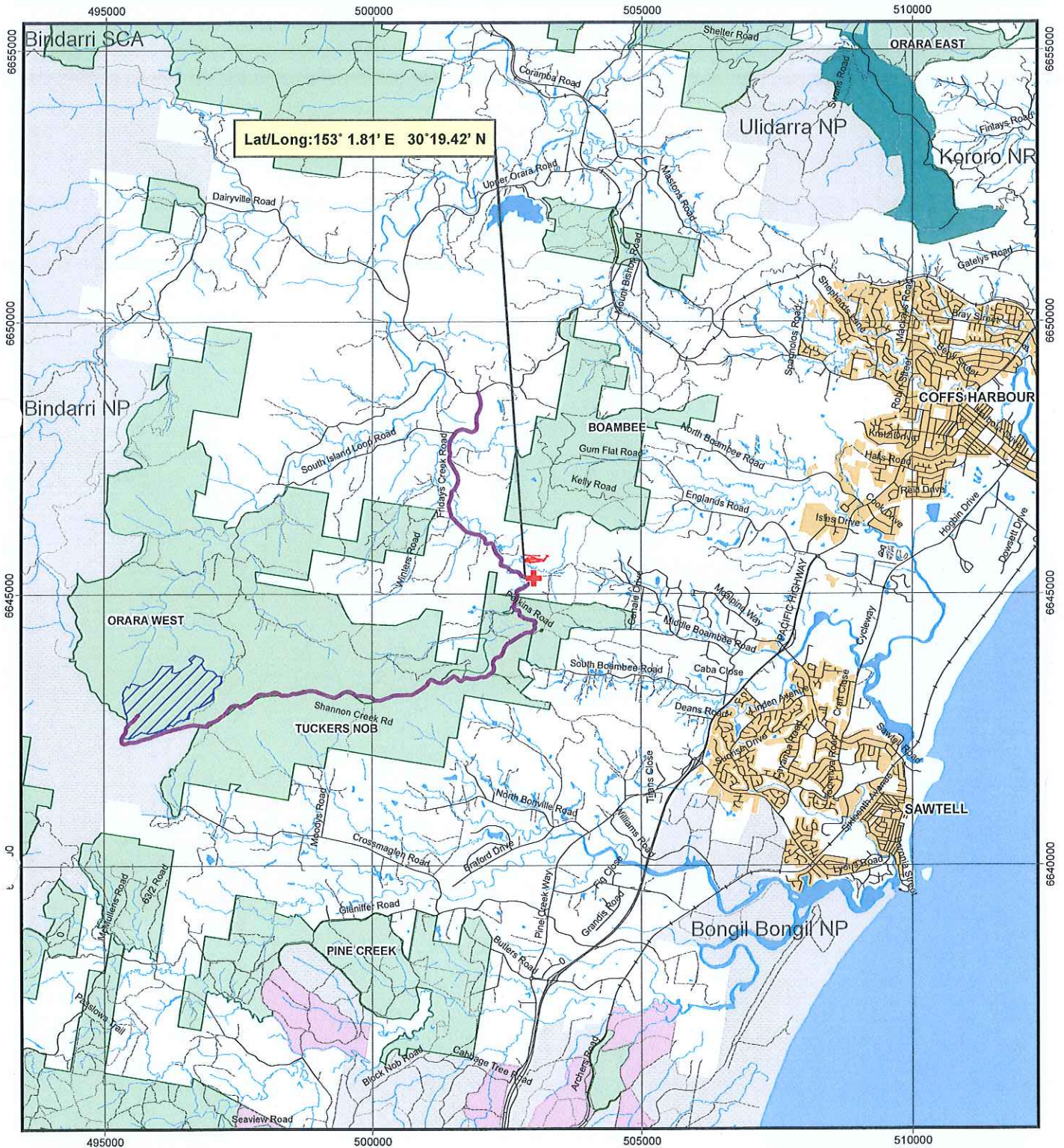


N
 Map Sheets:
 1:25000 Brooklana
 1:100000 Dorrigo
 Scale: 100,000

Coffs Harbour Management Area
 Locality Map
Compartments 606 and 607
 Orara West State Forest



Datum: GCS_GDA_1994
 Projection: GDA_1994_MGA_Zone_56



MAP FEATURES

- Harvest Area
- Private Plantations
- State Forest
- National Park & Nature Reserve

ROADS

- Sealed
- All Weather, Unsealed
- Dry Weather, Unsealed
- Four Wheel Drive
- Proposed Haulage
- Drainage Feature

SAFETY POINTS

- Helicopter Landing Area
- Safety Points



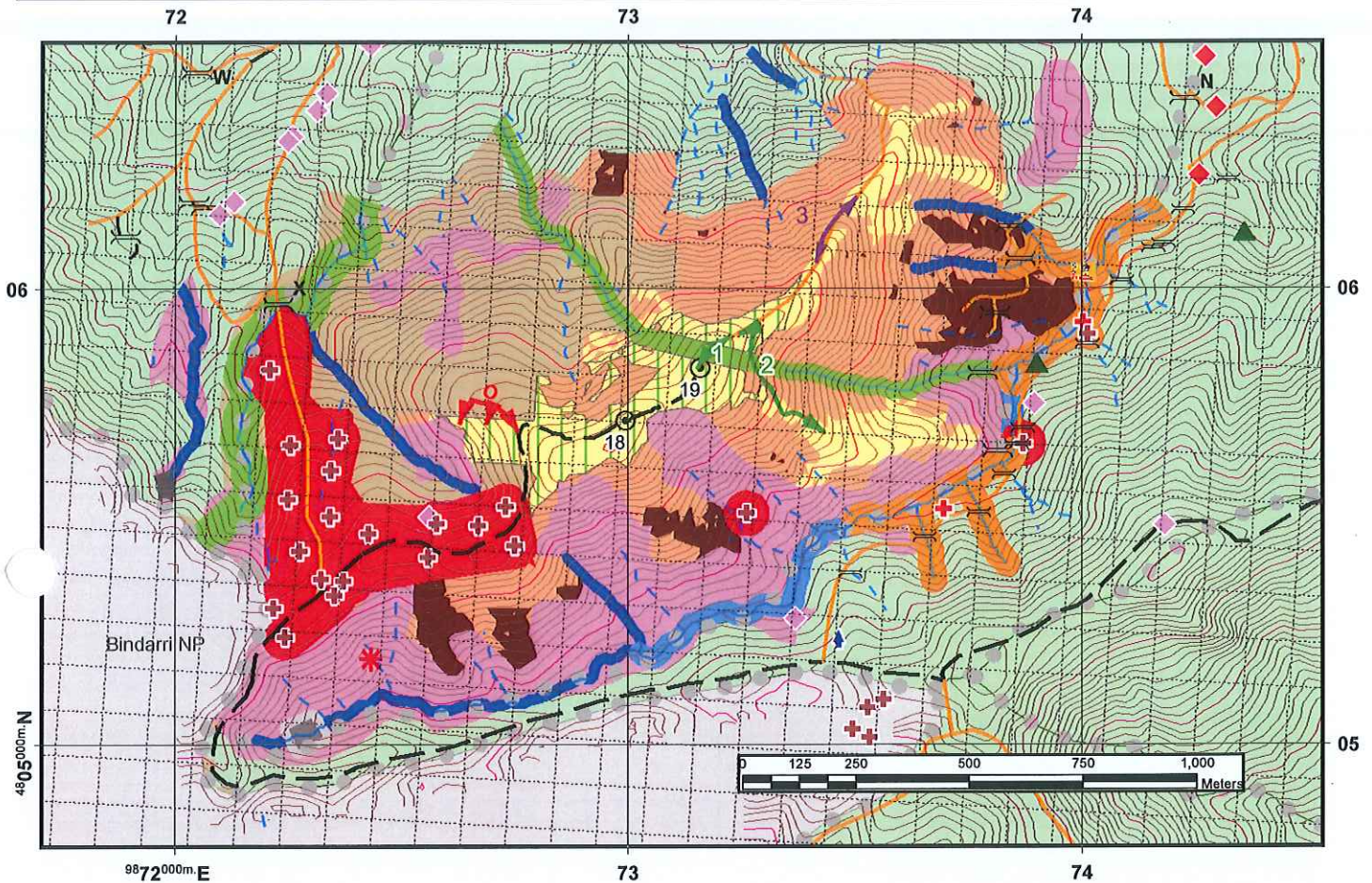
Created By: Steve Pickering
 Created: 19/8/2016

Map Sheets
 1:25,000 Brooklana 9437-2N
 1:100,000 Dorrigo 9437
 Scale: 15,000

**Coffs Harbour Management Area
 Harvest Plan Operational Map
 Compartments 606 (part)
 Orara West State Forest**



Datum: GCS_GDA_1994
 Projection: GDA_1994_MGA_Zone_56



MAP FEATURES

- State Forest Boundary
- Compartment Boundary
- 1 Km Grid
- 10 / 100 m Contour
- State Forest
- National Park Estate
- Drainage Line
- Indicative Drainage Feature

ROADS

- Sealed
- All Weather, Unsealed
- Dry Weather, Unsealed
- 4WD Track
- New Construction
- Non Haulage Roads
- Roads not to be used
- Forwarder use only

Threatened Species Protection

- Riparian Frog Buffers
- Rocky Outcrop
- Rocky Outcrop Buffer
- Stuttering Frog

Threatened Species Records

- Rocky Outcrop
- Niemeyera whitei
- Tylophora woolsii
- Yellow-bellied Glider
- Koala
- Pouched Frog
- Giant Barred Frog

Harvesting Features

Approved Crossings

- Approved RHW Xing
- Approved IFOA Xing
- Approved Snig Route
- Dry Weather Dumps
- Crossing

Harvest Area

- General Management (FMZ 4 and 8)
- Special Prescription (FMZ 3B)

4 Bar Exclusions

- TEC and EECs
- Rainforest

3 Bar Limited Falling

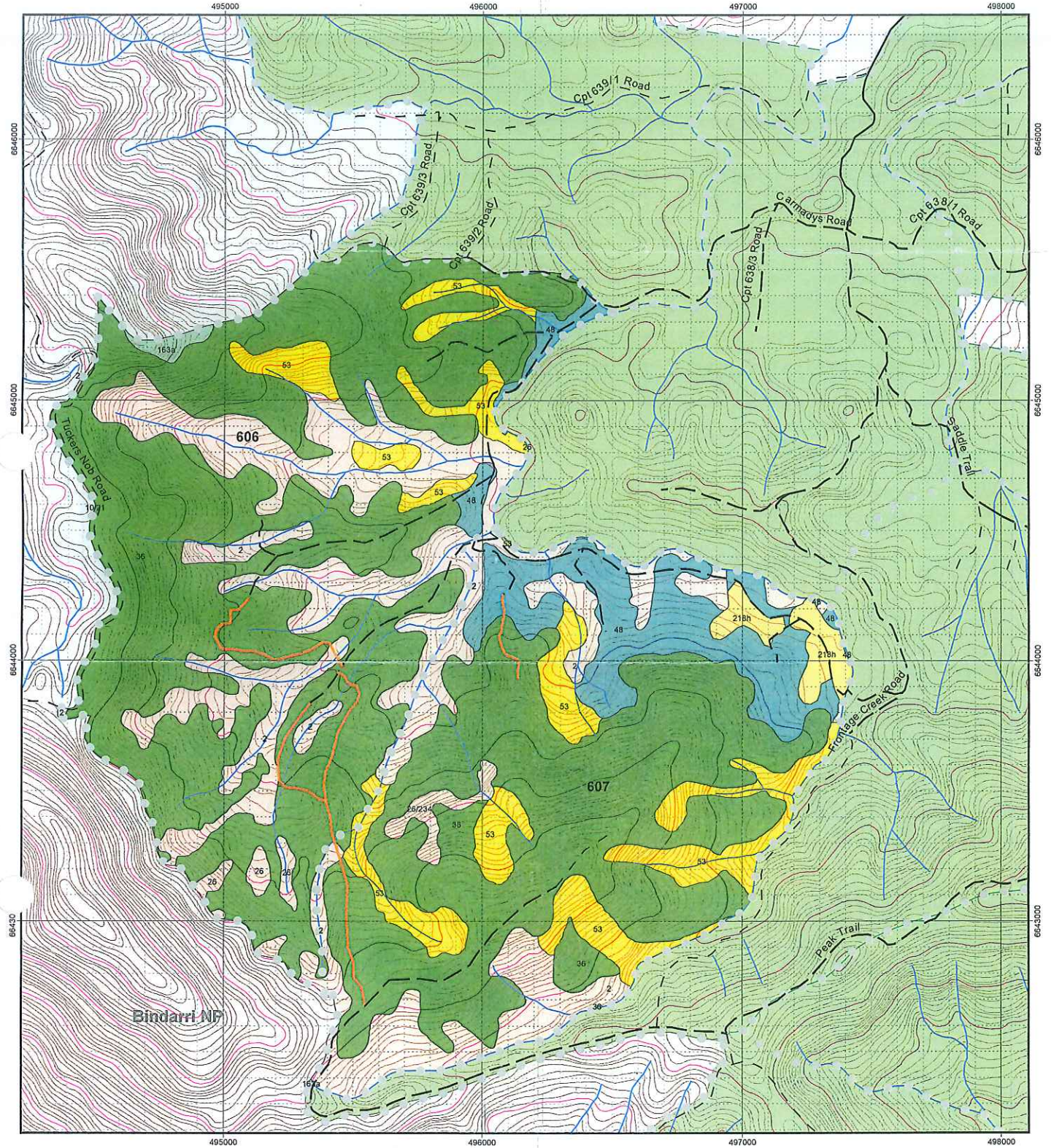
- Mapped Limited Falling EZ
- Ridge and Headwater Habitat EZ

Drainage features

- Stream PZ 1st Order (10m)
- Stream PZ 2nd Order (20m)
- Stream PZ 3rd Order (30m)

Other

- Indicative inaccessible
- Lidar Indicative Slopes > 30 degrees



MAP FEATURES

- State Forest Boundary
- Compartments Boundary
- 1 Km Grid
- 10 / 100 m Contour
- State Forest
- National Park Estate
- Swd Plt (Z6) / Non Forest (Z7)
- Slopes Over 30
- Drainage Line

ROADS

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

RN 17 (FOREST TYPE)

- Type 2 Yellow Carabeen
- Type 10 Coachwood
- Type 26 Viney Scrub
- Type 36 Moist Blackbutt
- Type 48 Flooded Gum
- Type 53 Brush Box
- Type 163 New England Blackbutt
- Type 218 Forestry Plantations



Hardwood Forests Division

Harvest and Haul Plan

State Forest	Orara West	Compartments	Part 606
Management Area	Coffs Harbour	IFOA Region	Upper North East
Harvest Plan No.	HP 59812	Supply Zone	2
		Price Zone	Coffs Harbour
Legal Conditions	Native Forest Harvesting under the UNE IFOA. Survey expiry date for this plan is 19/9/2027		
Certification	Timber products removed from the plan area are within the Defined Forest Area covered by Australian Forestry Standard and ISO14001 Certificate 13761		
Prepared by	Senior Planner	Steve Pickering 	Date: 13/10/17
Approved by	Planning Supervisor	Matt Kinny 	Date: 17/10/17
Abbreviations	FT = Forest Technician, HC = Harvesting Coordinator, PtS= Protection Supervisor, HS = Harvesting Supervisor, RC = Roading Coordinator, Crew = Harvest Contractor/Forest Operators, IFOA = Integrated Forestry Operations Approval, TSL = Threatened Species Licence, EPL = Environment Protection Licence, FL = Fisheries Licence, CH = Cultural Heritage, SOP = Standard Operating Procedure.		

1. Harvest Area Details (all slope info is LiDAR derived)

	Cpt 606 (remaining)
PlanCpt ID	129256
Gross Area (ha)	285.4
Harvest Area	19.7
Estimated Yield	1970
Yield/ha	100
Slope (% 0-15 degrees)	8.4
Slope (% 15-30 degrees)	91.6
Slope (% 0-20 degrees)	22.1
Slope (% 20-25 degrees)	21.8
Slope (% 25-30 degrees)	56.1

Contractor must ensure timber removed is allocated to the correct compartment when entered into Electronic Delivery Docket.

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2. Management Conditions on Boundaries

Boundary	Conditions
National Park	Bindarri NP adjoins the compartments to the west. The harvest area is generally separated from the boundary by rainforest protection zones except for a small section. Where harvesting activities comes within 50m of a NP Boundary the boundary is to be marked by FT's

3. Expected Yields (part compt 606 only)

Product Estimates	Volume (m3)
HQ Large Sawlog (Quota)	900
HQ Small Sawlog	120
Poles, Piles and Girders	130
LQ Sawlog (Salvage)	650
Veneer	200
Total	2000

Species	Species Mix (Sawlog)
BBT	95%
TWD	5%

4. Haulage Route and Contractor Travel Route

Haul Route	The haul route is via Peak Trail, Friday Creek Road, South Island Loop Road, Mt Brown Road and onto the Orara Way. This haulage route is not to be used by B-doubles.
School Bus Routes	Haulage contractor must contact Newcombe Coach Lines on 6658 0303 or 0457 581 418 Haulage contractor must apply School Bus Communication protocol as referred to in the Site Safety Plan

5. Community

Issue	Detail	Conditions
Special Purpose Permits	SPP No HC 34293 exists for recreational use in this area.	Permittee has been advised to contact Harvesting Supervisor prior to entering area for conditions that may apply.

6. Infrastructure

Infrastructure	Conditions
All Mapped Fire Trails	Mapped trails must be reinstated to similar or better condition for access to that prior to harvesting/snigging and comply with the EPL.

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7. Harvesting Conditions

Silviculture Type	Harvesting Objectives and Condition for each stand condition
STS - Heavy Mixed Aged, Blackbutt/Mixed moist species regrowth	<p>Harvesting will be managed with the objective of removing trees that have reached maturity.</p> <p>Tree removal and ground disturbance must also maximise regeneration opportunities.</p> <p>Single Tree Selection must remove no more than 40% of the basal area across the net harvest area. Trees with dbhob <20cm must not be selected for harvesting under STS (1.5.10 IFOA).</p> <p>In areas designated for STS it is expected that the basal area removal across the tract will fall below 40 %. BA removal may exceed 40% in harvested areas. This will be offset within the compartment by extensive non harvest areas inaccessible due to terrain and other operational issues</p>
FMZ 3B (along Peak Trail)	Visual protection along Peak Trail. Harvesting operations must aim at retaining the visual amenity of the forest as viewed from the NW. HC to modify operations as appropriate to maintain visual amenity through strategic location of snig tacks and modified canopy retention if required.

IFOA Limits	STS - Heavy
STS Tract	19.7 ha
Pre-harvest BA	45 m ²
Post harvest BA	27 m ²
Planned Removal	40%

8. Tree Retention - refer to TSL booklet for full conditions

Prescription	Condition/Responsibility
Mark-Up – the FT is responsible for marking up the forest ahead of harvesting operations consistent with SOP 2 Exclusion Zone Boundary Mark Up - and SOP 3 - Forest Mark Up	
Compartment Mark-Up Survey (5.1, 5.2, 5.13)	<p>Compartment mark-up surveys must be conducted at least 300m in advance of operations. The survey must search for threatened and protected species features listed in conditions 5.1 and 5.2 of the TSL.</p> <p><i><u>No Koala star search triggers were identified during pre- harvest surveys.</u></i></p>
Hollow-bearing and Recruitment tree retention (H and R)	Regrowth Zone - 5.6 d), e) and f) conditions apply.
Significant Food Resources (5.6 g)	FT must mark for retention - 6 Eucalypt feed trees/2 ha where they occur, glider sap feed trees, stands of forest oak and forest oak feed trees.

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Harvesting - Crew and HC responsibilities	
Protection of Retained Trees (5.6h)	<p>Trees marked or selected for retention must not be felled.</p> <p>The crew must minimise damage to H, R and E trees by using directional felling.</p> <p>Harvesting debris should not accumulate within 5 m of retained trees. Where debris does accumulate the crew must remove or flatten to < 1m high.</p> <p>The HC must be notified of any badly damaged retained trees and they must assess and record if a replacement retained tree is required.</p>
Stag Retention (Dead standing trees 5.6f)	<p>The crew should retain stags where safe to do so.</p> <p>The crew must record the date, DBH, risk and location of unsafe stags removed</p>
Significant food resources	The crew should avoid damaging flowering or fruiting banksias or grass trees.
Impenetrable Understory	Areas identified as Impenetrable Understory by the FT must be managed as per the requirements of SOP3.

9. Site-Specific Flora and Fauna (see SOP 1, 2 and 3)

Condition	Boundary Type	Prescription
FMZ 2 & 3A	Limited	Mapped Exclusion zone to be located by GPS in harvester.
HCVOG (5.3)	Limited	Mapped Exclusion zone to be located by GPS in harvester.
Rainforest (5.4)	Accidental	Mapped Exclusion zone to be located by GPS in harvester.
Riparian Habitat Protection (5.7) (The HPOM indicates LIC drainage order corrected by LiDAR)	2 bars	<p>Implement filter strip (hard) and protection zone (soft) around drainage features as shown on the HPOM. Refer to SOP1.</p> <p>FT must mark unmapped drainage lines and 1st order protection zone boundary with 2 bars.</p> <p>The crew will locate and protect all 2nd order and above streams with GPS.</p>
Ridge & Headwater Habitat (5.8)	Limited	Mapped Exclusion zone to be located by GPS in harvester.
Rocky Outcrop (5.11)	Limited	<p>Two rocky outcrops identified – embedded within rainforest Others located during mark-up, to be assessed and marked by FT.</p> <p>20m buffer on outcrops >0.1 ha or cliffs >3m high</p>

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Ground Habitat (5.17)	N/A	Commercial firewood collection in these compartments is permitted .
Giant Barred or Stuttering Frog (6.3)	Machinery	Mapped exclusion, (30 m buffer on mapped streams within 200 m of records) to be located by GPS in harvester.
Golden – tipped Bat (6.20)	Machinery	Mapped exclusion, (30 m buffer on mapped streams within 200 m of records) to be located by GPS in harvester.
Yellow-bellied Glider (6.17g) ii)	Modified Harvest	Tree retention requirements to be implemented by FT. No detection within 200m of proposed harvest area
Assa Darlingtonia (Pouched Frog)	Machinery	This species currently has no prescription within Coffs Harbour MA under the TSL. All records to be protected within areas not available for harvest under this plan. Mapped areas for habitat protection to be located by crew using GPS in harvester.
TEC Exclusion	4 bars	Mapped lowland rainforest TEC exclusion exists in the compartments remote from the proposed harvest area. No requirement to mark.
Fish	N/A	Compartment 606 contains Eastern Freshwater Cod aquatic habitat class 2. Fisheries licence conditions apply.

10. Soil & Water – Refer to EPL Booklet for full conditions

Issue	Assessment	Conditions
EPL Scheduled Activity	No	
EPL Licensed Activity	Yes	
Unmapped drainage Line harvesting	Not Permitted	Apply EPL
Inherent hazard level	3	Refer SOP 4
Harvesting Slope Limits	30 degrees	EPL – Sch 4 Condition 3.
Dispersible Soils	No	
Mass Movement / Instability	No	
Acid Sulphate Soils	No	Nil
Seasonality Conditions	Yes	Forestry activities are excluded from slopes greater than or equal to 25° between 1st January & 31st March
Historical or existing erosion	No	Nil

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Ground cover	>70%	Nil
Burning conditions	Yes	Burning during February and March must use a ground burning (top disposal) method only
Log Dumps		Refer to SOP 5 HC is responsible for authorising moving the location of a log dump.
Roading management during harvesting		Refer to SOP 6. HC is responsible for monitoring road and crossing drainage during haulage.
Wet Weather and Rutting		Refer to SOP 6. Crew is responsible for implementing automatic closures and following notified closures. HC is responsible for ensuring crew notified when notified closure is lifted.
Snigging		Refer to SOP 8 Crew is responsible for progressive drainage of snig tracks
Snig Track Crossings		Refer to SOP 8 HC is responsible to ensure snig track crossings are approved prior to use and rehabilitated upon completion.

11. Crossing Approvals

All crossing approvals are shown on the operational map – any other feature crossings must be assessed, recorded below and approved by the Planning Supervisor before use.

Crossing	EPA Approval	Conditions
0	No	Use existing track. Push all debris to southern side. Minimise disturbance within exclusion zone
1/2	No	No trees > 20cm dbhob to be removed from within the protection zone.
3	No	Track permitted on a grade of up to 30 degrees to use existing sidecut track around rocky knoll. <ul style="list-style-type: none"> • Tree removals must be minimized within the area of steep slopes to that required to use the track • Material must not be sidecast over the area of steep slopes. • The track must be inspected by the harvesting contractor and harvesting coordinator. Site specific conditions of use must be agreed upon prior to use and documented. These conditions must include: <ul style="list-style-type: none"> • Location of drainage structures and outlets • Use of dropdowns and rock dissipaters where drainage outlets are considered unstable • Avoiding the location of drainage outlets above steep hillslope hollows • Temporary drainage to be installed in the event of impending wet weather or temporary cessation of harvesting for >24 hours.

12. Operational Plan Briefing: A briefing of this operational plan was conducted by

Person	Role	Nature of Briefing	Date

Induction qQuiz

1. Where is the safety point and helipad
2. What is the prescription for pouched frog
3. What are the conditions relating to use of approved snig track routes 1, 2 and 3?
4. What is the prescription for FMZ 3B?

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13. Acknowledgement of Briefing: I acknowledge that I have received a copy of the plan documents and that I have been briefed on the conditions of the Plan. I understand the operational control requirements as outlined in the plan and take responsibility for the implementation of plan conditions relevant to my responsibilities

Name	Role	Signature	Date

14. Standard Operating Procedures: The following SOP's apply to this plan. FCNSW staff and the crew must hold a copy on site whilst operating and comply with the conditions set out in each SOP.

Procedure Number	Title
1	Drainage Feature Protection
2	Exclusion Zone Boundary Management
3	Forest Mark-Up
4	Operating in Inherent Hazard Level 3 Areas
5	Log Dump Operation and Use
6	Road and Crossing Management and Wet Weather Controls
7	Safety Requirements
8	Snig Tracks and Extraction Tracks
9	Tree Felling and Servicing Logs
10	Fire Precautions and miscellaneous requirements

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FORESTRY CORPORATION OF NSW
ROADWORKS PLAN

Orara West State Forest; Compartments 606

ASSOCIATED HARVEST PLAN NO. 59812

Certification

Prepared by:

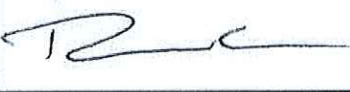
Senior Planner		Date: 13/10/17
Steve Pickering		

Approved by:

Planning Supervisor		Date: 17/10/17
Matt Kinny		

Road Works and Operational Expenditure Approved by:

A/

ROADWORKS Regional Manager		Date: 17/10/17
Craig Bushy TAMARA CAMPBELL		

Duration of Approval:

The above approval is valid until 12 months from date of signature.

Contents

1. Cover Page
2. Operational Map
3. Costings
4. Roadworks Plan Text/Prescriptions/Road and crossings work sheets
5. Locality Map
6. Safety Plan HAMEEP
7. Harvesting Plan
8. Harvesting Notification List (Operations Team Leader and Roding Supervisor Only)

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1. Objectives

- Roadworks are required to service native forest harvesting operations within the above compartments. These compartments are currently scheduled for harvest in late 2017.
- The operational map shows the location of the proposed works.
- **Attachments:** Financial Analysis Spreadsheet gives full details of costs, benefits, material & plant requirements.

2. Specifications and Legal Conditions

This operation must comply with:

- Standard Operating Procedures issued by FCNSW.
- State Forests of NSW Forest Practices Code - Part 4 Forest Roads and Fire Trails (February 1999).
- Integrated Forestry Operations Approval issued under part 5B of the Forestry Act 2012 (IFOA) including the associated licences:
 - Threatened Species Licence issued under the Threatened Species Conservation Act (1995).
 - Fisheries Licence issued under section 220ZW of the Fisheries Management Act 1994.
 - Environment Protection Licence No. 4017 (UNE) issued under section 55 of the Protection of the Environment Operations Act 1997. Licenced operation
- Technical Guidance Notes for Roadworks.

3. Special Conditions

<i>Feature</i>	<i>Special Conditions</i>
Cultural Heritage	No
Threatened Species	See harvesting plan. Minimise disturbance within protection zones. Leave debris stacked on side of road in situ through protection zones.
Dispersible Soils Hazard	No
Mass Movement Hazard	No
Seasonality	Yes Forestry activities are excluded from slopes greater than or equal to 25° between 1st January & 31st March
Engineering Design	No
Environmental impacts i.e. Dust, Noise, Water, Visual	No
Haulage Standards	No special conditions
National Park	Yes – National Park boundary
Private Property	No
Permit To Enter required	No
Quarries and Gravel Pits	No
Underground/Overhead Utilities	No
Safety Issues (includes hazards, public use of roads)	See Hazard Assessment in the Site Safety Pack

3.1 EPL Licencing

- This operation is licensed under the EPL.
- The Roding Supervisor/Harvesting Supervisor is responsible for licencing the activity
- The Roding Coordinator/Harvesting Coordinator must notify the Roding Supervisor/Harvesting Supervisor when operations have commenced and ceased.

4. General Conditions

- Tree removal should be undertaken mechanically where possible. Refer to Safety Procedures 4.25 "Manual Tree Felling" and 4.26 "Management of Hazardous Trees & Overhead Hazards".
- Remove vegetation within 3m of the road prism only where required to maintain safe sight distance and passage of trucks.
- Note: Clearing is generally permitted within 3m of the road prism for all roads. Ground disturbance and tree debris may impact outside this 3m either side of the road prism as is required to effect clearing within 3m of the road prism. Conditions 5, 6 and 47 Schedule 5 of the EPL must apply.

5. Works Schedule

See attached worksheet

Road Maintenance/Upgrade

Road Name Peak Trail

Category Temporary

Location From compartment boundary to dump 19

Length (m) 1600

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works >30 Slopes		<input checked="" type="checkbox"/>	
	Mass Movement		<input type="checkbox"/>	
	Dispersible		<input type="checkbox"/>	
Pavement	Upgrade	Widening	<input checked="" type="checkbox"/>	Location Last 1000 m Upgrade Length (m) 1000 Formation Width (m) 4.2 Upgrade Spoil N/A Curve Widening Widen to allow passage of haulage trucks
		Grade Lowering	<input checked="" type="checkbox"/>	N/A
		Realignment	<input checked="" type="checkbox"/>	Last 1000m
		Reopening	<input checked="" type="checkbox"/>	Last 1000 m
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	Full length Maintenance Length (m) 600
		Repair surface	<input type="checkbox"/>	N/A
		Crown/Crossfall	<input checked="" type="checkbox"/>	Ridgetop locations
	Gravel	<input type="checkbox"/>	N/A Gravel Length (m) 0	
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Max Clearing width (m) 3 See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition	
	Batter Repair/Upgrade	<input checked="" type="checkbox"/>	200 m from Compt boundary N/A Rock eroding fill batter	
Drainage	Culverts	<input type="checkbox"/>	N/A Size: 0 Sets: 0	
	Mitres	<input checked="" type="checkbox"/>		
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 8	
	Belts/Channels	<input checked="" type="checkbox"/>	Sets: 7	
	Drop Downs	<input checked="" type="checkbox"/>	Sets: 1	
	Silt Trapping	<input type="checkbox"/>		
Comments: Nil				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

6. Operational Control

Roading Supervisor to sign here

I acknowledge that I have received a copy of the plan documents and that I have been briefed on the conditions of the Plan. I understand the operational control requirements as outlined in the plan and take responsibility for the implementation of plan conditions as the principle controller of the operation.

I will brief any other operators not present at this briefing prior to them starting any work on site and ensure that risk assessment for the Safety Management Plan is completed for this area prior to operations commencing

Name:		Signature:	
Position:		Date:	From
Company:			To

Name:		Signature:	
Position:		Date:	From
Company:			To

Name:		Signature:	
Position:		Date:	From
Company:			To

Name:		Signature:	
Position:		Date:	From
Company:			To

Name:		Signature:	
Position:		Date:	From
Company:			To

