

## **Residue Solutions Project**

### **Forecast Residues**

#### **Forestry Tasmania and Private Forests Tasmania**

**January 2014**

### **Background**

Forecast residue flows from forest harvesting and timber processing have been estimated by Forestry Tasmania (for publicly managed forests) and Private Forest Tasmania (for privately managed forests). These forecast residues are a preliminary part of the Residue Solutions Project, and form an input to subsequent parts of the Project.

The basis of these forest harvesting and timber processing residue estimates are the management strategies adopted in the forest, leading to forecast woodflow of various forest products.

The forest management strategy for publicly managed forests is currently based on the Tasmanian Forest Agreement signed in November 2012, and subsequent legislation enacted in 2013 – the Tasmanian Forests Agreement Act and the Forest Management Act. The methods employed by Forestry Tasmania to model woodflows from the publicly managed forest are well documented (Whiteley, 1999; Forestry Tasmania, 2007; Burgman and Robinson, 2012).

The privately managed forests have a widely dispersed ownership structure; the majority of the native forest component distributed across more than 7 500 independent owned properties within the state, the privately managed plantations less dispersed with several large companies managing the bulk of the resource, though pending forest sales at the time of writing may further fragment the hardwood plantation resource ownership. This widely dispersed ownership leads directly to a highly variable intent to harvest, further complicated by a diverse range of views on the timing of harvest even where harvest is likely. As such, arriving at a definitive forest management strategy for much of these private managed forests is difficult, and nearly impossible in relation to the native forest resource which is primarily outside of company management.

Woodflows for the private company managed plantation resource were modelled on an ongoing harvest and replant strategy, assuming a market will be available for all harvested wood, and it was assumed that the bulk of the private independent managed plantation resource would be captured by this same market. In terms of the intent to replant following harvest of the current standing plantations there is concern that the current negative sentiment towards forest-based managed investment schemes (MIS) might have a detrimental impact. A large proportion of private independent managed hardwood plantation establishment was driven by MIS investment and to reflect the uncertainty around future MIS investment only 50% of these plantations were replanted in the woodflow model. Given the private independent managed hardwood plantations are only a small resource this replanting strategy has little impact on the overall woodflows. Similarly, it was

assumed that all private company managed hardwood plantation leased on third party independent owned land were essentially MIS driven plantings, and in the absence of positive sentiment to future MIS they too might not be replanted. This latter resource is significant and to provide some understanding of the impact such a replanting strategy might have on woodflows, the two extreme scenarios of replanting were modelled for private company managed hardwood plantations as follows:

1. Full Replanting: After the initial harvest in the model, every hardwood plantation stand currently under company management was replanted; and,
2. Partial Replanting: After the initial harvest in the model, no hardwood plantation was replanted where it was managed by a company under a leasehold arrangement on externally owned private independent land.

To alleviate some of the uncertainty around the landowner intent to harvest the private independent managed native forest resource, a forest area discount model relating harvest intent to total forested area on each property was developed based on data from a recent survey of native forest harvest intent on private freehold (Dare & Eversole, 2013). However, this model could not address the issue of the uncertainty of harvest timing and rather than attempt to second-guess the likely levels of harvest over the next 30 years, it was determined that a 'sustainable yield' model would be employed to provide an indication of what harvest levels should be to maintain a long term industry from this resource. Based on an updated version of the forest resource model employed in Private Forest Tasmania's 2012 strategic modelling work (Wilson, 2012), the available<sup>1</sup> native forest resource was harvested and reforested repeatedly over an extensive period of time (360 years) to allow several rotations of the slower growing dry eucalypt forests to pass, and the average annual sustainable yield determined. The long term model assumed an 'opportunistic' harvesting scenario, such that as soon as a forest area reached a commercial volume, and was of an age at which viable seed or regenerated trees were available to produce a future crop to meet Forest Practices requirements, the forest was harvested and regenerated.

## Definitions

Harvesting Residue is either:

- Pulpwood – low quality logs suitable for woodchipping to make pulp and paper; or
- Other Stemwood – currently non-merchantable stemwood, including the stump, and usually left in the forest.

Processing Residue is either from Sawlog or Peeler log – offcuts, woodchips and sawdust from timber processing.

---

<sup>1</sup> 'Available' refers to forest that has been modelled to be: outside legal reserves and covenants on private freehold land; of sufficient age and productivity to be sustainably harvested and regenerated; and not have legal harvesting restrictions imposed by the Forest Practices Code.

## Assumptions

Key assumptions associated with these forecast residue flows are presented below, initially general assumptions for both public and private forests, then specific assumptions for the publicly managed forests, followed by specific assumptions for the privately managed forests.

### General

1. Harvesting Residue estimates indicate potential gross supply from the forest, which may not necessarily be available, for various reasons, including contract commitments and actual recovery rates.
2. Harvesting Pulpwood Residue estimates include logs down to a minimum small end diameter (SED) of 8 cm.
3. Harvesting Residue estimates exclude limbwood, foliage and roots. However, expansion factors can be applied to the various stemwood estimates provided here to account for these excluded components if required.
4. Harvesting Pulpwood Residue estimates are pre-processing (ie, prior to being woodchipped).
5. Timber Processing Residue estimates are based on harvesting estimates of Sawlogs and Peeler logs, plus processing residue factors. Native Forest Sawlogs have a minimum SED of 30 cm, as do Hardwood Plantation Sawlogs which are also pruned. Native Forest Peeler logs have a minimum SED of 20 cm, as do Hardwood Plantation Peeler logs which are either pruned or unpruned. For each of the following forest type and log product combinations the percentage of harvested volume that become residues is:
  - a. 60% of Native Forest and Hardwood Plantation Sawlogs;
  - b. 50% of Softwood Plantation Sawlogs; and
  - c. 11% of Native Forest and Hardwood Plantation Peeler logs.

The underlying assumption for these estimates is that all Sawlogs and Peeler logs produced in the forest will be processed in Tasmania, hence yielding these timber processing residues.

6. King Island and Flinders Island have small areas of forest but were not modelled within this process.

Publicly managed forests - refers to all forest management by Forestry Tasmania, regardless of underlying land ownership

1. No estimates are provided for insignificant areas of non-Eucalypt Native Forest and Softwood Plantation.
2. Harvesting Other Stemwood Residue estimates comprise currently non-merchantable live and dead stemwood, including stumps, and downers (ie, stemwood lying on the ground) in native forest only.
3. Downers in native forest are included in the Harvesting Other Stemwood Residue estimate if their decay class from inventory plots is in the soundest (ie, least decayed) half of all decay classes.
4. Harvesting Other Stemwood Residue estimates for Eucalypt Native Forest assumes none of this residue is extracted from cable coupes, and only counts other coupes where this residue is at least 50 green metric tonnes per hectare (gmt/ha). Relatively small cable coupe landing size restricts ability to harvest residues, while a minimum amount of this residue is required to make the harvest economically viable.

5. Harvesting Other Stemwood Residue estimates for Eucalypt Native Forest assume discounts due to harvest type (because not all stems will be harvested, thus reducing the amount of this residue produced) and to retain Coarse Woody Debris (CWD) in the forest (again reducing the amount of this residue produced, as per the following matrix (discounts represent the amount left in the forest):

	Harvest Type		
	Aggregated Retention	Clearfell	Partial Harvesting
Harvest Type discount	20%	0%	50%
CWD discount	0%	30%	30%
Total discount	20%	30%	65%

6. Harvesting Other Stemwood Residue estimates for hardwood plantations were assumed to be 15% of the total log products (including pulpwood) from thinning, and 5% of the total log products (including pulpwood) from clearfell.

Privately managed forests - refers to all forest management by private entities, whether they be companies or individuals and regardless of underlying land ownership, and being either:

(Private) Company Managed - refers to forest management, typically on a large-scale, by a single company, regardless of underlying land ownership; or

(Private) Independent Managed - refers to forest management, typically on a small-scale, directly by the owner of the land on which the trees are situated

1. No harvest is assumed from Company Managed Native Forests.
2. Harvesting Other Stemwood Residue estimates comprise currently non-merchantable live and dead stemwood, including stumps, and exclude downers (ie, stemwood lying on the ground).
3. Harvesting Other Stemwood Residue estimates for Independent Managed Native Forest were assumed to be 30% of the total harvesting volume (ie, Sawlog, Peeler and Pulpwood).
4. Hardwood plantation Pulpwood estimates are based on a fixed minimum harvest age of 15 for high and medium quality sites and 20 for low quality sites (greater where plantations were already older than minimum harvest age as at 2014), and as such may not reflect actual annual yields achievable, particularly within company managed resources where harvest age can be optimised on a site by site basis to maximise yield across an entire estate.
5. No solid wood products were modelled from the privately managed hardwood plantations. Harvesting Other Stemwood Residue estimates for hardwood plantations were assumed to be 5% of the Harvesting Pulpwood yield.
6. Softwood plantation Harvesting Pulpwood estimates are based on one or two thinning events and a clearfall event at age 30 (greater where plantations were already older than minimum harvest age as at 2014), and as such may not reflect actual annual yields achievable, particularly within company managed estates where harvest age can be optimised on a site by site basis to maximise yield across an estate.
7. Harvesting Other Stemwood Residue estimates for softwood plantation assumes 20% for first thinning, 10% for 2<sup>nd</sup> thinning and 5% for clearfell, all as a percentage of total harvesting volume including pulpwood.

## Tables

The following tables present the forecast residue flow estimates annually in thousand green metric tonnes per year ('000 gmt/y) by:

- Forest Management Type;
- Forest Type;
- FT Supply Zone (see map in Appendix 1);
- Product; and
- Time Period.

Forest Management Types are either:

- Publicly Managed Forest;
- (Private) Company Managed Forest; or
- (Private) Independent Managed Forest.

Forest Types reported are classified as either:

- Eucalypt Native Forest;
- Non-eucalypt Native Forest;
- Hardwood Plantations; or
- Softwood Plantations.

Products reported are: Time periods reported are:

- 2014/15-2018/19 – first five years.
- 2019/20-2026/27 – next eight years, to 2026/27, which is a key date in the Tasmanian Forest Agreement.
- 2027/28-2043/44 – final seventeen years, to give a total thirty years reporting period.

The first table provides a statewide summary regardless of Forest Management Type or Forest Type, and includes the partial replanting scenario for private company managed hardwood plantations.

**Table 1: Statewide Summary – all Forest Management Types and all Forest Types, including the partial replanting scenario for private company managed hardwood plantations ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	705	435	272
	Other Stemwood	195	121	73
	Processing Residue			
	from Sawlog	14	11	16
	from Peeler log	9	8	7
Murchison East	Harvesting Residue			
	Pulpwood	1405	1104	878
	Other Stemwood	96	101	69
	Processing Residue			
	from Sawlog	59	53	49
	from Peeler log	2	4	3
Mersey	Harvesting Residue			
	Pulpwood	799	1012	481
	Other Stemwood	101	133	75
	Processing Residue			
	from Sawlog	45	51	58
	from Peeler log	2	2	4
Bass North	Harvesting Residue			
	Pulpwood	1009	1246	593
	Other Stemwood	131	122	86
	Processing Residue			
	from Sawlog	104	99	143
	from Peeler log	4	5	14
Bass South	Harvesting Residue			
	Pulpwood	246	438	247
	Other Stemwood	50	55	39
	Processing Residue			
	from Sawlog	51	53	57
	from Peeler log	3	3	6
Derwent East	Harvesting Residue			
	Pulpwood	264	819	371
	Other Stemwood	66	90	59
	Processing Residue			
	from Sawlog	21	37	14
	from Peeler log	1	1	1
Derwent Central	Harvesting Residue			
	Pulpwood	316	404	216
	Other Stemwood	110	98	56
	Processing Residue			
	from Sawlog	28	24	22
	from Peeler log	1	1	2
Derwent West	Harvesting Residue			
	Pulpwood	333	337	232
	Other Stemwood	97	95	63
	Processing Residue			
	from Sawlog	66	68	60
	from Peeler log	4	4	7
Huon	Harvesting Residue			
	Pulpwood	393	367	224
	Other Stemwood	136	138	109
	Processing Residue			
	from Sawlog	26	30	30
	from Peeler log	9	8	12
Statewide Total	Harvesting Residue			
	Pulpwood	5470	6163	3513
	Other Stemwood	982	954	630
	Processing Residue			
	from Sawlog	413	424	450
	from Peeler log	36	37	57

**Table 2: Publicly Managed Forest – Eucalypt Native Forest ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	206	111	69
	Other Stemwood	163	99	55
	Processing Residue			
	from Sawlog	10	8	9
	from Peeler log	8	5	3
Murchison East	Harvesting Residue			
	Pulpwood	18	69	19
	Other Stemwood	7	32	9
	Processing Residue			
	from Sawlog	1	3	2
	from Peeler log	1	3	1
Mersey	Harvesting Residue			
	Pulpwood	44	59	42
	Other Stemwood	25	38	17
	Processing Residue			
	from Sawlog	4	4	2
	from Peeler log	1	1	1
Bass North	Harvesting Residue			
	Pulpwood	164	113	76
	Other Stemwood	54	32	18
	Processing Residue			
	from Sawlog	10	8	3
	from Peeler log	2	1	1
Bass South	Harvesting Residue			
	Pulpwood	61	97	76
	Other Stemwood	21	16	10
	Processing Residue			
	from Sawlog	3	5	3
	from Peeler log	1	1	1
Derwent East	Harvesting Residue			
	Pulpwood	34	58	80
	Other Stemwood	24	22	16
	Processing Residue			
	from Sawlog	2	6	8
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	138	124	52
	Other Stemwood	76	59	22
	Processing Residue			
	from Sawlog	17	12	4
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	120	94	80
	Other Stemwood	68	61	39
	Processing Residue			
	from Sawlog	14	14	11
	from Peeler log	3	3	1
Huon	Harvesting Residue			
	Pulpwood	131	147	104
	Other Stemwood	111	117	91
	Processing Residue			
	from Sawlog	21	23	19
	from Peeler log	6	7	6
Statewide Total	Harvesting Residue			
	Pulpwood	916	872	598
	Other Stemwood	549	476	277
	Processing Residue			
	from Sawlog	82	83	61
	from Peeler log	22	21	14

**Table 3: Publicly Managed Forest – Hardwood Plantation ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	43	45	34
	Other Stemwood	5	4	5
	Processing Residue			
	from Sawlog	0	0	4
	from Peeler log	1	3	4
Murchison East	Harvesting Residue			
	Pulpwood	31	15	13
	Other Stemwood	4	2	2
	Processing Residue			
	from Sawlog	0	0	2
	from Peeler log	1	1	2
Mersey	Harvesting Residue			
	Pulpwood	24	14	16
	Other Stemwood	3	2	3
	Processing Residue			
	from Sawlog	0	0	5
	from Peeler log	1	1	3
Bass North	Harvesting Residue			
	Pulpwood	121	72	74
	Other Stemwood	14	7	15
	Processing Residue			
	from Sawlog	0	0	17
	from Peeler log	2	4	13
Bass South	Harvesting Residue			
	Pulpwood	44	25	33
	Other Stemwood	5	3	6
	Processing Residue			
	from Sawlog	0	0	6
	from Peeler log	2	2	5
Derwent East	Harvesting Residue			
	Pulpwood	23	11	11
	Other Stemwood	2	1	2
	Processing Residue			
	from Sawlog	0	0	2
	from Peeler log	1	1	1
Derwent Central	Harvesting Residue			
	Pulpwood	5	6	8
	Other Stemwood	0	1	2
	Processing Residue			
	from Sawlog	0	0	2
	from Peeler log	0	0	1
Derwent West	Harvesting Residue			
	Pulpwood	37	21	27
	Other Stemwood	4	3	5
	Processing Residue			
	from Sawlog	0	0	8
	from Peeler log	1	1	6
Huon	Harvesting Residue			
	Pulpwood	74	42	35
	Other Stemwood	7	4	6
	Processing Residue			
	from Sawlog	0	0	7
	from Peeler log	3	1	6
Statewide Total	Harvesting Residue			
	Pulpwood	402	251	251
	Other Stemwood	44	27	46
	Processing Residue			
	from Sawlog	0	0	53
	from Peeler log	12	14	41



**Table 4a: (Private) Company Managed Forest – Hardwood Plantation ('000 gmt/y)  
– Full Replanting Scenario**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	429	256	188
	Other Stemwood	21	13	9
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	1204	901	792
	Other Stemwood	60	45	40
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	529	646	461
	Other Stemwood	26	32	23
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	550	728	425
	Other Stemwood	28	36	21
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	41	186	67
	Other Stemwood	2	9	3
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent East	Harvesting Residue			
	Pulpwood	69	633	317
	Other Stemwood	3	32	16
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	18	114	70
	Other Stemwood	1	6	4
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	49	71	35
	Other Stemwood	2	4	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	141	134	76
	Other Stemwood	7	7	4
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	3030	3669	2433
	Other Stemwood	152	183	122
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0

**Table 4b: (Private) Company Managed Forest – Hardwood Plantation ('000 gmt/y)  
– Partial Replanting Scenario**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	429	256	149
	Other Stemwood	21	13	7
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	1204	901	751
	Other Stemwood	60	45	38
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	529	646	252
	Other Stemwood	26	32	13
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	550	728	267
	Other Stemwood	28	36	13
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	41	186	46
	Other Stemwood	2	9	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent East	Harvesting Residue		0	0
	Pulpwood	69	633	158
	Other Stemwood	3	32	8
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	18	114	47
	Other Stemwood	1	6	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	49	71	25
	Other Stemwood	2	4	1
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	141	134	48
	Other Stemwood	7	7	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	3030	3669	1743
	Other Stemwood	152	183	87
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0

**Table 5: (Private) Company Managed Forest – Softwood Plantation ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	3	3	3
	Other Stemwood	1	1	1
	Processing Residue			
	from Sawlog	2	2	2
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	67	63	56
	Other Stemwood	13	12	11
	Processing Residue			
	from Sawlog	47	42	43
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	112	184	94
	Other Stemwood	24	37	21
	Processing Residue			
	from Sawlog	37	44	48
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	110	213	117
	Other Stemwood	21	29	25
	Processing Residue			
	from Sawlog	92	89	119
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	68	81	62
	Other Stemwood	14	17	12
	Processing Residue			
	from Sawlog	47	47	48
	from Peeler log	0	0	0
Derwent East	Harvesting Residue			
	Pulpwood	25	3	12
	Other Stemwood	4	3	1
	Processing Residue			
	from Sawlog	14	27	1
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	31	32	23
	Other Stemwood	5	5	4
	Processing Residue			
	from Sawlog	7	9	12
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	119	144	93
	Other Stemwood	20	25	16
	Processing Residue			
	from Sawlog	52	53	41
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	9	10	5
	Other Stemwood	2	2	1
	Processing Residue			
	from Sawlog	1	5	3
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	544	734	465
	Other Stemwood	102	131	92
	Processing Residue			
	from Sawlog	300	318	316
	from Peeler log	0	0	0

**Table 6: (Private) Independent Managed Forest – Eucalypt Native Forest ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	11	11	11
	Other Stemwood	4	4	4
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	20	20	20
	Other Stemwood	7	7	7
	Processing Residue			
	from Sawlog	1	1	1
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	69	69	69
	Other Stemwood	21	21	21
	Processing Residue			
	from Sawlog	3	3	3
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	37	37	37
	Other Stemwood	13	13	13
	Processing Residue			
	from Sawlog	1	1	1
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	24	24	24
	Other Stemwood	8	8	8
	Processing Residue			
	from Sawlog	1	1	1
	from Peeler log	0	0	0
Derwent East	Harvesting Residue			
	Pulpwood	108	108	108
	Other Stemwood	32	32	32
	Processing Residue			
	from Sawlog	3	3	3
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	85	85	85
	Other Stemwood	25	25	25
	Processing Residue			
	from Sawlog	3	3	3
	from Peeler log	1	1	1
Derwent West	Harvesting Residue			
	Pulpwood	7	7	7
	Other Stemwood	2	2	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	30	30	30
	Other Stemwood	9	9	9
	Processing Residue			
	from Sawlog	1	1	1
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	391	391	391
	Other Stemwood	121	121	121
	Processing Residue			
	from Sawlog	14	14	14
	from Peeler log	2	2	2

**Table 7: (Private) Independent Managed Forest – Non-Eucalypt Native Forest ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	3	3	3
	Other Stemwood	1	1	1
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	5	5	5
	Other Stemwood	2	2	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	1	1	1
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	2	2	2
	Other Stemwood	1	1	1
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	1	1	1
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent East	Harvesting Residue			
	Pulpwood	0	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	0	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	0	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	0	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	13	13	13
	Other Stemwood	4	4	4
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0

**Table 8: (Private) Independent Managed Forest – Hardwood Plantation ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	7	6	2
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	28	24	8
	Other Stemwood	1	1	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	13	23	6
	Other Stemwood	1	1	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	22	71	18
	Other Stemwood	1	4	1
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	5	23	4
	Other Stemwood	0	1	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent East	Harvesting Residue			
	Pulpwood	4	3	1
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	34	41	2
	Other Stemwood	2	2	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	0	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	5	4	1
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	118	194	43
	Other Stemwood	6	10	2
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0

**Table 9: (Private) Independent Managed Forest – Softwood Plantation ('000 gmt/y)**

FT Supply Zone	Product	2014/15-2018/19	2019/20-2026/27	2027/28-2043/44
Murchison West	Harvesting Residue			
	Pulpwood	2	1	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	1	0	0
	from Peeler log	0	0	0
Murchison East	Harvesting Residue			
	Pulpwood	33	7	5
	Other Stemwood	2	1	0
	Processing Residue			
	from Sawlog	10	7	2
	from Peeler log	0	0	0
Mersey	Harvesting Residue			
	Pulpwood	7	17	1
	Other Stemwood	1	1	0
	Processing Residue			
	from Sawlog	1	0	1
	from Peeler log	0	0	0
Bass North	Harvesting Residue			
	Pulpwood	4	9	2
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	2	0	2
	from Peeler log	0	0	0
Bass South	Harvesting Residue			
	Pulpwood	1	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Derwent East	Harvesting Residue			
	Pulpwood	2	3	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	1	0	0
	from Peeler log	0	0	0
Derwent Central	Harvesting Residue			
	Pulpwood	5	2	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	1	0	1
	from Peeler log	0	0	0
Derwent West	Harvesting Residue			
	Pulpwood	1	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	0	0	0
	from Peeler log	0	0	0
Huon	Harvesting Residue			
	Pulpwood	3	0	0
	Other Stemwood	0	0	0
	Processing Residue			
	from Sawlog	2	0	0
	from Peeler log	0	0	0
Statewide Total	Harvesting Residue			
	Pulpwood	57	40	9
	Other Stemwood	4	2	1
	Processing Residue			
	from Sawlog	17	9	6
	from Peeler log	0	0	0

**Literature Cited**

Burgman, M. and Robinson, A.P. (2012). Review of Tasmanian Forest Estate Wood Supply Scenarios. Final Report to the Independent Verification Group, Intergovernmental Agreement, Version 9.9, March 7, 2012, 93pp. Available at

<http://www.environment.gov.au/system/files/resources/eefde0e6-0f830486d0b0c3-8b1d25abc497/files/ivgwoodsupplyburgman.pdf>.

Dare, M. and Eversole, R. (2013). Forest owner intent: Harvesting Tasmania's non-industrial private forests. Private Forests Tasmania, Hobart, 67pp.

Forestry Tasmania (2007). Sustainable high quality eucalypt sawlog supply from Tasmanian State forest - Review No. 3. Forestry Tasmania, Hobart, 25pp.

Whiteley, S.B. (1999). Calculating the sustainable yield of Tasmania's State forests. *Tasforests* 11, December 1999: 23-34.

Wilson, J. (2012). Private forest resourcing model 2012: Where are the best locations for a hypothetical Tasmanian wood processing plant? Private Forests Tasmania, Hobart, 41pp.



Appendix 1: Map of FT Supply Zones

