



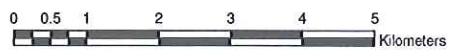
Map Sheets:  
 1:25000 Bellingen 9437-2N  
 1:100000 Dorrigo 9437  
 Scale: 1:100,000

North East Region - Urunga MA  
 Locality Map  
 Compartments 32, 33, 41, 49  
 Pine Creek State Forest



MAP FEATURES

- Subject Area
- Emergency Meeting Point (Safety Point)
- Helicopter Landing Point
- State Forest
- 1:25000 Map Sheet
- 1:100000 Map Sheet
- National Park Estate

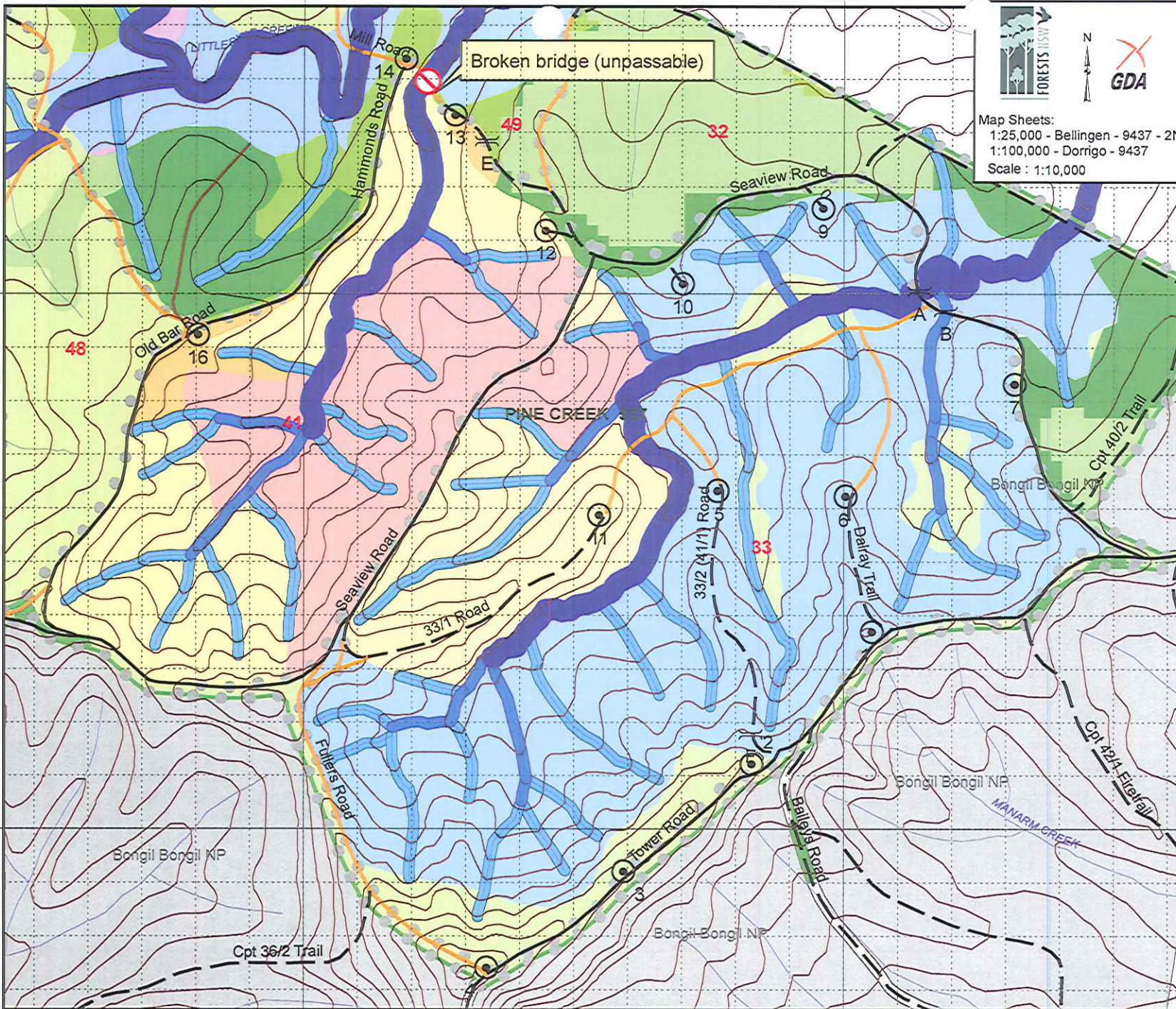



Prepared by... Bob Aspden  
 Date: 8/3/2011



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Map Sheets:  
 1:25,000 - Bellingen - 9437 - 2N  
 1:100,000 - Dorrigo - 9437  
 Scale : 1:10,000

North East Region - Urunga MA  
 Harvest Plan Operational Map  
 Compartments 32, 33, 41, 48 & 49  
 Pine Creek State Forest

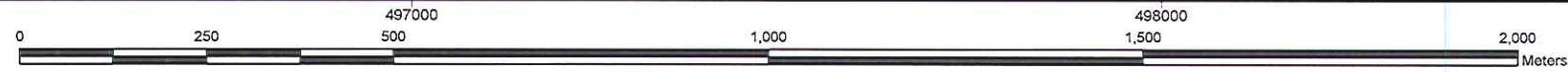
- MAP FEATURES**
- State Forest Boundary
  - Compartments Boundary
  - 1 Km Grid
  - 10 / 100 m Contour
  - Dump and/or Turnaround
  - Crossing
  - Drainage (LIC)

- ROADS**
- All Weather, Unsealed
  - Dry Weather, Unsealed
  - 4WD Track
  - Non Haulage Roads
  - Forwarder Track

- HARVESTING PRESCRIPTIONS**
- Plantation to be harvested 2012
  - Koala Management Zone 6: Not zoned - to be assessed in the field

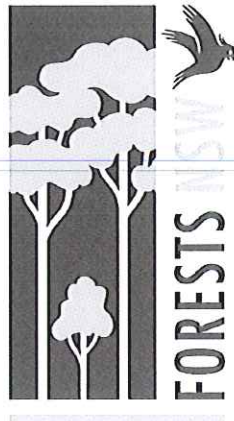
- HARVESTING EXCLUSIONS**
- Mixed species ingrowth: not to be harvested in 2012
  - Plantations not to be harvested in 2012
  - State Forest: Native Forest FMZ 4
  - Special Management Zone (FMZ 3A)
  - Koala Management Zones 4 & 5
  - Koala Management Zone 6 - deferred
  - National Park Estate

- RIPARIAN BUFFER ZONES**
- 10m either side (1st Order)
  - 10M either side (2nd Order)
  - 20m either side (3rd Order)
  - NO HARVESTING DISTURBANCE



Prepared by...Dean Kearney  
Date: 4/07/2012







## OPERATIONAL HARVESTING PLAN PLANTATION CLEARFELL

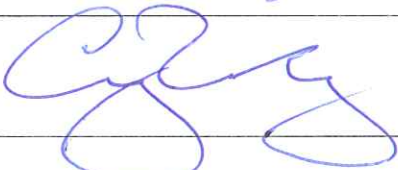
<b>Region</b>	North East
<b>Management Area</b>	Urunga
<b>State Forest</b>	Pine Creek
<b>Compartments</b>	32, 33, 41, 48 & 49
<b>Harvest plan No.</b>	HP_3728
<b>Harvest Plan Name</b>	U_32_33_41_48_49

### Plan Certification

Harvest planner		Date: 3/7/2012.
Bob Aspden		

Harvest planning Manager		Date: 3/7/2012
Steve Pickering		

Acting Regional Planning Manager		Date: 3/7/2012.
Dean Kearney		

Regional Manager		Date: 4/7/12
Craig Busby		

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# HARVESTING DETAILS

## 1. Area Identification

Region	North East
Management Area	Urunga
State Forest	Pine Creek
Compartment/s	32, 33, 41, 48 & 49

Cmpt	Gross Area (ha)	Net Area (ha)	Pricing Area	Op Type	Status - 2012
32	40	6	Urunga Costal	Clearfall	Deferred
33	125	100	Urunga Costal	Clearfall	Deferred
41	56	50	Urunga Costal	Clearfall	Available for harvest as shown on plan map
48	75	4	Urunga Costal	Clearfall	Deferred
49	99	22	Urunga Costal	Clearfall	Deferred

## 2. Description of Proposal

### 2.1 Integrated harvesting of Plantation Areas

Clearfelling of Flooded Gum (*E.grandis*) plantation and Blackbutt (*E.pilularis*) plantation.

### 2.2 Other

	Proposed	Details
Roadworks	Yes	Roadworks Plan (attached)
Post harvest Burning	Yes	Plan to be prepared separately
Re-establishment (2R)	No	Plan to be prepared separately

## 3. Safety Considerations

See attached Hazard Assessment and Medical Emergency Evacuation Plan.

## 4. Plantation Condition and Silvicultural Prescription

### 4.1 Plantation Description

- **Age Class:** 1967, 1969, 1972 & 1973  
**Species/Area:** Flooded Gum ~ 180 ha  
Blackbutt ~ 4ha
- **Stand Health:** Flooded Gum – Varying quality from poor to very poor  
Blackbutt – Medium/Good Quality

### 4.2 Silvicultural History and Product Types

Most of the operational area has been thinned; however, a some proportion of the harvest area has not been thinned and these areas are generally made up of smaller trees, and ingrowth of non-plantation native species. Overall the operation will produce a high proportion low grade logs with some veneer and sawlog as well as poles from Blackbutt stands.



#### **4.3 Silvicultural Objectives and Prescriptions**

- It is proposed to clearfall the plantation in stages with some areas retained as koala habitat.
- Clearfall areas should be re-established within 12-18 months.
- Koala habitat areas are defined in section 6 below.

### **5. Legal Conditions**

The area to be harvested is an authorised plantation under the provisions of the Plantations and Reafforestation Act (1999) (Authorisation no. GR0723).

As such, the operation must comply with:

- Plantations and Reafforestation Act (1999)
- Plantations and Reafforestation (Code) Regulation (2001).

Legislation relating to the operations on State forests & Other Crown-Timber Lands is detailed in FNSW Forest Practices Codes. In addition this operation must specifically comply with:

- Forests NSW Forest Practices Code part 1 (Timber Harvesting in Forest NSW Plantations 2006)
- Forests NSW Forest Practices Code part 4, Forest Roads and Fire Trails (February 1999)
- Licence Conditions issued by Forests NSW under the Forestry Act (1916)

### **6. Special Conditions**

#### **6.1 Non-harvest areas**

The Operational Map indicates the non-harvest areas in the compartment, as detailed in the legend.

- Use of Dumps 2,3,4,15,16 and forwarding to these dumps is approved (see also section 7.1 & 13.1)
- Other Harvesting disturbance is not permitted in non-harvest areas without contacting the Harvest Planner to obtain the required Regional approval.
- Harvesting may take place within buffer zones of 1<sup>st</sup> and 2<sup>nd</sup> order drainage lines (as indicated on the operational map) and un-mapped drainage lines in accordance with the conditions outlined in section 10.2.
- No harvesting or other disturbance may take place within the 20m buffer on 3<sup>rd</sup> order (or greater) drainage lines, wetlands or rivers. No machinery may enter the buffer (except were crossing a drainage line with prior SFO authorisation) and no trees are to be removed.

#### **6.2 Mixed Species Forest Ingrowth Areas**

Within the compartments there are some stands that contain understocked plantation with substantial mixed species ingrowth. These areas are deferred from harvesting in 2012. Any future harvesting will be modified selective harvesting taking into consideration the value of these areas as koala habitat. The assessment and prescriptions for this harvesting will be in accordance with the Pine Creek Koala Management Plan.

#### **6.3 FMZ & KMZ**

- Refer to section 7, which details specific management & allowable activities in these zones.
- Where there is uncertainty as to the location of any critical boundary contact the Planning unit for clarification.

#### **6.4 Habitat Trees**

- Any habitat trees (hollow bearing trees >40cm DBH) that occur within the plantation are to be retained in accordance with Section 23 of the P & R Code.

## 6.5 Boundaries

- For boundary locations refer to the operational map.
- Where there is uncertainty as to the location of any critical boundary contact the Planning unit for clarification.
- Survey must be undertaken by a suitably qualified person where there is a legal boundary that is uncertain.

### **Private Property**

Private Property adjoins the plantation on the northern boundary in compartment 32 & 49. The boundary is generally fenced.

- The harvesting must not impact on private property.
- Any damage to a fence must be immediately repaired by the contractor

### **National park**

National Park adjoins the harvest area on the southern and eastern boundary.

- Harvesting must not impact upon the National Park
- The National Park (NP) boundary is offset 20m from the centre line of boundary roads including Seaview, Tower and Fullers roads (see Operational Map).
- The harvesting must not impact on the NP side of the boundary road.

## 6.6 Noise

One residence to the east of compartment 32 may be affected by noise. Mitigative measures to lessen the impact on this residences may apply if considered necessary (as determined by the SFO). These measures are to be determined on a site specific basis by the SFO and should be discussed with the harvesting forester. Measures may include;

- Liaising with neighbours regarding noise issues.
- Changes to the activity that would reduce the noise impact or disturbance.
- Restricting hours of operation (e.g. 6am to Sunset)

## 6.7 Haulage Considerations

Haulage will access the Pacific Highway via, Seaview Road, Tower Road, Valery Road and Mailmans Track. The forest roads along the haulage route must be closed to the public during use by B\_doubles. This haulage route can only be used after obtaining a permit and receiving an induction from FNSW. **Note: members of the public, FNSW and NPWS staff may obtain permits to use this haulage route.**

- B-double configuration trucks are required to travel at speeds not exceeding 30km/hr through the sections of Bongil Bongil National Park on the haulage route (this includes sections of Tower Road and Mailmans Track).
- B-double configuration trucks are required to travel at 40km/h on Valery Road. All trucks using Valery Road and other public roads must proceed with due caution and be courteous to other road users.

## 6.8 Public Recreational Use

Areas adjacent to the harvesting area and within the vicinity of the harvest area are frequently used by the public for recreation. Seaview Road and Tower Road are frequently used by members of the public. Valery Trails Equestrian Centre sometimes ride through the area. Harvesting contractors must conduct a risk assessment prior to harvest and develop safe working procedures to manage the risk associated with the presence of public recreational users.

# 7. Forest Management Zones & Koala Management Zones

## 7.1 Forest Management Zones

The compartments include the following FMZs as indicated on the operational map:



**FMZ 3A (Special Management – Rainforest & old growth)**

- Excluded from all forestry activities except haulage access.

**FMZ 5 (Native Species Plantation)**

- Available for harvesting in this operation
- Areas shown as yellow on the operational map are available for harvest
- Other areas of plantation are not available for harvest except with specific Regional Manager approval

**FMZ 4 (General Management Native Forest)**

- Not available for harvest.
- Forwarder access is permitted through native forest using existing forwarder tracks to access Dumps 2, 3, 4, 15 and 16. Disturbance within native forests must be minimised and forwarder tracks must be drained as per Section 14.

**7.2 Koala Management Zones**

The compartments include the following Koala management Zones (KMZs) as indicated on the operational map:

**KMZ 1 – (Plantation Wood Production Emphasis Zone).**

- Hardwood plantations are to be harvested under the conditions outlined in this plan (See also section 6.2 regarding native forest ingrowth areas)
- Within this zone: *Individual Koalas shall be protected from tree felling operations wherever detected. A tree will not be felled or damaged while a koala is known to be in the tree. (PCKMP 6.2.1.1 (b))*

**KMZ 4 & 5 (Interim protection & koala emphasis zone)**

- These areas are excluded from harvesting activities. Where these exclusion zones adjoin the harvest area – the boundary is to be marked by the SFO.
- Haulage access is permitted through KMZ 4/5 along Dump 9, 10 and 12 roads. Forwarder access is permitted through KMZ 4/5 to Dump 12 & 16. Disturbance within KMZ 4/5 must be minimised and forwarder tracks must be drained as per Section 14.
- **No other harvesting or other forestry activities are permitted in this area.**

**Koala Management Zone 6 (Type Not Zoned)**

- Areas within the authorised plantation boundary are available for harvest if determined to be plantation and determined not to be rainforest as per the Forests NSW Forest Practices Circular 2005/02.
- Only plantation species may be harvested - all Tallowood, Grey Gum and non-plantation Blue Gum species are to be retained. These areas will be considered for rehabilitation as per the Koala Management Plan (2000).

**8. Cultural Heritage**

**8.1 Aboriginal Cultural Heritage**

No special conditions apply

**8.2 Non Aboriginal Cultural Heritage**

No special conditions apply



**9. Soils and Water**

Standard conditions of the Plantations and Reafforestation (Code) Regulation (2001) apply.

**10. Drainage features**

**10.1 Drainage feature protection**

- The Operational Map indicates known mapped drainage features and widths of protective measures.
- (note: some of the drainage features indicated on the Operational Map with filter strips may, at the time of marking, be determined as depressions).
- The minimum buffer zone width for each side of drainage features is shown below.

Stream Order	Buffer Zones each side of drainage feature (Haz Class 2)
Depression	5
Unmapped drainage lines	10
1st order	10
2nd order	10
3 <sup>rd</sup> order	20
4 <sup>th</sup> order or greater	20

**10.2 Operational Conditions For Drainage Features**

- Harvesting within buffer zones must comply with conditions 16, 62-63 of the Plantations and Reafforestation (Code) Regulation 2001 (see attached).
- No harvesting is permitted within the buffer zone of a wetland or river (3<sup>rd</sup> order or greater drainage line)
- Harvesting within the buffer zone of a 1<sup>st</sup> and 2<sup>nd</sup> order drainage line can only occur when:
  - The person carrying out the harvesting operation is satisfied that the top 200mm of soil is dry enough to allow operations without risk of soil erosion to the edge of the drainage feature.
- **No harvesting machinery is permitted to enter the 5m zone (area immediately surrounding either side of all drainage lines) for the purposes of harvesting. Harvesting operations must use “reach in” techniques to harvest this area.**

### Tree Marking Conditions and Code

- All exclusion zone and buffer zone boundaries must be marked in the field - except where specified forestry activities will not come within 50 metres of such boundaries. Where thick or impenetrable understorey obstructs marking UHF radio communication with operators may be used to indicate filter strips and boundaries. The SFO must document and justify such situations as it becomes apparent during compartment mark-up

**STANDARD MARKINGS/SYMBOLS:** Markings/Symbols that deliver key requirements on a state wide basis

Description	Symbol
Compartment boundary (Where not defined by clear features eg. Road, trail, creek)	"O" or Yellow tape
Exclusion zone (Line not to be crossed or disturbed by fallers or harvesting machinery at any time)	Three horizontal lines / rings OR Blue tape
Edge of net harvest area (eg unmerchantable) Retained trees and critical boundaries to be marked within 30m beyond the boundary Tree heads may fall across the line, provided they comply with boundary and tree retention rules (eg 5m debris)	"⊙"
Buffer Zone Areas where machinery is not permitted but there may be trees to be felled	Two horizontal lines / rings (indicate distance if required)
Drainage depression buffer strip	Not marked
Extraction System, OR Road/Track line	"I" or white tape
Dump site (with optional dump number reference)	"D" or red tape
Approved crossing site	"↕"
Slope angle indication (commences here)	eg "25°"
Individual tree	"•" or dots
Directional felling mark	"←" over "•"
Retained trees not to be removed or damaged (eg grower)	One horizontal line or ring
Cancellation Mark (Mark to formally cancel previous marks)	"X"

### 11. Roads and Crossings

- There are a number of non-haulage roads as indicated on the operational map that are not to be used by haulage traffic. They may be used with SFO approval for snigging or extraction provided they are drained to the appropriate specifications. They may be used for vehicular access where they have been assessed by the SFO prior to use, and are in a stable condition unlikely to cause environmental harm. (See Regional Policy No. 6 – Use of Non-Haulage Roads in Harvest Areas).
- Harvesting machinery may cross drainage lines at authorised crossings as per conditions 37-41 the Plantations and Reafforestation (Code) Regulation 2001. The SFO must give authorisation prior to crossing drainage lines.
- Machinery may cross drainage depressions and drainage lines if the crossing point is shallow and dry, surrounding soil is dry, drains or other measures are used to prevent water from approaches entering the drainage line in the event of wet weather, and no earthworks are required to enable the machinery to cross the drainage line.
- Crossings must be drained using drainage structures within 5-30m either side of the crossing
- Machinery may cross drainage lines and depressions that occur on extraction tracks by using slash crossings. Slash crossings are **Temporary Crossings** and must be removed within 5 days, and the approaches must be closed and cross-drained.
- Wetlands must not be crossed under any circumstances.

Road Maintenance/Road Construction and Road re-opening – See Roadworks Plan



## 12. Log Dumps

### 12.1 Location

- Log dumps and landings that require construction must be located outside drainage line buffer zones and areas of native vegetation (except where dumps are indicated on the Operational Map – these dumps have been approved for use).
- Log stockpile areas within native forest areas must be approved by the Regional Manager prior to establishment and should be located so as to minimise disturbance to understorey elements (except where indicated on the Operational Map - these dumps have been approved for use).
- Log stockpile sites (no construction required) are permitted along all sections of road within the plantation area unless marked as 'No Loading Permitted' zones on the Harvest Plan Operational Map.

### 12.2 Treatment

- Conditions 60-61 of the P & R Code, and 17.2 – 17.4 of the Forest Practices Code (FPC) 2005 must apply.
- Debris accumulated during processing at log dumps and landings must be located outside the boundary of buffer zones. Even distribution of slash and debris across running tracks is required. This will alleviate ground compaction and reduce exposure of soil to erosion and run-off.
- If any area used as a log dump or landing for harvesting operations ceases to be so used for more than one week, measures to minimise soil erosion must be put in place.

## 13. Extraction Tracks

### 13.1 Conditions 37 to 45 of the P & R Code (Plantation & Reafforestation Code, and 9.1 - 9.4 and 14.1 - 14.4 of the FPC (Forest Practices Code 2005).

### 13.2 Walkover extraction:

- Special attention must be paid to the placement of slash over ground area of any concentrated machinery movement. Such areas will include the exits of extraction tracks onto roads, at the intersection of running tracks in the harvest area and at log landings.

### 13.3 Extraction track drainage:

Soil erosion from tracks should be minimised by:

- Retaining groundcover and using slash and leaf litter. Slash should be placed evenly across the track to divert water.
- Using natural cross-fall drainage.
- Drainage structures must be constructed if concentrated water flow occurs for distances exceeding those in the following table.

**Maximum distance of water flow or potential water flow along snig tracks or extraction tracks (metres measured along the ground surface).**

Track grade (degrees)	Maximum distance (metres)
0-5	100
5-10	60
10-15	40
15-20	30
20-25	20
25-30	15

**14. Product Specifications and Accounting**

All timber products must be graded and required accounting procedures initiated prior to the products being removed from the dump.

**15. Yield Estimates**

**Total Volume**

**27,300m<sup>3</sup>**

Compartment	Op Type	Net Area (ha):
32	CF	6
Products	Volume/ha (m <sup>3</sup> /ha)	Total Volume (m <sup>3</sup> )
Poles (BBT only)	1	6
Veneer	2	12
HQL	10	60
HQS	3	18
E-logs	30	180
Salvage grade 1	65	390
Salvage grade 2	9	54
Pulpwood	30	180
<b>TOTAL</b>	<b>150</b>	<b>900</b>

Compartment	Op Type	Net Area (ha):
33	CF	100
Products	Volume/ha (m <sup>3</sup> /ha)	Total Volume (m <sup>3</sup> )
Poles (BBT only)	1	100
Veneer	2	200
HQL	10	1000
HQS	3	300
E-logs	30	3000
Salvage grade 1	65	6500
Salvage grade 2	9	900
Pulpwood	30	3000
<b>TOTAL</b>	<b>150</b>	<b>15000</b>



Compartment	Op Type	Net Area (ha):
41	CF	50
Products	Volume/ha (m <sup>3</sup> /ha)	Total Volume (m <sup>3</sup> )
Poles (BBT only)	1	50
Veneer	2	100
HQL	10	500
HQS	4	200
E-logs	30	1500
Salvage grade 1	64	3200
Salvage grade 2	9	450
Pulpwood	30	1500
<b>TOTAL</b>	<b>150</b>	<b>7500</b>

Compartment	Op Type	Net Area (ha):
48	CF	4
Products	Volume/ha (m <sup>3</sup> /ha)	Total Volume (m <sup>3</sup> )
Poles (BBT only)	1	4
Veneer	1	4
HQL	6	24
HQS	2	8
E-logs	20	80
Salvage grade 1	60	240
Salvage grade 2	20	80
Pulpwood	40	160
<b>TOTAL</b>	<b>150</b>	<b>600</b>

Compartment	Op Type	Net Area (ha):
49	CF	22
Products	Volume/ha (m <sup>3</sup> /ha)	Total Volume (m <sup>3</sup> )
Poles (BBT only)	1	22
Veneer	1	22
HQL	6	132
HQS	2	44
E-logs	20	440
Salvage grade 1	60	1320
Salvage grade 2	20	440
Pulpwood	40	880
<b>TOTAL</b>	<b>150</b>	<b>3300</b>

Compartment	Net Area (ha):
<b>TOTAL</b>	<b>182</b>
Products	Total Volume (m <sup>3</sup> )
Poles (BBT & BG only)	182
Veneer	338
HQL	1716
HQS	570
E-logs	5200
Salvage grade 1	11650
Salvage grade 2	1924
Pulpwood	5720
<b>TOTAL</b>	<b>27300</b>

**16. Pre operation briefing**

- I acknowledge that I have received a copy of the Harvesting Plan for Compartments 32, 33, 41, 48 & 49 in Pine Creek State Forest and that I have been briefed on the conditions of the Plan and understand the supervision and operational control requirements as explained to me by the Forest Planner or his/her delegate.

Signature:		Name:	
Position	<b>Supervising Forest Officer</b>	Date:	From
			To

Signature:		Name:	
Position	<b>Supervising Forest Officer</b>	Date:	From
			To

Signature:		Name:	
Position	<b>Supervising Forest Officer</b>	Date:	From
			To

Signature:		Name:	
Position	<b>Supervising Forest Officer</b>	Date:	From
			To