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**Property and Field Day Tour Route Map**

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ACKNOWLEDGEMENTS

The contribution made by Brian and Jan Bonde to host this field day on the family property, ‘Bonde Pastoral’, is gratefully acknowledged.

This field day has been organised by Private Forests Tasmania and Brian Bonde.

Support and contribution by the following sponsors is appreciated:

Private Forests Tasmania
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Private Forests Tasmania was established in 1994 as a statutory authority under the Private Forests Act (1994), and is funded by the Tasmanian Government and private forest owners.
Private Forests Tasmania promotes, fosters and assists the private forestry sector on forestry matters, provides strategic and policy advice to Government and represents Tasmanian private forest owners’ interests nationally.
Private Forests Tasmania facilitates development of the private forest resource consistent with sound forest and land management practices. This includes advising and assisting private landowners in the sustainable management of native forests and the establishment and management of plantations on private land.

Australian Forest Growers
www.afg.asn.au
Australian Forest Growers (AFG) is the national association representing and promoting private forestry and commercial tree growing interests in Australia. If you grow trees commercially for wood or non-wood products, or you would like to, AFG can help you. The association has branches in all States and an active Branch in Tasmania. AFG publishes an excellent quarterly magazine, conducts field days, national conferences and Tree Farmer of the Year Awards.

Australian Property Institute
www.api.org.au
The Australian Property Institute (API) represents approximately 8,600 property professionals throughout Australia and overseas. API members include residential, commercial and plant and machinery valuers; property advisers; property analysts and fund managers; property lawyers; and property researchers and academics.
The Institute’s primary role is to set and maintain the highest standards of professional practice, education, ethics and professional conduct for its members and the broader property profession.
FIELD DAY PROGRAM
‘The Values of Trees on Your Farm’
Brian and Jan Bonde, 426 Preston Road, North Motton 7315

9:00am  Registration / tea & coffee
9:30am  Welcome and Introduction
        Arthur Lyons, Manager Services, Private Forests Tasmania
        Tom Fisk, CEO, Private Forests Tasmania
9:45am  Brian & Jan Bonde,
        Australian Forest Growers-SFM Forest Products Tasmanian Tree Farmer of Year 2011
10:00am Farm Tour
10:15am STOP 1
        The Values of Commercial Plantations
        Brian Bonde — history and involvement
        David Bower, Private Forests Tasmania, — stand productivity and future returns
        Lyell Dean, on behalf of TAS Land and Forests — logging, harvesting and marketing operations

STOP 2
The Values of Native Forest Management
Brian Bonde — role of native forests and management
Rob Smith, Private Forests Tasmania, — selective logging and future management

12:10pm Homestead
Property Valuation
Guest Speaker — Tony McDonald, Australian Property Institute

12:30pm Lunch
1:30pm  Farm Tour
        Lyell Dean, on behalf of TAS Land and Forests — E. nitens thinning operation
1:45pm  Drive by E. nitens plantation
2:00pm STOP 3
Farm Forestry Demonstration Site - Cypress Plantation
Brian Bonde — history and involvement
Henry Chan, Private Forests Tasmania, — demonstration site, potential of cypress on farms, uses, timber prices and markets

2:30pm  Summation
        Mike Buckby, NW Farm Forestry Convenor
        Visitor Survey
2:45pm  Close
2:50pm  Homestead

Values of Trees on Your Farm – Private Forests Tasmania
29/03/2012
STOP 1

The Values of Commercial Plantations

David Bower, Private Forest Advisor, Private Forests Tasmania

Maximising the Productivity of the Land

There are areas on the farm, usually steep and/or rocky, which are unable to be ploughed or cropped. Brian has attempted to make productive use of such areas, and forestry has provided the opportunity to do so.

Shelter

There are ‘freezing cold winds from the southwest.’ Plantations established in the late 1990’s have provided excellent shelter for some 30 ha of cropping and grazing land.

Comparative production from the 30 ha area with and without shelter

<table>
<thead>
<tr>
<th>Paddock Exposure</th>
<th>Annual turn off per annum</th>
<th>Turn off per ha per annum</th>
<th>Production gain</th>
<th>Net financial gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>No shelter - subject to cold winds</td>
<td>1 050 fat lambs</td>
<td>35 fat lambs</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sheltered (2011)</td>
<td>1 500 fat lambs</td>
<td>50 fat lambs</td>
<td>43%</td>
<td>$6 000 or (10%)</td>
</tr>
</tbody>
</table>

According to Brian, ‘It would be fair to assume a similar increase in crop production for vegetable crops grown in other rotations in this area.’

In 2011 the 30 ha area consisted of 18 ha of permanent pasture, grass and clover plus 12 ha of interval rape. Lamb weight gain was approximately 3kg live weight per week with a 10 week turn around. That year 1500 lambs were brought in at 30 - 40 kg @ $90 per head, total cost $135 000, and 1500 lambs were sold at 52 - 60 kg @ $130 per head for a return of $195 000.

Aesthetics

Brian appreciates the aesthetic value of a treed landscape, however he, ‘doesn’t like the look of pines much.’ As a result, Brian planted about half of the area to Eucalyptus nitens and half to Pinus radiata, with the Radiata Pine being screened by eucalypts.

Land Values

As well as having a treed farm with greater aesthetic appeal, Brian and Jan believe that a farm with plantations and native forests may attract a higher price should it be sold in the future.

Additional Environmental Values

Plantations control erosion by stabilizing steeper areas. That is by:
- physically binding soil together;
- intercepting water run off; and
- providing an alternative to running livestock on steeper slopes.

Plantations intercept nutrients and ground water and use them to enhance growth and productivity.
Site Factors and Silvicultural History - Allisons Rd (West Block)

Plantation development was funded by harvesting (conversion) of native forest

<table>
<thead>
<tr>
<th></th>
<th>Pinus radiata</th>
<th>Eucalyptus nitens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Annual Rainfall</td>
<td>1200mm</td>
<td>1200mm</td>
</tr>
<tr>
<td>Geology</td>
<td>Tertiary Basalt</td>
<td>Tertiary Basalt</td>
</tr>
<tr>
<td>History</td>
<td>Part ex-forest and part ex-pasture</td>
<td>Ex-pasture</td>
</tr>
<tr>
<td>Year established</td>
<td>1997</td>
<td>1997</td>
</tr>
<tr>
<td>Preparation</td>
<td>Rip and mound</td>
<td>Rip and mound</td>
</tr>
<tr>
<td></td>
<td>None for ex-native forest</td>
<td></td>
</tr>
<tr>
<td>Fertilizer</td>
<td>DAP @100g/tree, at planting only</td>
<td>DAP @100g/tree, at planting only</td>
</tr>
<tr>
<td>Harvesting</td>
<td>Due around 2022 - 2027</td>
<td>Nov 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 ha yielding 310t/ha approx.</td>
</tr>
</tbody>
</table>

Definitions and Acronyms

*Release thinning*  Removal of a portion of the competing stems in order to concentrate growth onto the remaining trees.

*Stumpage*  Amount paid to landowner after harvesting, transport and administration costs have been taken into account.

*MAI*  Mean annual increment (average annual growth rate).

*NCT*  Non-commercial thinning or waste thinning.

*MDH*  Mean dominant height.

*IRR*  Internal rate of return.

*NPV*  Nett present value.
Measurement plot results, estimates of wood production and financial returns

<table>
<thead>
<tr>
<th>Plot</th>
<th>Species</th>
<th>Current Stocking (sph)</th>
<th>MDH (m)</th>
<th>Current Stand Volume (m³ha⁻¹)</th>
<th>Current MAI (m³ha⁻¹yr⁻¹)</th>
<th>Management Regime</th>
<th>Estimated MAI (m³ha⁻¹yr⁻¹)</th>
<th>Estimated Volume (m³ha⁻¹)</th>
<th>IRR (%)</th>
<th>NPV ($S)</th>
<th>Stumpage at Clearfall ($S/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>P. radiata</em></td>
<td>370</td>
<td>26.9</td>
<td>432</td>
<td>28.8</td>
<td>Clearwood, NCT, rotation 30years.</td>
<td>29 - 36</td>
<td>700 - 1 080</td>
<td>7 - 11*</td>
<td>3 000 - 8 000*</td>
<td>32 000 - 44 000*</td>
</tr>
<tr>
<td>2</td>
<td><em>P. radiata</em></td>
<td>288</td>
<td>24.3</td>
<td>329</td>
<td>21.9</td>
<td>Clearwood, NCT, rotation 30years.</td>
<td>29 - 32</td>
<td>700 - 950</td>
<td>7 - 10*</td>
<td>3 000 - 6 700*</td>
<td>32 000 - 42 000*</td>
</tr>
<tr>
<td>3</td>
<td><em>P. radiata</em></td>
<td>370</td>
<td></td>
<td></td>
<td></td>
<td>Knotty Sawlog, commercial thin at 13 years.</td>
<td>28</td>
<td>720</td>
<td>10</td>
<td>3 200</td>
<td>18 000 - 19 000</td>
</tr>
<tr>
<td>4</td>
<td><em>E. nitens</em></td>
<td>1100</td>
<td>23.4</td>
<td>333</td>
<td>22.2</td>
<td>Pulpwood, rotation 13-15 years.</td>
<td>22</td>
<td>330</td>
<td>9 - 11*</td>
<td>1 300 - 2 000*</td>
<td>6 000 - 7 500*</td>
</tr>
<tr>
<td>5</td>
<td><em>E. nitens</em></td>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td>Veneer, commercial thin at 12 years, rotation 30 years.</td>
<td>24 (Empirical model only)</td>
<td>460</td>
<td>6.5 - 7.5*</td>
<td>900 - 1 700*</td>
<td>11 500 - 15 000*</td>
</tr>
</tbody>
</table>

*NOTE*  Lower figures were generated using Process/Physiological based model (AGGRO) with lower stumpages of $20/tonne for eucalypt pulp, $80/m³ for pine clearwood and $70/m² for eucalypt veneer.

Higher figures were generated using plot data (Empirical model) with higher stumpages of $25/tonne for eucalypt pulp $120/m³ for pine clearwood, and $100/m² for eucalypt veneer.

ESTIMATES IN THE TABLE ABOVE ARE A GUIDE ONLY. THERE ARE A NUMBER OF ASSUMPTIONS AND VARIABLES INVOLVED IN MODELLED OUTPUTS.

For further information and advice please contact Private Forests Tasmania Staff.
Shelterbelts provide shelter for crops and livestock as well as biodiversity and wildlife habitat.

Plantations were established to utilise areas not suitable for farming, i.e. steep, rocky, drainage lines and stream sides, around dams and other non-productive areas.
Well-managed and tended trees generate a financial return at harvest.
Eucalyptus nitens Plantation Clear Felling and Thinning

Lyell Dean*

Discussion Points:
1. Property overview
2. Age and species
3. Intended harvest outcome
4. Products
5. Actual harvest outcome
6. Future plans
7. New and existing markets

*on behalf of:
TAS Land and Forests
P.O. Box 403, Devonport, 7310.
Ph 6423 1280
Fax 6423 1282
Mobile 0408 248 867
STOP 2
The Values of Native Forest Management

Rob Smith, Private Forest Advisor, Private Forests Tasmania

Western Block
Total area is 105 ha of which 35 ha is native forest (highlighted in green).

Native Forest Management

The native forest component of the Western Block of the Bondes’ property has been deliberately managed to efficiently utilise the land. These areas of forest were retained on the poorer clay soils that would not be as productive as the fertile red soils and to meet Brian’s own preference to keep some native forest on the property.

The native forests have been managed by selective harvests and thinnings, to provide a valuable local timber resource and to retain the better quality trees to provide potential sawlogs and improved genetic material.
A small area of dense eucalypt regrowth has been thinned to provide firewood and has subsequently seen a significant response in growth of the retained trees.

The Bondes' native forests are valued for their ability to provide:

- shelter from cold winds, resulting in increased lamb and arable production;
- a timber resource, via a supply of sawlogs, firewood, and poles;
- natural aesthetics; and
- protection of vulnerable land, in particular fauna habitats and watercourses.

Thereby, just as in the case of the plantations, the land use decisions have successfully sought to maximise the sustainable productivity of the property.

Native Forest Management and the Triple Bottom Line

The Bondes have outlined their reasons how they have chosen to manage and why they value their native forests. The values identified are largely economic, but their management also contributes greatly to both the social and environmental values.

The management of native forests also provides potential to maintain and enhance environmental values. Native forest management often involves research, development and protection of the following values: fauna, flora, geomorphology, soil and water.

Research has shown that sustainably managed native forests can provide significant carbon storage in excess of unmanaged native forests. The subject of carbon storage within managed native forests and the potential income from carbon trading is a significant concern to forest owners who would prefer to actively manage their forests instead of reserving their forests in a less productive state. Current native forest carbon trading schemes do not allow for any harvesting operations.

Native forest management satisfies the triple bottom line balancing social, economic & environment values to provide sustainable outcomes.

Without the option to manage native forests there is the real possibility that the triple bottom line could be severely jeopardized and sustainable rural development would be greatly impaired.
Property Valuation

Tony McDonald, member, Australian Property Institute

Market Value

Market value is the estimated amount for which an asset should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.

Capital Value

Capital value, in respect of land, means the capital sum which the land, if it were held for an estate in fee simple free from encumbrances by an owner who is at liberty to dispose of it as and when he or she desires, might be expected to realise if offered for sale on such reasonable terms and conditions as a bona fide seller would require.

Assessed Annual Value

Assessed annual value in respect of land, means the gross annual income, expecting any amount to be applied for goods and services tax and reimbursement of council rates and land tax applicable to the land, which at the time of valuation a person owning the land and its appurtenances in fee simple free from encumbrances and able freely to dispose of it might reasonably expect to obtain by letting it to a tenant without fine on reasonable terms and conditions.

Land Value (Trees – Sub Section 7)

(5) For the purposes of this Act, the land value of land is to be assessed in accordance with the following rules:

(a) the land value of land is the capital sum which the fee simple of the land might be expected to realise if offered for sale on such reasonable terms and conditions as a bona fide seller would require, assuming that the improvements, if any, on the land or appertaining to the land, other than land improvements made or acquired by the owner or the owner’s predecessor in title, had not been made;

(b) not withstanding paragraph (a), in determining the land value of any land it is to be assumed that –

(i) the land may be used, or may continue to be used, for any purpose for which it was being used or for which it would be used, at the date to which the valuation related; and

(ii) any improvements which are required by law to be used for any purpose or to be retained in their present form continue to exist or be made, as so required.

(7) For the purposes of this Act, in the assessment of the land value, the capital value and the assessed annual value of land used primarily and effectively for growing trees to be cut for commercial or industrial uses, use as firewood excepted, and of an area –

(a) in the case of indigenous trees not in an artificially established plantation, or not less than 10 hectares; and

(b) in the case of an artificially established plantation, whether indigenous or foreign trees (including a plantation artificially established and naturally regenerated), of not less than one hectare –

the value of the trees growing on the land is not to be included.
Case Study
The characteristics of both a ‘subject property’ and three surrounding property sales are:

Subject Property
- 370 hectares
- 15kms south of regional centre
- Undulating/steep hillside
- Red/brown volcanic loam
- Estimated 40% arable/cropping with good irrigation dam
- 15 hectares agro-forestry
- 7 hectares steep timbered gullies/creeks
- 1950 weatherboard dwelling – 185m²
- Renovated early 2005 with new kitchen, en-suite to master bedroom, re-wired & re-plumbed
- Double garage, Colorbond, lock up
- Machinery shed, Zincalume 18m x 10m, open front, concrete floor
- Potato shed, Zincalume 20m x 15m, concrete floor, lock up
- Hayshed 8'/ Zincalume walls, capacity 3,500 standard bales
- Woosheep, 1960, 3 stand, G/E conventional 190m long
- Timber & steel yards
- Steel cattle yards, 30 head, 3 yard, race, ramp
**Surrounding Properties**

<table>
<thead>
<tr>
<th>SALE 1</th>
<th>SALE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 120 hectares</td>
<td>- 200 hectares</td>
</tr>
<tr>
<td>- 4km from town</td>
<td>- 27km from town</td>
</tr>
<tr>
<td>- Sold for $1,800,000 in December 2011</td>
<td>- Sold for $650,000 in February 2012</td>
</tr>
<tr>
<td>- Prime agricultural/cropping</td>
<td>- 80% timbered with no millable timber</td>
</tr>
<tr>
<td>- Possible zoned future residential but currently rural</td>
<td>- Balance cleared and used for grazing, fair fencing and pasture</td>
</tr>
<tr>
<td>- 1970 brick-veneer dwelling, 160 m², average order</td>
<td>- 1950 weatherboard home, G/E roof, 150 m², average order, garage</td>
</tr>
<tr>
<td>- Hayshed G/E, capacity 4,000 bales</td>
<td>- Machinery shed, weatherboard, 120 m²</td>
</tr>
<tr>
<td>- Barn G/E</td>
<td>- Hayshed G/E, capacity 2000 bales</td>
</tr>
<tr>
<td></td>
<td>- Former woolshed, now disused</td>
</tr>
<tr>
<td></td>
<td>- Cattle yards</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SALE 3</th>
<th>SALE 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 600 hectares</td>
<td>- 3.2 hectares</td>
</tr>
<tr>
<td>- 18km from town</td>
<td>- 4km from town</td>
</tr>
<tr>
<td>- Sold for $3,400,000 in July 2010</td>
<td>- Sold for $380,000 in March 2010</td>
</tr>
<tr>
<td>- Rural zone</td>
<td>- 1990 brick-Veneer dwelling, tile roof, 180 m²</td>
</tr>
<tr>
<td>- Estimate 20% arable with irrigation dam</td>
<td>- Double garage</td>
</tr>
<tr>
<td>- Balance undulating mixed red/brown to grey sandy loam</td>
<td>- Machinery shed, Colorbond, LV</td>
</tr>
<tr>
<td>- Timbered gullies, 45ha, fenced off, landscaping</td>
<td>- Good surrounds</td>
</tr>
<tr>
<td>- 1880 dwelling, weatherboard G/E, 220 m², historic registered, exceptional condition</td>
<td></td>
</tr>
<tr>
<td>- 1960 dwelling, weatherboard, G/E, Manager's dwelling, 120 m², 2 garages</td>
<td></td>
</tr>
<tr>
<td>- Three machinery sheds</td>
<td></td>
</tr>
<tr>
<td>- Six stand weatherboard woolshed &amp; yards</td>
<td></td>
</tr>
<tr>
<td>- Yards</td>
<td></td>
</tr>
<tr>
<td>- Two haysheds</td>
<td></td>
</tr>
</tbody>
</table>
STOP 3
Farm Forestry Demonstration - Cypress Plantation

Henry Chan, Private Forest Advisor, Private Forests Tasmania

The Demonstration

This 2.1 ha cypress plantation, along with the adjoining 4.4ha Eucalyptus nitens plantation, was established in 2001 as a Farm Forestry Demonstration Site, through a devolved grant project funded by The Natural Heritage Trust and administered by Private Forests Tasmania.

The aim of this project is to grow high quality wood products and achieve the following environmental benefits:
- soil conservation (i.e. erosion control);
- water quality management through planting for stream protection;
- long term weed control;
- shelter for livestock and crops; and
- improved land use potential (i.e. better production capability).

Stand History

The stand was intended to be only Cupressus lusitanica (Mexican Cypress); but a mixture of both Cupressus lusitanica and Cupressus macrocarpa (Monterey Cypress) resulted.

Plot Information (August 2011)

<table>
<thead>
<tr>
<th>Stocking post planting</th>
<th>950 trees/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average DBH</td>
<td>11.7cm (15.2cm for the largest 400 trees/ha)</td>
</tr>
<tr>
<td>Mean Top Height</td>
<td>8.0m</td>
</tr>
<tr>
<td>Mean Pruned Height</td>
<td>3.4m (some roadside trees up to 6.0m - 6.5m toward abattoir)</td>
</tr>
<tr>
<td>Basal Area</td>
<td>11.6m²/ha</td>
</tr>
<tr>
<td>Total Stem Volum</td>
<td>46.2m³/ha</td>
</tr>
</tbody>
</table>

Definitions:
- **Average DBH**: Average stem diameter measured at breast height (i.e.1.3m above the ground) expressed in centimetres.
- **Mean Top Height**: Average height of the tallest 20 trees per hectare expressed in metres
- **Mean Pruned Height**: Average height to which all trees have been pruned.
- **Basal Area**: Total cross-sectional area of stems, at 1.3 metres above the ground, expressed as square metres per hectare.
- **Total Stem Volume**: Total merchantable volume of wood expressed as cubic metres per hectare.
Completed and Intended Operations

<table>
<thead>
<tr>
<th>Time</th>
<th>Completed Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2001</td>
<td>Planted at 1,000 trees/ha</td>
</tr>
<tr>
<td>September 2004</td>
<td>Form pruning</td>
</tr>
<tr>
<td>November 2008</td>
<td>First prune 600 - 700 trees/ha to average 2.5m pruned height, and thinned out competing wattle wildlings.</td>
</tr>
<tr>
<td>August 2011</td>
<td>Second Prune 450 - 500 trees/ha to 3.5m - 4.5m pruned height.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Intended Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>Third prune 300 trees/ha to average 6.2m pruned height.</td>
</tr>
<tr>
<td>2014</td>
<td>Thin to 500 - 600 stems/ha after third and final pruning</td>
</tr>
<tr>
<td>2021 (approx)</td>
<td>Commercial thinning to 300 trees/ha</td>
</tr>
<tr>
<td>2035-2040</td>
<td>Clearfell</td>
</tr>
</tbody>
</table>

Growth model projection

Ian Nicholas, a New Zealand consultant and expert on cypress, inspected this stand in May 2011 and was quite impressed with the good growth rate. He estimates a rotation of 35-40 years is achievable. He has provided some growth projections at age 40 years (see table below) using the newly-developed NZ Cypress Growth Model (although with a higher mortality function).

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Rotation Age (years)</th>
<th>DBH (cm)</th>
<th>Stocking (trees/ha)</th>
<th>Mean Top Height (m)</th>
<th>Basal Area (m²/ha)</th>
<th>Volume (m³/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No thinning</td>
<td>40</td>
<td>47.4</td>
<td>336* (400)**</td>
<td>26.1</td>
<td>59.4* (70.7)</td>
</tr>
<tr>
<td>2</td>
<td>Thin to 600 @ 11 years AND to 300 @ 20 years</td>
<td>40</td>
<td>55.0</td>
<td>201* (250)**</td>
<td>26.1</td>
<td>47.8* (59.4)</td>
</tr>
<tr>
<td>3</td>
<td>Thin to 300 @ 11 years</td>
<td>40</td>
<td>61.3</td>
<td>168* (200)**</td>
<td>26.1</td>
<td>49.6 (59.0)</td>
</tr>
</tbody>
</table>

Notes:
* Projected figures by the NZ Cypress Growth Model (with high mortality function).
** Assumed higher stockings (to reflect lower mortality) with re-calculated basal areas and volumes.

Ian commented on the importance to thin down to final tree stocking early in order to achieve the desired larger diameter logs. This is particularly important to ensure that logs above the pruned section have live branches. Timber with dead knots does not market well. The target DBH in NZ is 60cm.
Commercial thinning is only an option if there is a market for the thinnings and sufficient thinning volume to justify the operation. The growth model estimates about 53m³/ha would be produced from a thinning operation that reduces the stocking from 600 to 300 trees/ha at age 20 years. Logs removed by thinning have about 50% heartwood and are suitable for panelling.

**Cypress in Australia**

*Cupressus macrocarpa*, Monterey Cypress, (commonly called ‘macrocarpa’) has been successfully grown in Tasmania and Victoria in shelterbelts, usually as a single row, for homesteads and stock shelter. These trees are not of good timber quality, have multiple trunks (due to canker disease) and many large limbs, hence sawlog recovery is quite low.

Cypress canker causes growth loss, malformation and mortality. Although macrocarpa is still suitable in colder higher-altitude sites, there are now more areas planted with *Cupressus lusitanica* (Mexican Cypress); *Cupressus leylandii* (Leyland Cypress, a hybrid between macrocarpa and *Chamaecyparis nootkatensis*). Better canker -resistant clones are now produced in New Zealand through tree breeding programmes (from the early 1980’s) crossing *C. lusitanica* and *C. macrocarpa* with other cypress species.

**Uses**

Cypress logs are easy to mill and the timber seasons well. It can be used for boat building, furniture, wood turning, craft and joinery, weather boards and as a farm utility timber. (The small hut next to the Bondes’ residence was built with macrocarpa several decades ago). Cypress timber is durable with a below-ground life of 10-15 years and much longer life above ground. The timber is reported to be naturally borer resistant on mainland Australia. The timber is easy to work and nail and stains and polishes well.

**Log and Timber Prices**

**Tasmania**

Several local millers in the North West who process cypress logs were contacted for advice. The logs they normally process are mainly shelterbelt macrocarpa that are generally low quality sawlogs due to multi-leaders and very branchy large limbs. Currently these millers are supplying outlets in Hobart and Devonport with a range of product grades suitable for landscaping and outdoor furniture manufacture, crafts, bench-tops/kitchen shelves and premium decorative panels. Every miller agrees that well-managed woodlot/plantation cypress will fetch substantially higher round-log values due to the much higher recovery from these larger logs with smaller limbs. Clearwood logs from pruned plantations will fetch higher premiums as veneer grade. The following prices are indicative only (March 2012):

- One miller expects clearwood logs to be worth $150/t at current market rate.
- One miller pays an average $70/t stumpage; another miller buys logs on truck at farm gate ranging from $30/t to $70/t depending on log quality. Quite often in situations with only a few trees, the log price will be next to nothing due to the excessive cost to fell, delimb and clean-up.
- Millers get paid about $800 - $1,200/m³ for green sawn timber; while others get up to $2,000 - $2,500/m³ for air-dried/seasoned timber.
- Retail values can vary depending on the product grade – ranging from the lower end landscape/outdoor furniture grades at $1,000 - $1,600/m³ to the top end premium craft/decorative grades at $4,000 - $4,500/m³.
**Victoria**
Several Victorian millers and wholesalers/retailers (from Marysville, Warburton and Barongarook West) provided the following prices in March 2012:

- Landowners receive $60 - $80/t at farm gate and up to $100/t for better quality grades. Clearwood logs should fetch up to $150 - $180/t at farm gate but not much is available yet.
- Millers receive $500/m³ for green sawn (landscape grade) to $1,000/m³ (top premium appearance grade); with intermediate prices for structural and panel grades; and
- Retailers receive $250/m³ for air-dried pallet grade to $2,000/m³ for air-dried premium grade. One company retailed 900mm wide kiln dried timber slabs for up to $5,000/m³.

**New Zealand**

**Plantation grown cypress prices** *(New Zealand Farm Forestry Association, 2007)*

<table>
<thead>
<tr>
<th>Log Product</th>
<th>Approximate Price ($/tonne)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruned macrocarpa and <em>C. lusitanica</em> veneer logs</td>
<td>140 - 225 (on truck)</td>
</tr>
<tr>
<td>Top quality pruned macrocarpa and <em>C. lusitanica</em> veneer logs</td>
<td>300 - 400 (on truck)</td>
</tr>
<tr>
<td>Better quality unpruned sawlogs (with tight green knots)</td>
<td>80 - 110 (on truck)</td>
</tr>
<tr>
<td>Poorer quality sawlogs</td>
<td>40 - 50 (on truck)</td>
</tr>
<tr>
<td>Firewood grade logs</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Log Product</th>
<th>Approximate Price ($/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully air dried sawn clear heartwood</td>
<td>1,700 - 2,500 (retail)</td>
</tr>
<tr>
<td>Green sawn pruned clear heartwood timber</td>
<td>800 - 1,000</td>
</tr>
<tr>
<td>Air dried appearance and structural grades</td>
<td>1,000 or more</td>
</tr>
<tr>
<td>Green sawn appearance and structural grades</td>
<td>400 - 600 (retail)</td>
</tr>
<tr>
<td>Lower grade sawn timber used for outdoors, with bark encased, dead knots or large green knots</td>
<td>250 - 350 (trade)</td>
</tr>
<tr>
<td>Landscape grade garden sleepers, larger dimension, 2m lengths of often very rough timber</td>
<td>400 (retail)</td>
</tr>
</tbody>
</table>

**The Future of Cypress**

Special species, such as Cypress, have often found niche markets. The demand for Cypress timber is increasing in Australia. One miller from western Victoria believes that due to the demise of the hardwood industry, Cypress will be a substitute for similar uses. Although currently only milling shelterbelt trees, there will be an increasing need for higher quality logs from the faster growing, well managed plantations. Although the Tasmania market is small compared to the mainland, the higher demand in the large mainland market may become more attractive for local growers when their cypress stands comes on stream in 15-20 years time. The relatively low log supply may push up the higher mainland log and timber prices. The price difference between mainland and Tasmanian products will offset the freight cost across Bass Strait.

Tree breeding programs are well advanced in New Zealand and particularly breeding other cypress species with *C. lusitanica* and *C. macrocarpa*, to produce more canker resistance clones and trees with better form. Peter Feast of ‘Mimos Farm Trees’ Nursery in Mount Gambier, South Australia (who...
supplied the seedlings for this stand) now produces his own seed from his own seed orchard, established with cutting material of improved provenances and cross-breeds imported from New Zealand.

Currently some of the newer and available improved cloned cultivars from ‘Mimosa Farm Trees’ (with very high canker resistance) are:-

1. **Cupressocyparis ovensis** (hybrid of *Cupressus lusitanica* × *Chamaecyparis nootkatensis*); which has no canker and showing best growth and form;
2. *Cupressocyparis leylandii* “Ferndown” (hybrid of *Cupressus macrocarpa* × *Chamaecyparis nootkatensis* and 
3. *Cupressocyparis leylandii* “Leighton Green” (hybrid of *Cupressus macrocarpa* × *Chamaecyparis nootkatensis*).

*Cupressocyparis ovensis* is reported to be free of canker and showing best growth and form in trials undertaken by the Department of Primary Industries and Resources, South Australia.
Farm Forestry Project Demonstration Site

INTEGRATED FARM FORESTRY PROJECT
'BONDE PASTORAL'

- PRIVATE FORESTS TASMANIA
  Integrated Farm Forestry Program
  A program providing planning &
  funding assistance for farm
  forestry activities that:
  - Provide environmental benefit to the
    Property beyond wood production
  - Are integrated into overall property
    management
  - Add property diversification for
    sustainable productivity
  - The Bonde Pastoral Project plantings
    include Cupressus lusitanica (Cypress) and
    Eucalyptus nitens (Shining gum) to
    achieve the following environmental benefits:
    - Soil conservation
    - Water quality improvement through
      planting for stream protection
    - Long term Weed control
    - Crop & livestock shelter
    - Improved land use within its
      capability
  - This project is supported by the Nature
    Heritage Trust
  Contact: Private Forests Tasmania, Burnie
  (03) 6434 6285

Second lift pruning operation in
progress (August 2011).

Barry Graue admiring high pruned (up to
6.5m) trees along Mannings Jetty Road at
the western end of the site (August 2011).
This patch of trees shows extremely faster
growth, possibly due to the nearby meat
work waste pond outflow.

Values of Trees on Your Farm – Private Forests Tasmania
29/03/2012
First pruning lift (November 2008).

Second pruning lift (August 2011).
300x200 bandsaw beams

Macrocarpa 200x100 landscape sleepers

Cypress macrocarpa tongue and groove panels

Cypress macrocarpa tongue and groove flooring
TASMANIAN TREE FARMERS OF THE YEAR FOR 2011


Quality products on the hoof and the stump

BY HENRY CHAN AND ARTHUR LYONS

Brian and Jan Bonde of ‘Bonde Pastoral’ were the recipients of the AFG-SFM Forest Products Tasmanian Tree Farmers of the Year 2011 Award at the branch’s annual farm forestry dinner in Launceston in August. This year’s award was co-sponsored by SFM Forest Products and the AFG Tasmanian Branch.

Brian is a fourth generation farmer whose Danish forebears settled in the North Molton farming district in 1907. Brian and Jan are primary producers involved with livestock production, cropping and farm forestry. Formerly 364ha, the farm has shrunk to 215ha. The property now consists of two separate blocks, each about 107 hectares in size, situated amongst the undulating flats east of the Leven River and the Old Range. The region enjoys a temperate climate with warm summers and predominantly cool to cold winters. Bonde Pastoral is ideal for cattle/sheep grazing and cropping, as well as tree growing, with its 1200mm annual rainfall and rich basaltic soils.

About 20 years ago, Bonde Pastoral obtained both meat hygiene and abattoir licences and launched a subsidiary business, Clover Country Meats. The Bondes process their own livestock and market the products direct to customers, as well as private kill and contract butchering. A few years ago Brian and Jan developed their own premium brand ‘Wild Clover Lamb’ and now supply premium lamb and beef products to some of the best restaurants in Tasmania and the mainland, as well as local sales from their retail shop at the abattoir.

About 50ha of the property are used for peas and onions; managed in rotation with pasture/graing paddocks. The cropping area is supplemented with a winter fodder crop of rape brassica for fattening lambs and calves through the winter months.

Forestry beginnings

In the late 1990s, the Bondes harvested about 25ha of native forest on the property, with the sale of mature E. globulus E. virgata logs providing extra cash to help fund the regeneration of 4.5ha back to native forest; and the conversion of the remaining cleared area into plantations.

They kept about 40ha of native forest on the whole property including streamside and dam buffers. This native forest occurs on the steeper slopes and around watercourses/dam catchments.

"Wood production from the remaining native forest and plantations will provide future medium to long term farm incomes," says Brian. "In November 2010, we began commercial thinning and careful harvesting of some of our plantation stands."
Since 1995 the Bonds have established several plantations with Eucalyptus radiata (white gum), Phoebe radiata (radiata pine) and Cupressus lusitanica (Mexican cypress). Details of the forest operations on the two blocks are shown in the tables below.

Brian and Jan are proud that the trees on the property provide environmental benefits such as shelter for livestock and crops, soil conservation (erosion control), wildlife habitat, water quality improvement (river and stream protection), as well as aesthetic landscape values.

In 2001, the Bonds received a grant from the Natural Heritage Trust, which partly funded the establishment of an Integrated Farm Forestry Key Demonstration Site planted with E. nitens and Cupressus lusitanica. The aim is to demonstrate and achieve the following environmental benefits beyond sustainable wood production:

- Soil conservation (erosion control);
- Water quality management through plantings for stream protection;
- Long term weed control;
- Shelter for livestock and crops; and
- Improved biodiversity potential.

Forestry activities to date:

<table>
<thead>
<tr>
<th>Western Block</th>
<th>Area (ha)</th>
<th>Forestry activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native forest</td>
<td>37.2</td>
<td>Native forest and regrowth remain after some native forest areas were converted (together with some less productive ex-farm land) to plantations. Now managed primarily for biodiversity, soil conservation, environmental benefits and long term wood production.</td>
</tr>
<tr>
<td><em>P. radiata</em></td>
<td>13.9</td>
<td>Planted in 1999. Pruned and certified with Pruned Stand Certification. Thinned to waste following pruning due to unfavourable stumpages. To be grown on to 28-28 years to maximise cleardwood return.</td>
</tr>
<tr>
<td><em>E. nitens</em></td>
<td>6.7</td>
<td>Planted in 2000. Clearfelled harvesting of this pulpwood stand commenced in November 2010. About 2,400t has been harvested netting about 1,800t of export woodchip logs (plus a small amount of preservation material). This is equivalent to about 500m³/ha — good volume growth for 11yo trees. Due to unfavourable market prices, harvesting was temporarily halted in April 2011, and will resume when prices improve.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eastern Block</th>
<th>Area (ha)</th>
<th>Forestry activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native forest</td>
<td>8.1</td>
<td>The primary focus is biodiversity, soil conservation and environmental benefits.</td>
</tr>
<tr>
<td><em>C. lusitanica</em></td>
<td>2.1</td>
<td>Planted in 2001. Managed for high premium clearwood. Form pruning and first lift pruning completed. Second lift pruning is scheduled for winter 2011 (to reduce canker infection). Third lift prune due in another 2-3 years. Due to the site being less productive land, small patches of this stand may require a fourth lift prune. Following completion of pruning, thinning will allow the pruned trees to accumulate maximum clearwood growth. The rotation length is expected to be 36-40 years — aiming at the premium furniture, panel and decorative timber markets.</td>
</tr>
<tr>
<td><em>E. nitens</em></td>
<td>4.4</td>
<td>Planted in 2001. Thinned in 2010; producing about 60m³/ha of pulp logs. To be grown on for 3-4 years and left for sawlog/pulpwood and replanted.</td>
</tr>
<tr>
<td><em>E. nitens</em></td>
<td>0.3</td>
<td>Planted in 1995. Clearfelled harvested in 2010 and to be replanted.</td>
</tr>
</tbody>
</table>
Excellent shelterbelts provide important shelter for 'Bonde Pastoral' cattle during the cold, wet and windy months.

Harnessing Eucalyptus plantations diversifies farm income and land use.

First harvest of Eucalyptus plantations took advantage of favorable market prices.

Commercially thinned Eucalyptus stand left for a few years so it can generate a proportion of higher value savings at harvest.

Developing a plan

In 2000, with the assistance of Private Forests Tasmania, the Bondes developed a forest management plan.

"This allows us to streamline our forestry activities," points out Elian, "resulting in better planning, management and scheduling of the forestry operations in both the native forest and the plantations."

With the assistance of Crookwell Natural Resource Management and funding from the Natural Heritage Trust, the Bondes in 2004 developed their Integrated Whole Farm Plan. This plan outlines current commitments, future strategies and business directions. The plan also emphasizes the important role of their forest management plan.

Native forests, plantations and trees on the property are managed for biodiversity, wildlife habitat, environmental benefits (erosion control, shelter for livestock and crops, and water quality improvement) — as well as potential wood production. Elian knows that the shelter benefits for pasture production and livestock condition are substantial and have been proven many times over.

The forests and plantations are fairly safe from the threat of fire as the property is surrounded by watercourses, and the neighbouring farms and high rainfall ensure that adjacent pasture and crops have very low fire risk.

The Bondes are keen to share their knowledge with others and the Demonstration Site has been visited by local and overseas foresters and researchers. In May 2011, it was a key tour stop for a group from China and New Zealand. A farm forestry field day is planned for late 2011.

Henry Chan and Arthur Lyons are professional foresters with Private Forests Tasmania and work closely with private landholders to assist with sustainable forest management and integrated plantation expansion and management.

Cupressus lusitanica demonstration woodlot managed on time and to quality standards — reflective of all "Bonde Pastoral" farm forestry enterprises.
Farm Forestry Toolbox

Version 5.2

The Farm Forestry Toolbox began life in 1996 as a simple collection of computer programs relevant to Tasmania. Today it has been developed to assist farmers, forest managers and forestry consultants across Australia manage their plantations.

A range of features has been updated and improved to assist forest managers better map, measure and manage their forests as either individual stands of trees or forests and plantations across whole properties.

The new version assists users with:
- surveying and mapping;
- forest inventory;
- estimating plantation growth for a wide range of species;
- managing plantations for different scenarios;
- financial analysis;
- diagnosis of forest pests and diseases; and
- carbon accounting.

The new version also caters for tree species planted in tropical and sub-tropical Australia.

Users can now explore management options to maximise wood production and carbon storage, and assess the suitability of investment in carbon credits. Users can also readily determine the break-even point of a project for any individual cost input.

The new version has been developed by Private Forests Tasmania and Adrian Goodwin, Proprietor, Bushlogic.

If you need more information, or wish to register to download a copy of the Farm Forestry Tool Box V5.2, please see: http://www.privateforests.tas.gov.au/products/farm_forestry_toolbox
For other enquiries contact, admin@privateforests.tas.gov.au

This project is supported by funding from the Australian Government Department of Agriculture, Fisheries and Forestry under its Forest Industries Climate Change Research Fund program.
Private Forests Tasmania

Hobart  6233 7640
Launceston  6336 5300
Burnie  6434 7280

PRIVATE FORESTS TASMANIA assists landowners plan and sustainably manage their native forests, plantations and trees in the landscape.

Trees on your farm in Tasmania provide a valuable timber resource. They also enhance agricultural production, conservation and landscape values.

Private forests make an important contribution to the total timber harvested each year in Tasmania.

PRIVATE FORESTS TASMANIA has three regional offices with qualified staff ready to discuss your needs.

Contact us at one of our offices on the numbers above.