

## FORESTRY TASMANIA Response

### PLANNING

<p><b>Recommendation 1</b></p> <p>Procedures should be developed within 3 years of the commencement of fuelwood harvesting to provide adequate estimate of the availability and characteristics of energy-wood at the coupe level to support resource planning and management of Coarse Woody Debris stocks.</p>	<ol style="list-style-type: none"><li>1. FORESTRY TASMANIA agrees with and will implement this recommendation.</li><li>2. FORESTRY TASMANIA continues (as a matter of course) to review all of its information gathering processes and their adequacy. Fuelwood data capture requirements will be included in reviews related to resource level planning within the recommended timeframe.</li></ol>
<p><b>Recommendation 2</b></p> <p>Procedures should be developed within 3 years of the commencement of fuelwood harvesting for modelling the Coarse Woody Debris resources in both harvested and reserved forests for time periods exceeding at least one rotation. These findings must be incorporated in assessments of harvest schedules to establish that required long-term Coarse Woody Debris habitat is recruited and maintained (see also Recommendations 11 and 14)</p>	<ol style="list-style-type: none"><li>1. FORESTRY TASMANIA agrees with and will implement this recommendation.</li><li>2. The recommendation matches work and research currently being undertaken by FORESTRY TASMANIA (Division of Forest Research and Development and the Planning and Resources Branches). The findings of continuing research will be incorporated in sustained yield modelling projects within the recommended timeframe.</li></ol>

### PROTECTING SOIL PHYSICAL PROPERTIES AND WATER VALUES

<p><b>Recommendation 3</b></p> <p>Further development of the visual assessment methods proposed by Pennington and Laffan (2001) for monitoring the effects of harvesting intensity on soil disturbance should be undertaken. The method requires calibration of visual ratings to important soil physical change for major soil types and harvesting systems.</p>	<ol style="list-style-type: none"><li>1. FORESTRY TASMANIA agrees with and will implement this recommendation.</li><li>2. Division of Forest Research and Development has ongoing research in this area.</li><li>3. As visual assessment methods are better developed they will be applied internally and Forestry Tasmania will seek discussions with the Forest Practices Board to incorporate these into the Forest Practices Code.</li></ol>
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## REGENERATION OF EUCALYPTS

### **Recommendation 4**

Regeneration success on areas subjected to very high pulpwood removals in the 1980s be reviewed and used as a guide to the possible effects of proposed harvest of fuelwood on regeneration. Further, regeneration success be carefully monitored on areas subjected to harvest of fuelwood, especially those areas where harvest is most intensive, so that measures can be quickly taken to remedy any problems that may arise.

1. FORESTRY TASMANIA agrees with and will implement this recommendation.
2. The Division of Forest Research and Development will undertake a review in line with this recommendation.

## NUTRIENT CYCLING AND FOREST GROWTH

<p><b>Recommendation 5</b></p> <p>Existing guidelines should be further developed to ensure that, in general, and particularly on the most intensively-harvested coupes:</p> <p>Wood extraction continues to be planned so that soil disturbance is limited and soil organic matter is maintained over most of the coupe;</p> <p>Regeneration is rapid and optimal so that nutrient cycling processes are rapidly re-established.</p> <p>Nitrogen-fixing species (eg. wattles) are established early in the generating forest.</p>	<ol style="list-style-type: none"> <li>1. 1.1 FORESTRY TASMANIA agrees with and will implement this recommendation.</li> <li>1.2 As per Recommendation 3. Division of Forest Research and Development has ongoing research in this area</li> <li>2. 2.1 FORESTRY TASMANIA agrees with and will implement this recommendation.</li> <li>2.2 FORESTRY TASMANIA has a number of approaches to enhance regeneration and will continue to apply the most effective method to meet this recommendation.</li> <li>3. FORESTRY TASMANIA notes the recommendation, however FORESTRY TASMANIA's research indicates that "N" fixing plants such as Acacia naturally regenerate abundantly after Clearfall, Burn and Sow. Monitoring of regenerated areas is undertaken to check for "N" fixing plants</li> </ol>
<p><b>Recommendation 6</b></p> <p>Research at the Warra Long Term Ecological Research site should be continued so as to provide an assessment of the value, through the maintenance of organic matter, of leaving undisturbed patches in coupes harvested for energy-wood. This recommendation is in consort with Recommendations 9 and 14.</p>	<ol style="list-style-type: none"> <li>1. FORESTRY TASMANIA agrees with this recommendation.</li> <li>2. The recommendation is consistent with the Warra Silvicultural Systems Trial program.</li> </ol>
<p><b>Recommendation 7</b></p> <p>Practical and safe procedures be explored and developed for returning ash to forest sites.</p>	<ol style="list-style-type: none"> <li>1. FORESTRY TASMANIA agrees with and will implement this recommendation.</li> <li>2. The recommendation conforms with the commitments provided in the Development Proposal and Environmental Management Plan for the Huon Wood Centre.</li> </ol>

## BIODIVERSITY OF VASCULAR PLANTS

<p><b>Recommendation 8</b></p> <p>Extraction techniques should continue to be planned so that topsoil is maintained intact wherever possible, thereby ensuring that regeneration of understorey species both from seed and from root-stocks is maximised.</p>	<ol style="list-style-type: none"><li>1. FORESTRY TASMANIA agrees and already with complies with this recommendation.</li><li>2. The recommendation is commensurate with the Division of Forest Research and Development research programs (see Recommendation 3) and the Forest Practices Code.</li></ol>
<p><b>Recommendation 9</b></p> <p>The value of undisturbed patches that maintain some proportion of a coupe in a relatively undisturbed state, for maintaining plant diversity should continue to be evaluated. This Recommendation is in consort with Recommendations 6 and 14.</p>	<ol style="list-style-type: none"><li>1. FORESTRY TASMANIA agrees with and will implement this recommendation. The recommendation is consistent with the Warra Silvicultural Systems Trial program. Implementation of outcomes from the Trial program is undertaken progressively</li></ol>
<p><b>Recommendation 10</b></p> <p>Studies of change in plant species composition and frequency after current and proposed logging regimes should continue.</p>	<ol style="list-style-type: none"><li>1. FORESTRY TASMANIA agrees with and complies with this recommendation.</li><li>2. This recommendation conforms with the Warra Silvicultural Systems Trial.</li></ol>

## ROLE OF COARSE WOODY DEBRIS IN THE CONSERVATION OF BIODIVERSITY

<p><b>Recommendation 11</b></p> <p>The dynamics of Coarse Woody Debris be modelled at the landscape level to establish how the stock and size structure vary over time across forest types, productivity classes and geographical locations. This information should be used to reduce or avoid fuelwood harvest, and/or increase rotation length beyond 80-100 years, in selected areas so as to create zones (nodes) of forest rich in large diameter Coarse Woody Debris that are linked throughout the harvested forest.</p>	<ol style="list-style-type: none"> <li>1. FORESTRY TASMANIA agrees with and will implement this recommendation.</li> <li>2. This recommendation is consistent with modelling projects as per FORESTRY TASMANIA's response to Recommendation 2.</li> </ol>
<p><b>Recommendation 12</b></p> <p>Guidelines for retention of Coarse Woody Debris be developed that give priority to large (&gt; 1m diameter) decayed logs (existing habitat) and defective green sections of harvested trees (which during decay will create a new suite of habitat). The guidelines should specify a minimum quantity (volume/ha) for retention that could be varied according to characteristics (eg. landscape position) of the harvest unit. Where sufficient material of &gt;1m diameter exists, the harvest of other fuelwood could be high. Coupes to be converted to plantations should be subjected to intensive fuelwood harvest.</p>	<ol style="list-style-type: none"> <li>1. FORESTRY TASMANIA agrees with the need to develop guidelines for fuelwood harvesting.</li> <li>2. Recommendation 12 conforms, generally, with research recommendations in Grove <i>et al.</i> "A review of biodiversity conservation issues relating to coarse woody debris management in the west eucalypt production forests of Tasmania."</li> </ol>
<p><b>Recommendation 13</b></p> <p>Silvicultural techniques be further developed for aggregated habitat retention on logging coupes.</p>	<ol style="list-style-type: none"> <li>1. FORESTRY TASMANIA agrees with and will implement this recommendation.</li> <li>2. The recommendation is met by research planned in the Warra Silvicultural Systems Trial.</li> </ol>
<p><b>Recommendation 14</b></p> <p>The Forest Practices Board consider developing guidelines for planning the management of Coarse Woody Debris at landscape scales, and a role in the review and approval of such plans.</p>	<ol style="list-style-type: none"> <li>1. FORESTRY TASMANIA agree that the development of guidelines is appropriate and that FORESTRY TASMANIA will continue to work with Forest Practices Board to implement suitable prescriptions across the forest estate.</li> </ol>

## GREENHOUSE GAS BALANCES

### **Recommendation 15**

The use of fuelwood is likely to have considerable greenhouse benefits. However, because of the large contribution of non-CO<sub>2</sub> greenhouse gases to total greenhouse gas balances, further research to better quantify non-CO<sub>2</sub> emissions under a range of field burning conditions is warranted.

1. FORESTRY TASMANIA agrees generally with this recommendation.
2. FORESTRY TASMANIA will consider proposals for supporting relevant research in this area by an appropriate body, in conjunction with other industry bodies.

## APPENDIX

Response 1	<ol style="list-style-type: none"> <li>1. The knowledge required to design efficient inventories of fuelwood will be dependent on experience gained from the progressive development and testing of operational harvesting techniques and CWD management prescriptions over the early years of the proposed fuelwood industry.</li> <li>2. FT has previously developed relationships between PI type and the quantity of sawlog and pulpwood.</li> <li>3. This approach can be extended to include fuelwood.</li> <li>4. But, FT needs to respect the ratio of investment in information relative to the value of the product.</li> <li>5. Fuelwood volumes can be listed in the 3 Year Plan of Operations where relevant.</li> <li>6. Obligations regarding preparations of 3 Year Plans as per the Forest Practices Code.</li> </ol>
Response 2	<ol style="list-style-type: none"> <li>1. Included in 2002 DFRD Annual Research Review.</li> <li>2. Work has already started (eg. See Grove <i>et al.</i> “A review of biodiversity conservation issues relating to coarse woody debris management in the wet eucalypt production forests of Tasmania.”).</li> </ol>
Response 3	<ol style="list-style-type: none"> <li>1. Implemented through the Forest Practices Code, Environmental Management System and Montreal standards as well as the proposed Australian Forestry Standard .</li> <li>2. Mike Laffan and Phil Pennington are continuing to work on this project.</li> </ol>
Response 4	<ol style="list-style-type: none"> <li>1. Division of Forest Research and Development will compare regeneration success through various periods (however, there is a suspicion that the results may be influenced by other factors eg. browsing control).</li> </ol>
Response 5	<ol style="list-style-type: none"> <li>1) Refer Appendix, Response 3.</li> <li>2) As measured by regeneration survey, Environmental Management System, Quality Standards System and Forest Practices Code audits.</li> <li>3) Refer to Warra and JH paper – references required JH please note****.</li> <li>4) Regeneration Survey Technical Bulletin 6 is currently under review</li> </ol>
Response 6	<ol style="list-style-type: none"> <li>1. Continuing Warra Silvicultural Systems Trial.</li> <li>2. Consistent with the Forest Practices Code guidelines (eg. streamside reserves and habitat clumps) and Wildlife Habitat Strips and Environmental Management Systems).</li> </ol>
Response 7	<ol style="list-style-type: none"> <li>1. See Development Proposal and Environmental Management Plan, the Wood Centre, August 2001 (page 376 “Ash Management”).</li> </ol>
Response 8	<ol style="list-style-type: none"> <li>1. Consistent with Appendix Response 6 (2).</li> </ol>
Response 9	<ol style="list-style-type: none"> <li>1. Consistent with Appendix Response 6 (2)</li> <li>2. Note: some 20% of the provisional coupe area remains unharvested at the completion of the forest operation.</li> </ol>

Response 10	1. Consistent with Warra Silvicultural Systems Trial.
Response 11	<ol style="list-style-type: none"> <li>1. See Appendix Response 2.</li> <li>2. Division of Forest Research and Development Review 2002, Rotation Length Guidelines Project jointly involving Division of Forest Research and Development, Planning and Resource Branch</li> <li>3. Conforms with FORESTRY TASMANIA, eg. forestry in the landscape corporate goals, Regional Forest Agreement, Ecologically Sustainable Forest Management principles and Australian Forest Standards.</li> </ol>
Response 12	<ol style="list-style-type: none"> <li>1. Operational guidelines will be developed for the management of Coarse Woody Debris. This work is developing through Conservation Planning, arising from recommendations in Grove <i>et al.</i> "A review of biodiversity conservation issues relating to coarse woody debris management in the wet eucalypt production forests of Tasmania."</li> <li>2. Guidelines would be provided in the "Green Book" and individual Forest Practices Plans.</li> </ol>
Response 13	1. 2 Coupes planned for trialling the aggregated harvesting system in 2002/3
Response 14	1. See Response to Recommendation 14.
Response 15	<ol style="list-style-type: none"> <li>1. See Response to Recommendation 15. Appropriate bodies include: <ol style="list-style-type: none"> <li>1. The proposed Bushfire Co-operative Research Centre.</li> <li>2. Australian Greenhouse Office.</li> <li>3. Greenhouse Accounting Co-operative Research Centre.</li> </ol> </li> </ol>