December 1999
#93	The State to further develop its Forest Management Systems and processes	within 5 years of the RFA date
#94	The State to publish and make publicly available compliance audits of the Forest Practice Act and Code and the code of reserve management. See also #Att 11,3	annually: (1998-2017)
#94	The State to publish and make publicly available independent expert reviews of the operation of its Forest Practices Code and its code of practice for reserve management	5 yearly (2002, 2007, 2012)
#97	The State to maintain and update the Management Prescription database and the Response to Disturbance database	as necessary
#98	The State to review sustainable high quality sawlog supply levels to reflect the changes in the forest inventory and new intensive management forest management initiatives concluded in the RFA.	during first year of the RFA; thereafter at the 5 yearly review (1998, 2002, 2007, 2012)

Clause	Milestone / Action	Timeline
#99	The State to undertake a review—including reporting to Governments—on pricing and allocation policies for commercial government owned forestry operations.	30 April 1998
#Att 1, 6.	The State and the Commonwealth to jointly fund and accredit digital maps at 1:100 000 scale of all lands in Tasmania listed on the Register of the National Estate	by 31 December 1998.
#Att 6, 5.	The State to finalise boundaries (of CAR reserves) on 1:25 000 maps to enable gazettal.	by 30 June 1999
#Att 6, 17.	Forestry Tasmania to include Informal Reserves in new and revised Forest Management Plans	by the year 2000
#Att 8, 2.	The strategic plan for implementing the CAR Reserve System program on Private Lands is to be developed.	no later than 3 months from commencement of the RFA (31 March 1998)
#Att 9, 5.	The State to conduct a formal review of the area of Forest Communities within each IBRA region as part of the 5 yearly review of the RFA	5 yearly (2002, 2007, 2012)
#Att 9, 8.	The State to introduce, in respect of Private Land, mechanisms to encourage native vegetation retention and management.	by the year 1999
#Att 9, 11.	The State to review the policy for maintaining a permanent Forest Estate as part of the ongoing review of the Forest Practices Code	during reviews of the Forest Practices Code
#Att 10, 3.	The State to develop and implement a Threatened Species Protection Strategy	by 31 December 1998
#Att 10, 3.	The State to develop and implement a Tasmanian Biodiversity Strategy	by 31 December 1999
#Att 10, 5.	The State to develop new legislation in relation to Aboriginal cultural heritage to replace the Aboriginal Relics Act 1975	no milestone date
#Att 10, 7.	The State to develop and implement statewide policies across all tenure on fire management, nature based tourism and recreation management, cultural heritage management in Forest, and Forest pest and disease management.	within first 5 years of the RFA
#Att 10, 8.	The State to ensure that management plans are implemented: - for all State Forest and National Parks; and - for all other Formal Reserves	- by year 2000; - by year 2003 or as soon as practicable thereafter
#Att 10, 11.	The State to develop and implement a code of practice for reserve management	by year 2000
#Att 11, 1.	The State to complete and publish silvicultural guidelines for the management of commercial Forest types	by 31 December 1998
#Att 11, 2.	The State to publish a description of the methods of calculating sustainable yield on Public Land, including for special species timber sawlogs	by 31 October 1998
#Att 11, 3.	Relevant State agencies to include in their annual reports a report on outcomes of the compliance audits for codes of practice, and the monitoring of Forest regeneration success and trends. See also #41.	annually by financial year: (1997/98-2016/7)
#Att 11, 4.	The State to release a document describing the Management Decision Classification System	by 30 April 1998

Clause	Milestone / Action	Timeline
#Att 11, 5.	The State to prepare and release a revised manual for the Management Decision Classification System, including prescription guidelines for special management zones.	by 31 March 1999
#Att 14, 2.5	Latest versions of all jointly owned data—listed in Schedule 1 of Attachment #14—to be exchanged.	within 3 months of commencement of RFA (March 1998)
#Att 14, 3.	The State and the Commonwealth to delete all copies of Data which they do not own but were provided for of the RFA Purposes, unless otherwise agreed to in writing by the respective Data owners	not later than one month after RFA is signed (December 1997)
#Att 14, 4.1.	The State and the Commonwealth to list and archive Data used for RFA Purposes.	within three months of commencement of the RFA (March 1998)

Appendix 3

Other RFA Commitments

RFA Clause	Commitment
22(a) (b)	Commonwealth to seek passage of legislation that includes the provision of an RFA
24(a) & 51	<p>The State undertakes to manage areas in the CAR Reserve System identified in Attachment 6, with the exception of Commonwealth owned or leased land, on the basis outlined in that Attachment and in accordance with the relevant objectives set out in Attachment 7.</p> <p>The Parties will take action to establish the CAR reserve system and to manage the CAR values in a regional context consistent with the management objectives specified in Attachment 7</p>
24(d)	Where any new reserves are to be included in a category specified in Attachment 7, which is not already provided for by existing legislation, Tasmania undertakes to proclaim such new reserves.
26	The parties agree to the management of National Estate values as set out in Attachment 1
32	Any new or revised Recovery Plans will be jointly prepared and funded and implemented cooperatively.
33	Multiple species Recovery Plans will be developed where appropriate
34	The Commonwealth will continue to consult with the State on the preparation of Threat Abatement Plans for key threatening processes
35	Commonwealth to adopt a State Recovery Plan where they meet requirements of Commonwealth legislation.
36	National Recovery Plans and Threat Abatement Plans will be prepared jointly with other governments where possible
37	The Parties will consult on the priorities for listing threatening species, Forest Communities and threatening processes and in the preparation of all Recovery Plans and Threat Abatement Plans
40	The Commonwealth agrees that it will give full consideration to potential social and economic consequences of any World Heritage Nomination of places in Tasmania and that any such nomination will only occur after the fullest consultation and agreement with the State.
41	World Heritage Nomination to be drawn from Dedicated Reserve System.
42	<p>The Parties agree:</p> <ul style="list-style-type: none"> that before any World Heritage Nomination of any part of the Forest Estate is made all necessary management arrangements, including joint policy coordination arrangements and a statutory management plan under the relevant Tasmanian legislation will be in place; and that prior to any World Heritage Nomination all related funding issues will be resolved to the satisfaction of both Parties.
48	CAR Reserve System is to established for the purpose of ensuring long term conservation and protection as per Attachment 6 and Attachment 8.

RFA Clause	Commitment
52	The State will consult with the Commonwealth prior to rejecting any recommendations of the Resource Planning and Development Commission in regard to tenure to be applied to those reserves listed in Attachment 6 sections 1.7 and 1.8.
53	All Deferred Forest Lands not included in the CAR reserve system other than those specified in Attachment 6 will be removed from the Register of Deferred Forest Land and added to the Register of Multiple Use Forest Land.
54	The Commonwealth has requested and the State has agreed to postpone any harvesting in the Savage River pipeline corridor. Accordingly the parties agree: to postpone any harvesting and associated forest roading in the area as shown in map 1, and that this area will continue to be included in the calculation of sustainable yield of special species timber; and that uses other than timber production will continue to be managed in accordance with clause 78 of the agreement
56	The Commonwealth agrees that those areas of the Buckland Military Training Area leased by the Commonwealth from the State and not required for the CAR Reserve System will remain available to the State for timber production purposes, including plantation development.
57	The Parties agree that any changes to those elements of the CAR reserve system in informal reserves: will only occur in accordance with this agreement; will maintain the level of protection of identified values at the regional scale; that information on all such changes will be publicly available and provided to the person or body conducting the 5 yearly review described in clause 45 for incorporation into the review process.
58	The State will continue, with respect to Private Land, to <ul style="list-style-type: none"> (a) ensure that private forest owners comply with the Forest Practices Code for harvesting and regeneration operations (b) develop adequate mechanisms to protect nature conservation and catchment values (c) undertake the initiatives specified in Attachments 9,10 and 11
59	The State agrees to implement a process to facilitate the voluntary participation by private landowners to protect CAR values on private land
60	The State agrees to adopt the Permanent Native Forest Estate policy framework in Attachment 9
64	The State agrees to amend its forest management systems to reflect the undertakings in this Agreement, particularly those in Attachment 10 (taking account of Clause 63)
68	The State agrees to protect the Priority Species listed in Attachment 2 (Part A) through reservation or applying relevant management prescriptions
69	Prior to the first 5 year review, the State will, where practical, assess the species listed in Attachment 2 (Part B) and determine management requirements in accordance with clause 96
70	Management prescriptions or actions in agreed Recovery Plans or Threat Abatement Plans will be implemented as a priority
71	Any changes to the Priority Species in Attachment 2 or altered management prescriptions for Priority Species will be in accordance with processes in clause 96
72	Public reporting and consultation opportunities provided through the processes outlined in Attachment 11 will continue
73	The State will implement the range of reporting and consultative mechanisms in Attachment 11

RFA Clause	Commitment
74	The Parties agree to cooperate in implementing the specified actions in the Employment and Industries Development Strategy (Attachment 12)
77	See Clause 98
79	The Parties recognise that subject to clauses 80, 81 and 82 that mineral exploration and mining can occur in those specified parts of the CAR reserve system which are identified in Attachment 6 .
80	Mineral exploration proposals in CAR reserves to be referred to the Mineral Exploration Working Group
81	All mining activities in CAR reserves will be subject to environmental impact assessment and environmental management conditions
82	In parts of the CAR reserve system with high quality wilderness value measures will be taken to minimise the effects of mining exploration and mining activities on wilderness values. Any rehabilitation will aim to restore the site to wilderness condition.
83	Tasmania will introduce legislation to replace the <i>Aboriginal Relics Act</i> following consultation with the Tasmanian Aboriginal Community
89	Relevant research reports will be made publicly available wherever practical
90	Commonwealth and Tasmania to provide each other with access to data as per Attachment 14.
96	The State agrees that any changes to Priority Species including new or altered management prescriptions will be endorsed by the Threatened Species Scientific Advisory Committee and take note of public comment
100	The Commonwealth will provide \$20 million for the Private CAR Reserve system.
101 (i)	Commonwealth to provide \$57 million for intensive forest management initiatives
101 (ii)	Commonwealth to provide \$13 million for employment and industry development initiatives, as per Att 12
101 (iii)	Commonwealth to provide \$10 million for infrastructure development initiatives, as per Att 12
101 (iv)	Commonwealth to provide \$10 million for protecting conservation values on private land, as per Att 8

Attachment 6 #18	Any changes to Informal reserve boundaries to be in accordance with clause 57
Attachment 6 #20	Management plans with public participation for Commonwealth informal reserves by year 2000.
Attachment 6 #21	Certain communities will be protected on public land outside of reserves
Attachment 6 #22 and #24	Deferred Forest Land not required for the CAR Reserve system to be removed from the Register of Deferred Forest and entered on the Register of Multiple Use Forests.
Attachment 6 #23	Referral of certain Deferred Forest Land to the Public Land Use Commission for recommendations on tenure and management.
Attachment 8 #1-18	A variety of commitments were made with respect to a Strategic Plan, identification of priorities, Advisory Committees, and implementation of the CAR Private Reserves Program
Attachment 10 #1	Implementation of the State Policy <i>Setting New Standards for Water Quality</i>
Attachment 10 # 2	Developing a State Policy on integrated catchment management
Attachment 10#4	Implementing the <i>Historic Cultural Heritage Act 1995</i>
Attachment 10#6	Further develop and apply flexible silvicultural systems on public land to promote the sustainable production of special timbers
Attachment 10 #9	Implementing as a high priority the mechanisms for improving transparency and independence of the Forest Practices Board.
Attachment 10#10	Continue to resource the Forest Practices System and maintain appropriate contributions from industry
Attachment 10#12	Ensure that Forest Practices Plans specify best practice reforestation standards and provide for monitoring Where endangered species have been identified on private land, the plan includes appropriate management prescriptions for those species
Attachment 10#13	Management Plans for Formal and Informal Reserves identify the CAR values identified in the CRA and actions to manage those values

APPENDIX 3

Submissions to the Inquiry Terms of Reference



Submissions to the Inquiry Terms of Reference

Reedy Marsh Forest Conservation Group

The Environment Association Inc

Great Western Tiers National Park Campaign

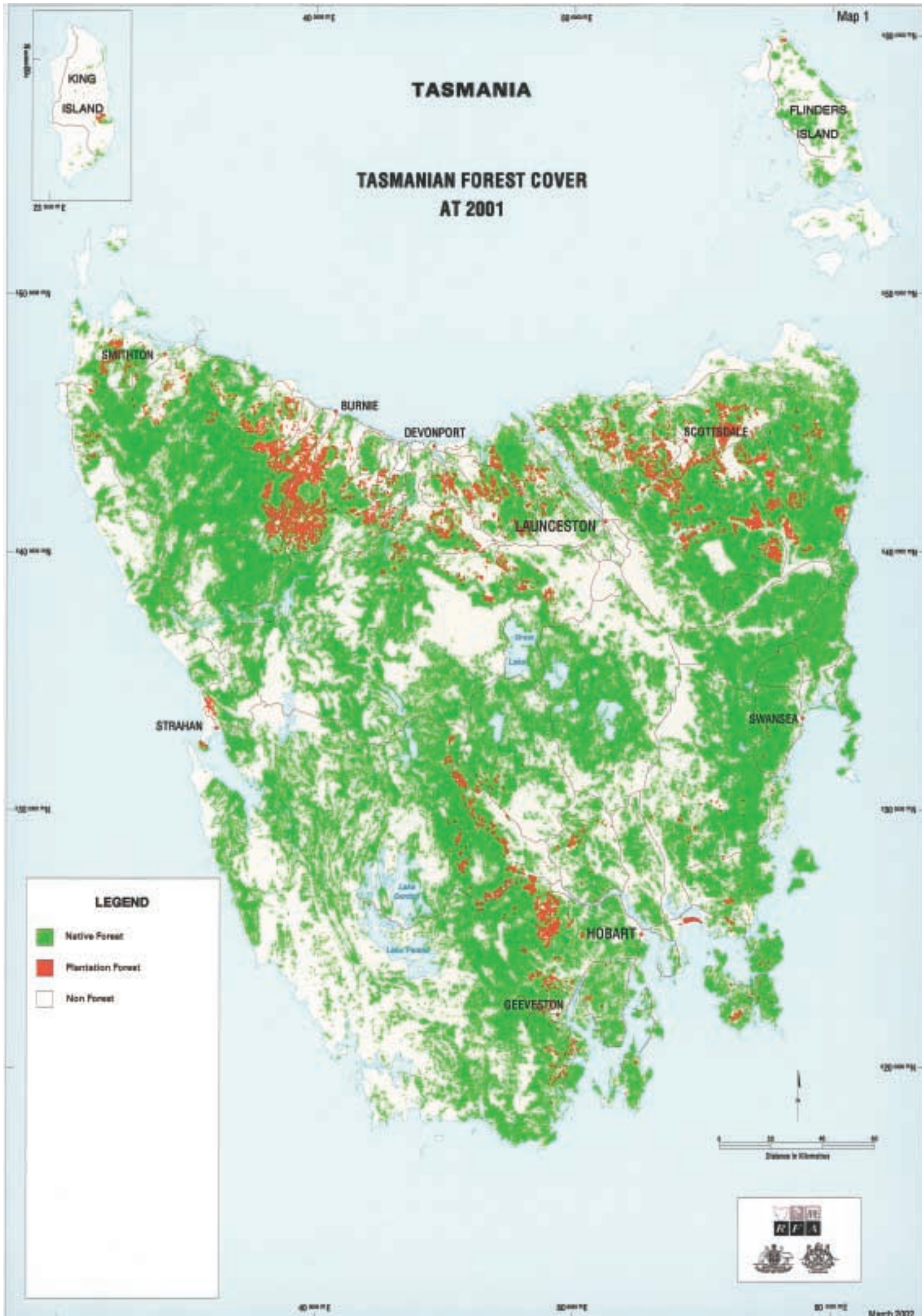
Timber Communities Australia Ltd

Southern Sustainable Forest Group

Tasmanian Conservation Trust

MAPS

TASMANIA

TASMANIAN FOREST COVER
AT 2001

TASMANIA

TASMANIAN CAR RESERVE STATUS
AT 2001