LOCALITY MAP

Compartment 65

State Forest: South Brooman No:830

SOUTH COAST IFOA BATEMANS BAY MANAGEMENT AREA

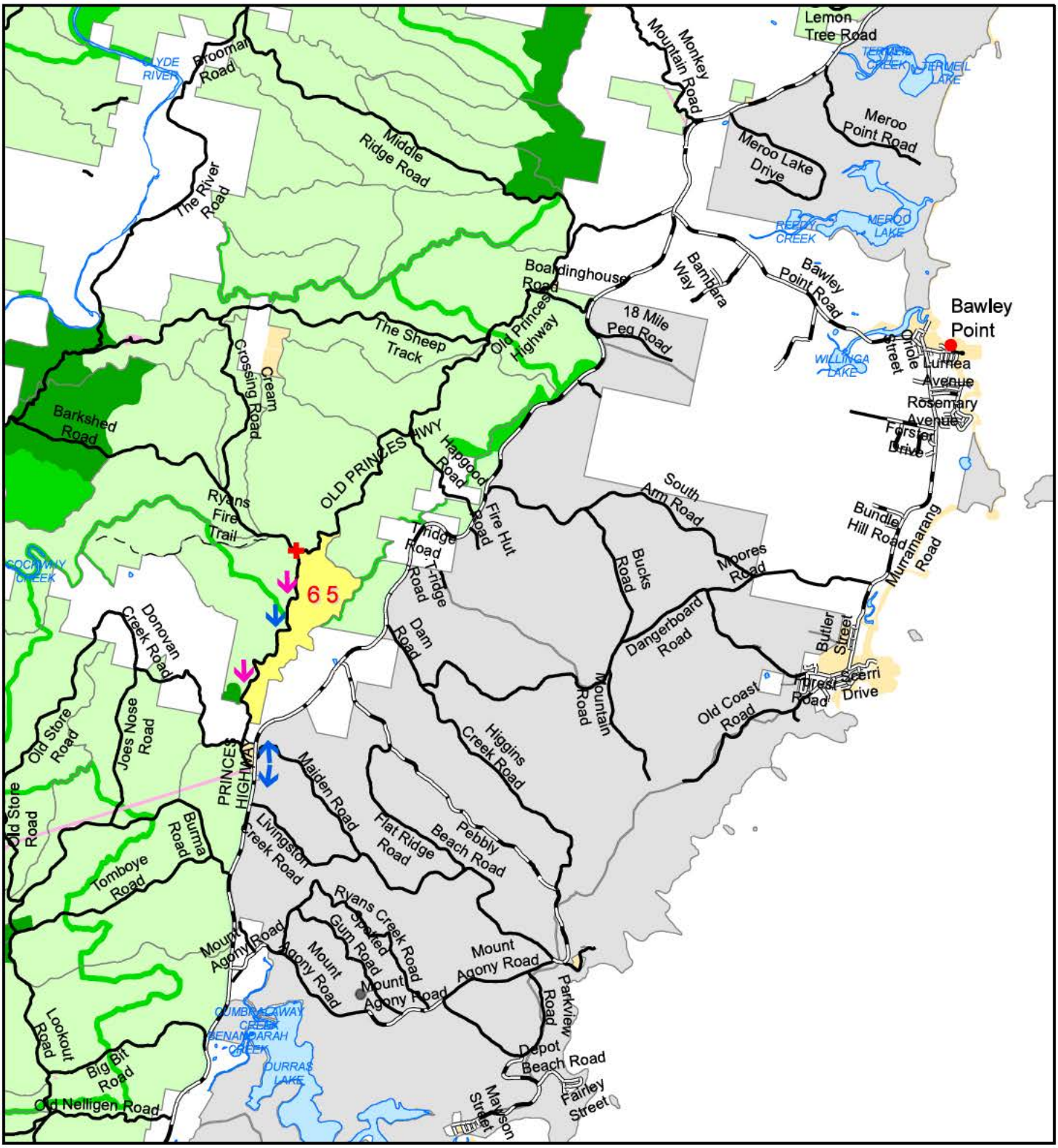
Scale: 1:100,000

Forestry Corporation

N

SPEED LIMIT 60 On FCNSW unsealed gravel roads

GDA



- Towns & Localities
- Sealed Road
- Major Forest Road
- Major Rivers
- State Forest
- Planning Unit
- Vacant Crown Land
- Non Forest
- Freehold
- National Parks
- Formal Reserve
- Informal Reserve
- Softwood Plantations
- Water
- Emergency Meeting Point and Helicopter Landing Site
- Evacuation Route
- Haulage Route

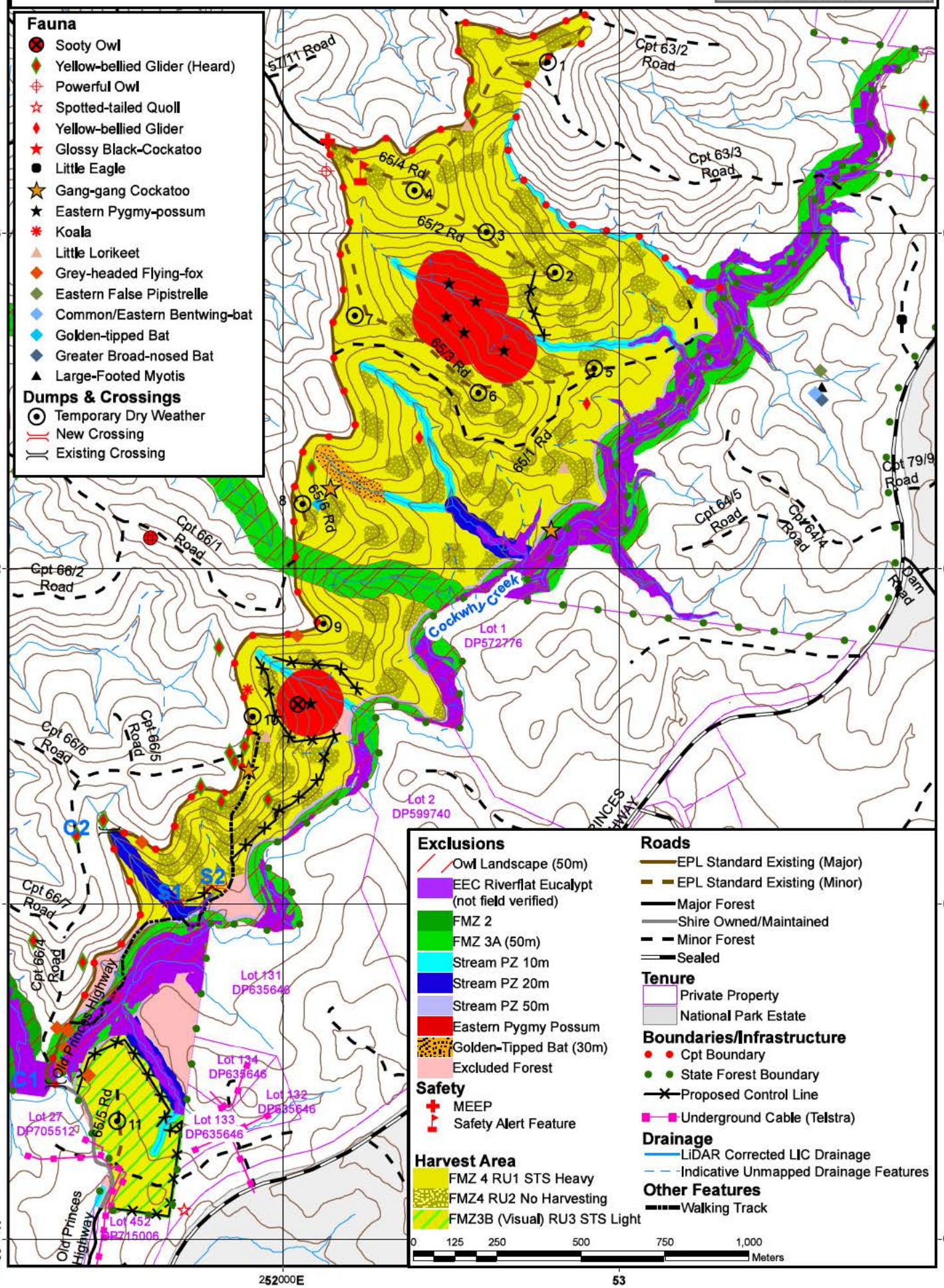
Harvest Plan Operational Map

Compartment: 65
State Forest: SOUTH BROOMAN No: 830
Southern IFOA - South Coast
Map Sheet: KIOLOA 8926-1N

Scale: 1:15,000
Contour Interval 10m
Prepared By: Kate Halton
Version: 1

GDA
Forestry Corporation

PLANNING SUPERVISOR APPROVAL
APPROVED: Lee Blessington
DATE: 31/03/2016



Harvest Plan Forest Type Map

Compartment: 65
State Forest: SOUTH BROOMAN No: 830
Southern IFOA - South Coast
Map Sheet: KIOLOA 8926-1N

Scale: 1:15,000
Contour Interval 10m
Prepared By: Kate Halton
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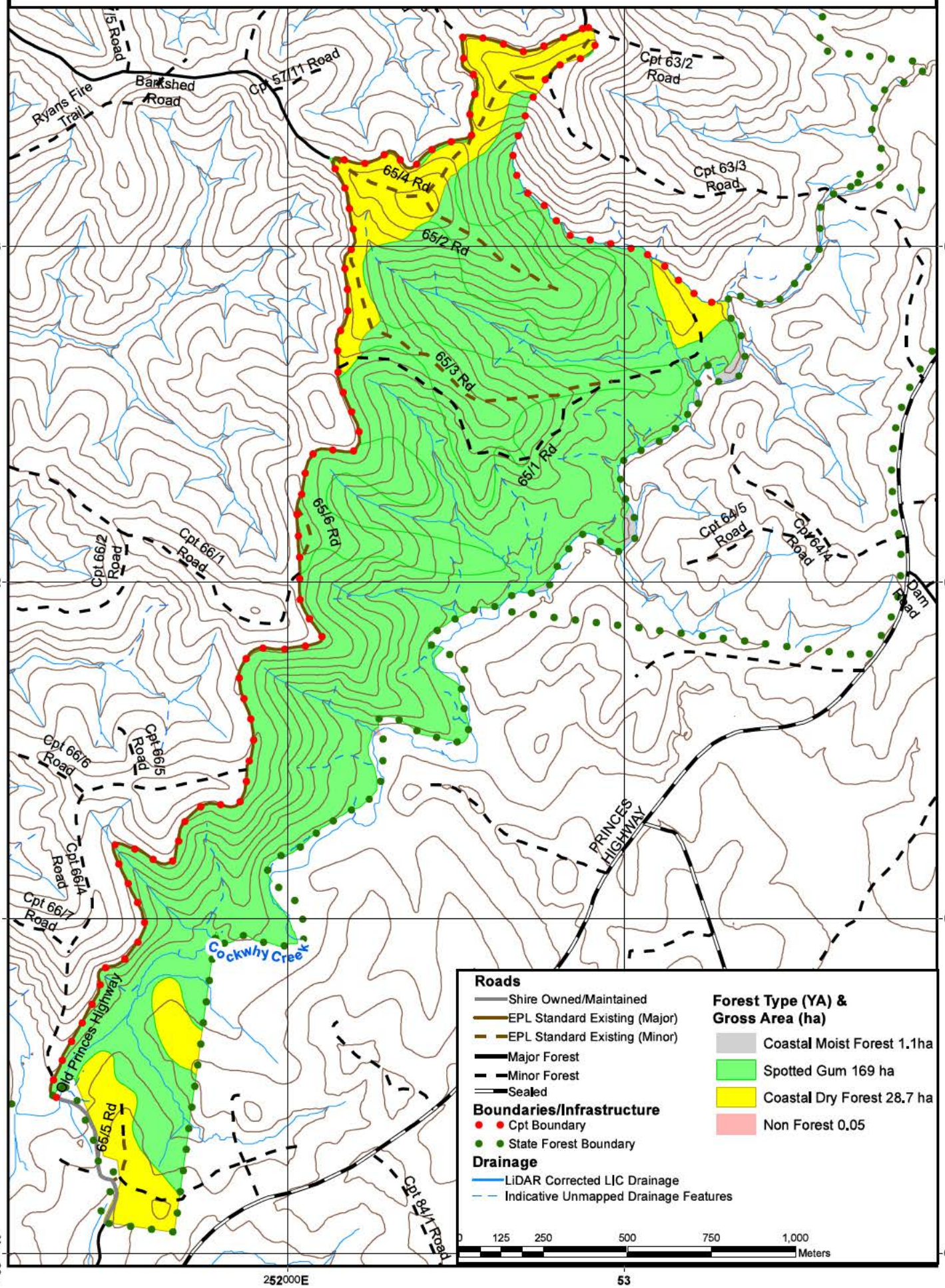

Forestry Corporation

HARDWOOD FORESTS- SOUTHERN IFOA SOUTH COAST HARVESTING PLAN

South Brooman State Forest - Compartment 65

Certification

This plan has been prepared in accordance with the Integrated Forestry Operations Approval issued under the Forestry and National Park Estate Act 1998. The Harvest Plan Standard Conditions for Hardwood Forest Operations in South Coast apply to this operation.

Prepared By: Harvest Planner	Kate Halton	Approved By: Planning Supervisor	Lee Blessington
Signature	Kate Halton	Signature	Lee Blessington
Date	31/03/16	Date	31/03/16

Note: Approval includes the Harvest Plan Operational Map (HPOM) with the corresponding approval date displayed on the map, verifying final approved version.

Other maps included with this plan are Locality, Forest Type, Roading and Cultural Heritage (limited distribution).

Description of Proposal

Harvesting of Hardwood forest

Harvesting of Hardwood forest, using Single Tree Selection, Silviculture subject to the Southern IFOA requirements will be undertaken within this planning unit. **Timber harvesting and road construction will not be licensed under the EPL.**

The primary product of the harvesting is high quality large sawlogs (quota logs), small high quality sawlogs, veneer logs, girders, poles & piles where timber markets are available. Parts of felled logs that do not meet high quality log specifications are segregated and graded into other classifications such as salvage sawlogs, pulp logs & miscellaneous timbers e.g. split & round posts, firewood, mining timbers & craftwood. The availability of miscellaneous timbers depends mainly on forest types, log defectiveness & market conditions at the time of harvesting.

Clause 22 – Integrated Forestry Operations Approval (IFOA) Consideration

All relevant factors have been reviewed taking into account the volume and monetary value of each forest product to supply Term Agreement Holders. The harvesting operation also complies with Clause 22 of the IFOA.

Attachment 1: Site Safety Plan prescribes safety requirements and Medical Emergency Evacuation Plan for this harvesting operation.

Attachment 2: Roading plan prescribes roading requirements for this harvesting operation.

Abbreviations used in this plan

FT = Forest Technician, HC= Harvesting Coordinator, PtS= Protection Supervisor, HS = Harvesting Supervisor, RC = Roading Coordinator, IFOA = Integrated Forestry Operations Approval, TCP = Traffic Control Plan.

Area Identification and Yield Estimates

State Forest	Compartment/s	IFOA Region	Management Area	Certification
South Brooman	65	Southern	Batemans Bay	AFS 604224 AS4708:2013

	Cpt 65
Plan Compartment ID	22258
Gross Area (ha)	205
Net Harvestable Area (ha)	146
Available for snigging but not Harvest (ha)	31
Harvest Area (ha)	109
Poles, Piles, Veneer & Girders	$0m^3$
Quota Logs (HQL)	$2600m^3$
High Quality Small	$600m^3$
Salvage	$2000m^3$
Pulp E1	2600t
Firewood/Misc	2600t

Note: The yield estimates in the table above are derived from the Plan of Operations.

Slope Classes (percent of harvest area)

Slope Class	Cpt 65 % of harvest area
0-20°	93.6
20-25 °	5.7
25-30 °	0.7

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ATTACHMENT 1: SITE SAFETY PLAN

Worksite Information	
Is this Declared Hunting Area: No	Comments:
Have Exclusion Zone signs been erected or checked prior to starting work daily.	NA
Comments:	
Description of Work to be undertaken on site: - Refer to description of proposal above.	

Site Supervisor	
Name:	Contact number:

Communication		
Radio channel number	VHF:	UHF
Other (e.g. hand signals):		

Traffic management (describe) e.g. Signage, Road closure, Traffic control

This plan identifies haulage from the compartment will be South on Old Princes Hwy (FCNSW Owned, becoming Shoalhaven Shire Council Owned –south of crossing C1) turning left or right onto Princess Hwy.
The sight distance at the intersection of Old Hwy and 65/1 Road has been assessed as less than 200m on both approaches to the intersection. Truck Warning signage in accordance with "TCP_195_OldHwy_65/5" must be in place prior to haulage commencing on 65/5 Road.

Harvesting within 2 tree lengths of Old Princes Hwy
When harvesting within 2 tree lengths of Shoalhaven Shire Council Owned and FCNSW owned sections of Old Princes Hwy, this road must be temporarily closed in accordance with "TCP_78_57_OldHwy_Cpt65".

Permission from Shoalhaven Shire Council to implement both TCPs was granted during the planning phase.

Dust, noise
Dust and noise – Where log haulage routes pass close to rural housing along natural surface/gravel roads dust and noise must be minimised to the greatest extent practicable. Trucks should reduce speed, restrict use to daylight hours and minimise the use of engine brakes through these areas.

Name of on-site safety first-aider/s

Location of first-aid kit

SITE HAZARD & RISK ASSESSMENT NO.	CONTROL	WHO	IMPLEMENTED
1. Vehicle/pedestrian/ horse rider collision at adjoining roads of various traffic levels	Warning signs at FCNSW intersections, road closure on FCNSW roads. Implement Traffic Control plans (where specified in this harvest plan).		

	60km/hr speed limit on all State Forest gravel roads unless otherwise signposted. Compliance with FCNSW lights on policy. Be aware that Brooman State Forest roads are used by horse riders and bush walkers.		
2. Underground cables, pipelines	Minimise ground disturbance across or along cables & pipelines. Increase depth of earth cover if required.		
3. Hazardous or dead trees	**Refer to FCNSW WHS procedure 4.26.** Assess area within two tree lengths of work site. Assess risk, mark any Distinctly Dangerous Trees with the symbol **Ø** & if necessary remove hazard or move work site. Use machinery to assist with hazard removal if possible **Contractor is responsible for implementing control strategies during harvesting.** Note: one dangerous tree assessed during harvest planning has been marked in the field and shown on HPOM.		
4. Overhead hazards associated with dumps	**Refer to FCNSW WHS procedure 4.26.** Assess overhead hazard within two tree lengths of the dump. Assess risk, & if necessary remove hazard or relocate dump site. **Contractor is responsible for implementing control strategies during harvesting.**		
5. Dust from passing vehicles along dirt haulage routes	Restrict speed to minimise dust generation, slow down when passing vehicles. Turn on driving and hazard lights to increase visibility.		
6.			

- **All** visitors, contractors and employees **must** be fully **inducted** onto the worksite by the workplace supervisor e.g. the Principal Contractor or the Forestry Corporation supervisor. This must be recorded on the attached induction sheet.
- Relevant **Safe Work Procedures** are available and understood for the type of work to be undertaken.
- A **Risk and Hazard Assessment Worksheet** must be completed if site specific hazards are identified that are not covered by a **Safe Work Procedure**. The top (pink sheet) is to be attached to this site safety plan.
- Operators in training must be supervised by the site supervisor.
- All appropriate Personal Protective Equipment (PPE) must be worn on the worksite at all times

Forestry Corporation

MEDICAL EMERGENCY EVACUATION PLAN

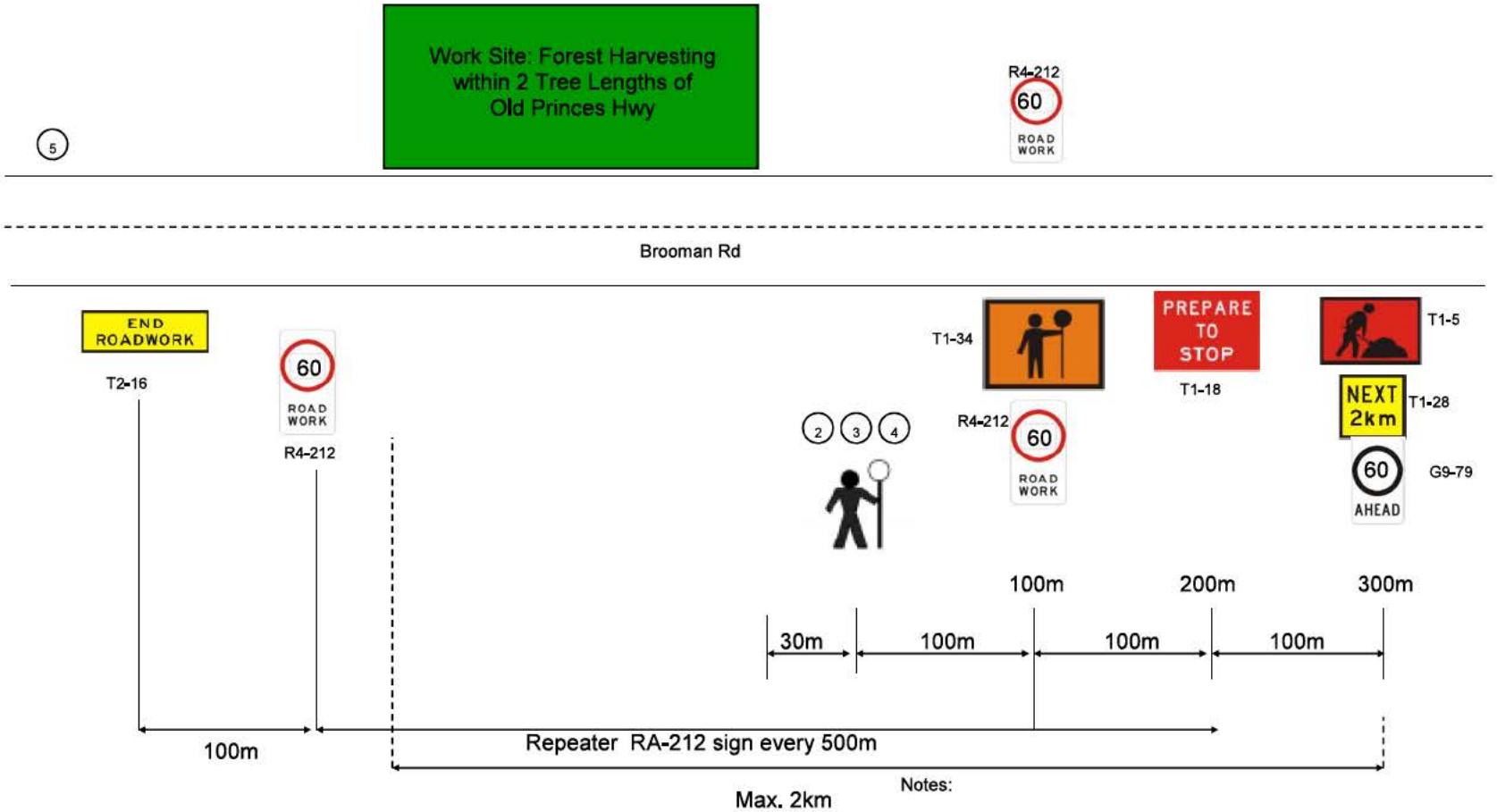
Nearest reliable mobile phone reception (describe location)			
Next G Network: Good	GSM: N/A	Satellite: N/A	
GPS Lat/Long: 35° 34' 05" S / 150° 15' 25 E	MGA: 251303E 6060490N	Datum: GDA 94	Zone: 56
Location description: Bridge on Old Princes Hwy (C1)			
Emergency meeting point for ambulance / police (refer to attached locality map)			
GPS Lat/Long: 35° 32' 42" S / 150° 15' 53" E	MGA: 252131E 6063264N	Datum: GDA 94	Zone: 56
Location description: Intersection of Barkshed Rd and Old Princes Hwy (EMP 52)			
Helicopter landing place (refer to attached locality map)			
GPS Lat/Long: 35° 32' 42" S / 150° 15' 53" E			
Location description: Intersection of Barkshed Rd and Old Princes Hwy (EMP 52)			

Procedures to obtain ambulance assistance	
1. Dial 000 2. If there is no mobile coverage, dial 112 (which will work on any mobile phone system). 3. If no response on 112: • use a radio link (TARA, be discrete with personal information) • move to an area with mobile coverage • find a landline • use another network (e.g. a contractor's VHF radio)	Contact nearest Forestry Corporation office on: Channel: 236 Telephone: 1300 880 548 Give details of the situation and ask for a 000 call to be placed.

000 operator question:	Response:	
1. Police, Fire, Ambulance?	NSW Ambulance,	
2. Suburb?	State Forest name: Nearest town or locality: Nearest ambulance station:	South Brooman East Lynne Batemans Bay
3. Address?	Old Princes Hwy	
4. Nearest road junction/cross street?	Old Princes Hwy/Princes Hwy	
5. Local government area?	Shoalhaven	
6. Nature of the problem?	Describe the accident, number and condition of casualties	
7. Where is the accident?	Refer to safety meeting point above	
Directions to navigate from nearest ambulance station to the emergency meeting point. From Batemans Bay, travel north along the Princes Highway for approx 18.5 km and turn left into The Old Highway. Travel a further 5 km to Barkshed Road intersection on the left.		
8. 4WD ambulance required N	CB radio channel to use:	
9. Injuries?	Give detailed information about the condition of the casualty (do not mention names over radio system)	
10. Your name and call back number:		

Forestry Corporation NSW (FCNSW) Traffic Control Plan 78 & 57: Harvesting within 2 Tree Lengths of Old Princes Hwy (Shoalhaven Shire Council/FCNSW Rd) (modified from RTA Traffic Control at Work Site TCP 78 & 57)

Speed limit not posted, assumed maximum 100km/hr



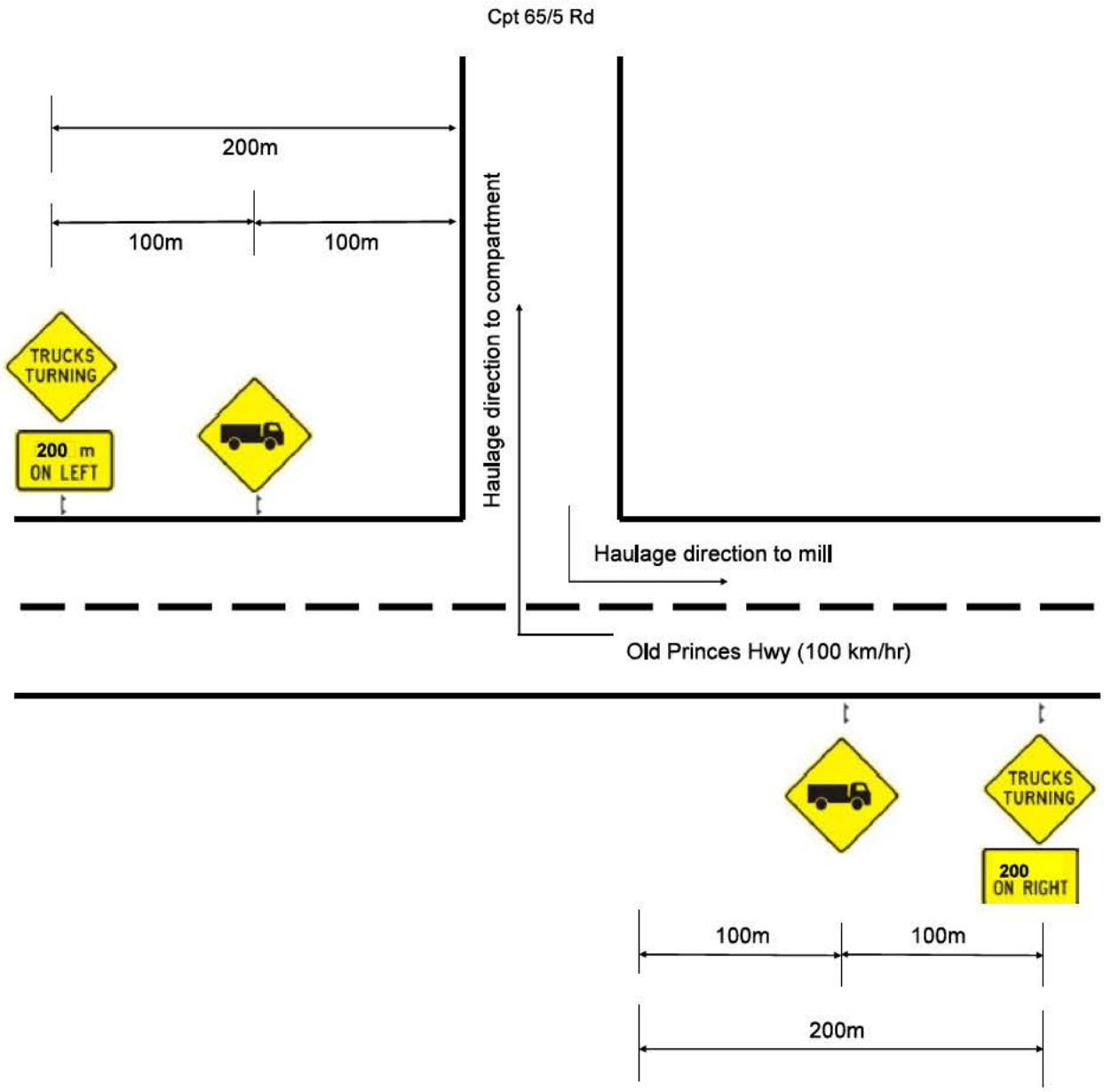
FREQUENTLY CHANGING WORK AREA
2 LANE/2 WAY
ADT < 3000
Prepared by Kate Halton,

Red Card Certificate No. 5192055074 on 04/02/2016

Notes:

1. Each stoppage less than 5 minutes.
2. Traffic controllers to stop traffic for duration of work and then direct traffic past work area, once tree falling has ceased and any debris has been cleared from road.
3. Traffic controllers and tree faller to maintain radio contact so that no tree felling is occurring while traffic is let through.
4. Traffic controller must have sight distance to oncoming traffic of at least 150m.
5. Traffic control plan must be mirrored for traffic approaching from the opposite direction.
6. If worksite is kept less than 500m long, repeater RA-212 (60 Road Work) signs are not required.
8. Ensure dumps or other road intersections are not within the traffic control area, unless they are closed off with a road closure barricade.
9. There are properties on the southern/western side of Old Princes Hwy. The TCP must either be set up either side of a driveway. If this is not practical it must be set up in such a way that traffic controller has line of site to drive ways and can signal driver to stop from existing their driveway if tree falling is taking place. A courtesy door knock or phone call of the affected properties must be undertaken every morning traffic control is in place to notify the neighbours that traffic control will be in place.

Forestry Corporation NSW TCP 195: Intersection of Old Princes Hwy with Cpt65/5 Rd Road (modified from RTA Traffic Control at Work Site TCP 195)



Notes:

(1) Log Haulage - Intersection of Old Princes Hwy not signposted -assumed 100km/hr, Shire Rd) with 65/5 Rd (Forestry Corporation Road). Sight distance restricted to <200m on both approaches to this intersection.

LONG TERM USE
ADT < 1500, <20 Truck Movements, Sight Distance Restricted
Prepared by Kate Halton, Red Card Certificate No. 5192055074 on 30/03/2016

Silviculture and Harvesting Prescriptions

Year	1964	1965	1968/72	1978	1980	1989	1990	2010
TSI	X	X	X	X	X	X	X	X
HR Burning	X	X	X	X	X	√	√	√
Wildfires	√	√	√	X	√	X	X	X
Logging m^3	X	X	240	140	X	1500	6000	7000

√ - applies, **X** – not applicable

Compartment	Resource Unit	No. of Sweeps	BA Average (m^2/ha)	BA Range (m^2/ha)
65	1 & 2	12	31	20-40

Silvicultural Planning

Single Tree Selection

The STS tract (109 ha) is a predominantly mixed aged mature forest and will be harvested under a light (RU3) and heavy (RU1) single tree selection (STS) regime. The objective within the 109 ha harvest area for this operation (resource unit 1 and 3) is to remove 25% (RU3) and 45% (RU1) of the basal area to create canopy openings for regeneration, whilst retaining and minimising damage to young regenerating stems, seed trees, habitat and recruitment trees.

It is envisaged that the next harvesting operation in this compartment would be on average 30 years time.

The STS tract for IFOA purposes includes the harvest area/resource units 1 and 3 of the compartment as indicated on the HPOM.

Single Tree Selection (STS) must remove no more than 45% of the basal area (BA), while retaining a minimum BA of 10m^2 per hectare within the tract.

Resource Unit (Refer to HPOM for detail)	Species Composition	Stand Structure and Condition
1	Predominately consists of Blue gum, Spotted gum, Ironbark, Silvertop Ash, Sydney Peppermint, White Stringybark, Blackbutt, Rough barked apple. River Peppermint, some Bangalay and Forest Red Gum occurs within the flats adjacent to Cockwhy Creek.	• The compartment underwent an AGS harvesting operation in 2009. Except for on the ridge tops, lower slopes adjacent to Cockwhy Creek and the northerly facing aspects, regeneration in the AGS plots has not been successful. Throughout the compartment vine has encroached nearly the entire compartment (except for in the dry northerly aspects). The timber stand is overmature and has reached growth potential.

Harvesting Prescription

Throughout the compartment (especially in moister south aspects) vine has become dominant in the understory and mid story. Many of the 2009 AGS gaps have resulted in regeneration failure and there is limited opportunity for the chance of natural regeneration due to the prevalence of vine and bracken. During the planning and mark up of compartment 65 a basic regeneration survey was undertaken in a proportion of the gaps. When mark up is complete the HC will be provided a map showing where the regeneration surveys have been undertaken. The HC must use the results of the pre harvest regeneration survey to break the harvest area up into discrete zones of either 'regeneration success' or 'regeneration failure'. The table below lists a different harvest prescription for the regeneration success and regeneration failure areas. The HC must assess zones of regeneration success to determine if post log burning can be undertaken without damaging/killing the regeneration and when this cannot be done the HC must instruct the contractor to construct mineral earth breaks around these zones.

It is recommended that during the operation FCNSW staff pick enough seed from the fallen heads to sow the coupe in case there is insufficient natural regeneration after this planned harvest event.

esource Unit (Refer to HPOM for detail)	% of Harvest Area	Silvicultural Treatment
1	71%	Zones of regeneration success: STS heavy: • Retain and protect from harvesting/fire damage: -poles/advanced growth (<40cm DBHOB) with good form and vigour, -habitat and recruitment trees as per TSL, • Retained trees should be evenly spaced throughout the resource unit. • Ensure no more than 45% of the BA within the resource unit is removed, while retaining a minimum BA of 10m^2 per hectare within the tract. All other products should be removed markets permitting. Zones of regeneration failure: Apply the above conditions as well as: • Ensure seed trees are retained evenly spaced throughout the harvest area at spacing no further than every 1-1.5 tree height (H and R trees may count towards seed trees). Trees selected for seed trees must be those with the largest crown and highest capsule density as well as being representative of the species contained within the stand. • Target trees containing vine for removal and use machinery to break vine up. Heap heads, vine and other debris into rough heaps to facilitate an intense post log burn to facilitate seed bed creation. This is especially important in the moister south aspects where burning had previously proved difficult in this compartment.
2	22%	Area was harvested in 2009 AGS operation. Exclude from harvesting. The BA in this area does not contribute to the basal area retention across the tract.

		Zones of regeneration success: • No snigging through these areas (unless it can be done between pockets of regen without causing damage). • Directional falling techniques must be used to fall timber away from these areas. Zones of regeneration failure: • It is encouraged to snig through these areas. Where ever practicable the contractor should use the blade on the skidder or dozer to break up the vine and heap the vine and other debris with the heaps heads in RU1 as well as to prepare a the soil for a suitable seed bed.
3	7%	STS light (there are no regeneration or vine issues in this resource unit): • Retain and protect from fire/harvesting damage: -habitat and recruitment trees as per TSL, -retain additional dominant and co dominant trees of good form and vigour to ensure the total BA removed across the resource unit is no more than 25%. • Retained trees should be evenly spaced throughout the resource unit. • All other products should be removed.

Note: The area of each silvicultural treatment must be mapped and recorded in the Post logging information section of this plan.

Special Requirements

Noxious Weeds/Disease/Pests Hygiene Requirements

Compartment 65 is within Shoalhaven Shire Council which is a designated red zone for Myrtle Rust. In order to prevent the spread of Myrtle Rust all harvesting machinery, equipment and vehicles heading west from Shoalhaven Shire Council or south into Victoria must be inspected for vegetation containing Myrtle Rust. If present, the vegetation must be removed from the harvesting machinery, equipment or vehicle prior to leaving the compartment.

Permanent Growth and Research Plots

Any inventory plots located during the harvesting operation are to be treated the same as the surrounding area.

Walking Track

A walking track occurs at the southern end of the compartment and is used by members of the public for bush walking and horse riding (refer to HPOM). No snigging along the section which runs parallel to Cockwhy Creek is permitted. Along this section ensure heads/debris are removed from the track (this is to maintain the track for walking as well as to ensure it is a suitable burning control line). The section which runs up the hill to dump 10 is predominately an existing snig track and may be used to snig timber in this operation. The contractor must ensure that the track remains relatively clear of debris and heads so that it can still be used for walking after the operation is complete.

Road Works

Except for the section of Old Princes Hwy South of C1 (Shoalhaven Shire Owned and maintained), within the compartment boundary only roads that are shown on the HPOM as EPL standard or sealed may be used for haulage.

Private Property

Private property occurs adjacent to the southern and eastern boundaries of the compartment, as indicated on the HPOM. Private property owners have been notified of the scheduled harvesting and post-harvest burning. The table below lists neighbours who adjoin Compartment 65:

- No harvest disturbance is permitted on private property.
- Harvesting debris must not be left within five metres of the boundary fence lines.
- Any damage to fences must be repaired by the contractor.
- Access roads must be maintained free of debris and in a trafficable state.
- Prior to harvesting the area serviced by dump 11 the HC must contact the owners of Lot 452, Lot 131 and Lot 133 regarding the post log burning control lines and to discuss with the owners of Lot 133 them temporarily moving their horses.

Occupation Permits

Apiary

4 apiary sites provided in the table below are located within the planning unit. Contact details are available from the Batemans Bay office.

Name	Site Number	Contact number

- The HC must provide the apiary permittees with at least two weeks advance notice when bee boxes need to be removed or relocated.

Underground Cables

A dial before you dig request query of the compartment indicates that underground Telstra cables are present on the eastern side of the compartment. Dial before you dig and field markers (where located) have been used to indicate the approximate location of the cable on the HPOM. Prior to any harvesting or roading activity taking place in the vicinity of the cables, the HC should inspect the area for markers or other evidence of the cables and flag with marking tape.
When carrying out harvesting or road maintenance activities near cables, minimise ground disturbance across or along and increase depth of earth cover if required. Cpt 65/5 Road crosses the cable at one location. Prior to conducting road maintenance activities the HS should consider engaging a cable locator to determine a more precise location of the cable to ensure it is not disturbed.

From time to time above ground infrastructure associated with the cables occurs. Where this infrastructure is detected, the FT should pass the location and details on to the burning supervisor who should consider if extra protection measures (eg rake hoe line) are required.

Any damages to cables must be immediately reported to Telstra on 13 22 03.

Forest Management Zoning

FMZ 3A Harvesting Excluded, FMZ 3B-Special Prescriptions (visual and FMZ 4-General Management (normal harvesting prescriptions apply) occur within the compartment. Refer to HPOM for more detail.

FMZ 3B (Visual) – A visual protection zone exists in the southern section of the harvest area. Refer to the harvesting prescription section of the harvest plan for conditions relating to this zone.

FMZ 3A -– Logging operations are restricted as per condition 18(b) of the IFOA. Refer to Harvest Plan Standard Conditions for Hardwood Forest Operations in South Coast for detail of what logging operations are permitted in this zone.

IFOA Required Approval of Forestry Activities

Planning Supervisor approvals have been obtained for routine road maintenance and log haulage FMZ 3A where Old Princes Hwy passes through this exclusion at two locations shown on HPOM. No other crossings of these features are approved. Forestry Operations within the plan area must minimise impacts to the exclusion zones and meet the requirements of the EPL and General Exclusion Zones in section of this plan.

Construction or re-opening of roads or snig tracks may occur with prior approval in the following exclusion zones:

- Planning Supervisor approval required for Stream Exclusion Zones.

During the harvesting operation the HC must identify any crossings required in these exclusion zones and contact the Planner to obtain required approvals.

Cultural Heritage

Non Indigenous Cultural Heritage 65/1 road is an historic coach trail. Harvesting should be conducted in such a way that this road is minimally disturbed. The following prescriptions apply:

- Trees to be fallen away from the trail.
- No snigging along the trail.
- Snigging across the trail permitted at designated crossing points.
- Snigging crossing points must be selected at locations where damage to the cut/fill/pavement of the trail is minimised.
- Snigging crossing points must not occur at locations where the trail is constructed from packed rock.
- Rehabilitation and drainage must be installed to prevent concentrated flows onto the trail.

Flora and Fauna

Species adequately covered by general prescriptions:
The following species have been recorded in or around the compartments and are adequately covered by the general prescriptions. No further protection measures are required for these species:
Sooty Owl (*Tyto tenebricosa***), Glossy Black-Cockatoo** *(Calyptorhynchus lathami)*, **Eastern False Pipistrelle** *(Falsistrellus tasmaniensis)* **Common Bent-wing Bat** *(Miniopterus schreibersii)*, **Greater Broad-nosed Bat** *(Scoteanax rueppellii)*, **Grey-headed Flying Fox** *(Pteropus poliocephalus)*, **Southern Myotis (***Myotis macropus),* **Little Lorikeet** (*Glossopsitta pusilla,* **Little Eagle** (*Hieraaetus morphnoides*) and **Gang Gang Cockatoo** (Callocephalon fimbriatum).

Tree Retention

Zone	Hollow bearing Trees/ha	Recruitment Trees /ha	Protection of Retained Trees	Dead Standing Trees (only if safe)	Significant Food Resource
Regrowth	**Up to 5**	**1 for every tree retained under 5.6d**	√	√	√
TSL condition	5.6d	5.6e	5.6h	5.6f	5.6 g

General exclusion zones
General exclusions as listed below are shown on the HPOM.

Feature/Condition	TSL cond'n	Occurs within Planning Unit
Rainforest	5.4	Has been assessed & is unlikely to occur in the field. May require further investigation#.
Riparian Protection Zones	5.7	Yes Based on spatially corrected LIC drainage.
Ridge & Headwater Habitat	5.8	Yes Based on spatially corrected LIC drainage not shown on HPOM as is contained within other exclusions.
Wetlands	5.9	Has been assessed & is unlikely to occur in the

		field. May require further investigation#.
Heath and Scrub	5.10	Has been assessed & is unlikely to occur in the field. May require further investigation#.
Rocky Outcrops and Cliffs	5.11	Has been assessed & is unlikely to occur in the field. May require further investigation#.
Endangered Ecological Community	NA	Has been assessed as a risk that River flat Eucalypt Forest EEC on Coastal Floodplains may occur in the field. May require further investigation#. Note the area shown on HPOM has not been verified at planning stage and must be marked as mapped. **Harvesting, harvesting machinery and post harvest burning must be excluded from all areas of EEC.**

#FT/HC will continue to conduct on the ground mark-up & searches and report back to foresters/ecologists any features requiring further investigation.

General Threatened Flora and Fauna Prescriptions

Feature	Records in 65	Licence conditions under the TSC Act
Threatened Frog General Protection Measures	No	5.12
Bird Nest and Roost Site Protection	No	5.13
Tree Bat Roost Protection	No	5.14.1
Subterranean Roost Protection	No	5.14.2
Protection of flying-fox Camps	No	5.14.3
Burning	Net planned area	5.16
Ground Habitat Protection	Net planned area	5.17

Species & Site-Specific Threatened Flora and Fauna Prescriptions

The following species have been recorded within or nearby the area and the associated prescriptions must be implemented:

Threatened species and habitat features within trigger distance	Records in 65	Licence conditions under the TSC Act or relevant Site-specific prescription
Powerful Owl *Ninox strenua,* **Masked Owl** *Tyto novaehollandie.*	Yes No	6.4 *Owl Landscape Exclusion Zones occur in compartment 65.*
Spotted tailed Quoll *Dasyurus maculatus*	No	6.10
Koala *Phascolarctos cinereus*	Yes	6.11 Previous reliable Koala surveys were done in 2009.
Yellow-bellied Glider *Petaurus australis*	Yes	6.13

Threatened species and habitat features within trigger distance	Records in 65	Licence conditions under the TSC Act or relevant Site-specific prescription
Golden-tipped Bat *Kerivoula papuensis*	Yes	6.14 One 30m exclusion on a first order stream occurs.
Genoplesium vernalis	No	6.16.2 Apply 10m exclusion around individuals (no specified forestry activates in exclusion zone). Apply additional 10m buffer zone around the exclusion zone on individuals (limited tree removal and snigging permitted, hazard reduction burning excluded to greatest extent practical). To assist burning crew exclude burning from buffer zone, minimise accumulation of debris around the base or retained trees.
Eastern Pygmy Possum *Cercartetus nanus*	Yes	Apply Site Specific Threatened Species Licence Prescription: 100m exclusion around all records (hard line). No Specified Forestry Activities (including post-log burning) are permitted within the exclusion zones. For the remainder of the harvest area within cpt 65 ground habitat (especially of Proteaceous and Myrtaceous species such as *Banksia, Eucalyptus, Grevillia* and *Xanthorrhoea*) must be protected from Specified Forestry Activities to the greatest extent practical

Fisheries Licence Conditions

There are no known records of threatened fish species or class 1 or 2 aquatic habitat relevant to this operation. The conditions of the fisheries licence are not triggered for this operation.

Soils and Water Protection

Refer to EPL Booklet & Standard Plan Conditions

Spatially Corrected LIC Drainage

Spatially corrected LIC drainage has been built using LiDAR derived drainage in compartment 65. Protection zones and filter strips have been rebuilt based on spatially correct LIC drainage and an additional mean stream bed width included for each stream order. Stream based Owl Landscape, Ridge and Headwater and FMZ 3A have been rebuilt based on spatially corrected LIC drainage (mean stream width is not built in to these exclusions).The FT or Harvest Contractor may use the HPOM and GPS mapping to locate exclusion boundaries or traditional measure and mark up methods. If

GPS mapping is being used to locate boundaries, as a minimum the FT must mark with flagging tape all unmapped and 1st order drainage features.

Site-specific EPL Conditions

Elements	Conditions
Unmapped Drainage Lines	EPL does not apply: refer to drainage feature protection below.
Drainage Feature Protection	See HPOM for widths
Inherent Hazard Class	2
Dispersible Soils	No
Seasonality Harvesting Exclusions	No
Seasonality Burning Exclusions	No
Log Dumps	Refer relevant conditions for IHL
Snig Tracks	Refer relevant conditions for IHL
Roads	See Schedule 5 of EPL Booklet
Slope limits for harvesting	Refer to Schedule 4B.3 of EPL

Drainage Feature Protection

Filter strips (EPL), Protection Zones (EPL), Operational Zones (EPL), Protection Zones -hard (TSL) and Protection Zones -soft (TSL) must be retained along all drainage lines, prescribed streams and watercourses within the net planned area of the compartments at minimum widths as stated in the Table below.

Table 1: Minimum filter strip, protection zone and operational zone widths for mapped and unmapped drainage lines, prescribed streams and watercourses in hardwood forests in Inherent Hazard Level 1 & 2 (metres – measured along the ground surface)

Stream Order	EPL Filter Strip TSL Protection (hard)	EPL Protection Zone TSL Protection* (soft)	EPL Operational Zone	Drainage Feature Protection: FT/HC marking instruction
Unmapped	**N/A#**	**N/A#**	**N/A#**	**5m (Red)**
1st order	**5**	**5**	**10**	**10m (Pink)**
2nd order	**5**	**15**	**10**	**20m (Pink)**
3rd order	**5**	**25**	**10**	**30m (Pink)**
4th order +	**5**	**45**	**10**	**50m (Pink)**

for this operation FCNSW has chosen to harvest this area without EPL coverage. All EPL conditions continue to apply **except** for the rules applying to filter strips, protection zones and operational zones of the **unmapped drainage lines**. Refer to Best Management Practices for unmapped drainage lines in the standard conditions. Harvesting of unmapped drainage lines, MUST NOT occur in unmapped drainage lines which are running or holding water. It is the responsibility of the HC to inspect each unmapped drainage line prior to harvesting it, to determine if it is running or holding water.

Log Dump Location

11 log dumps are indicated on the HPOM. Field location of log dumps must utilise the most level site available consistent with the location indicated on the HPOM. Inherent hazard level 2 Conditions 26, 27, 28, 30, 31 and 33 of Schedule 4 of the EPL must apply.

Drainage Feature Crossings

Two snig track crossings (S1 and S2) and two road crossings (C1 and C2) are approved for use on drainage features. (Refer to HPOM). Road crossing details are contained in Attachment 2 of this Plan. Snig track crossing details are provided below:

Crossing Name & Coordinates	Crossing derails	Required Works
S1-new Easting 251665 Northing 6061008	Mapped 2nd order drainage line, occurs as a drainage line in the field. Natural Causeway crossing. Not class 1 or 2 Fisheries Licence aquatic habitat. Class 4 fish passage class: unlikely fish habitat.	Construct natural causeway crossing (no sidecut expected) as per EPL. Construction should minimise disturbance and clearing and be at right angles to the flow unless and angled approach results in reduced disturbance. Armour depression with rock/gravel if required in wet conditions. Install cross banks/rollovers on completion of use within timeframes and spacing's specified in EPL.
S2-new Easting 251801 Northing 6061050	Unmapped drainage line, occurs as a drainage line in the field. Natural Causeway crossing. Not class 1 or 2 Fisheries Licence aquatic habitat. Class 4 fish passage class: unlikely fish habitat.	Construct natural causeway crossing (no sidecut expected) as per EPL. Construction should minimise disturbance and clearing and be at right angles to the flow unless and angled approach results in reduced disturbance. Armour depression with rock/gravel if required in wet conditions. Install cross banks/rollovers on completion of use within timeframes and spacing's specified in EPL.

Mass Movement

Compartment 65 is not in an area identified as having a potential for mass movement. No specific prescriptions relating to mass movement/snigging are required.

Suitability of existing log dams and gully stuffers

There are no known log dams or gully stuffers on snig track or road crossings in the compartments.

Condition 47 of Schedule 4 of the EPL must apply.

Post Log Burning Control Lines

To assist the post log burning crews prevent fire from entering areas to be excluded from burning, control line construction must be undertaken concurrently with harvesting. Where possible snig tracks patterns should be designed to double as control lines. Control lines must be located as close as reasonably practical to the feature to be excluded from burning. The HC must assess the areas harvested, snig track network and existing roads to determine if there are sufficient control lines in place and where required instruct the contractor to construct additional mineral earth control lines to supplement these. The HC must record instances where it was not possible to construct a suitable control line close to the feature to be excluded and recommend harvest areas which should be excluded from the post log burning operation due to inadequate control lines.

The table below lists critical boundaries in compartment 65. Where possible design snig track patterns so they double as bare earth containment lines as close as possible to these boundaries. Where this is not practical, it is NOT necessary to construct a bare earth break along boundary of the exclusion; the practice of no direct ignition will be followed.

Critical boundary	**Completed** **Yes /No**
Exclusions for Golden Tipped Bat and Owl Landscape/FMZ 3A.	
Sections of exclusion for EEC and Eastern Pygmy Possum where there is not a proposed control line shown on HPOM.	

The table below lists critical boundaries in compartment 65. Where possible design snig track patterns so they double as bare earth containment lines as close as possible to these boundaries. Where this is not practical, HC must instruct contractor to construct a bare earth break (drained as per EPL snig track conditions) as close as possible to the critical boundary.

Critical boundary	**Completed** **Yes /No**
Private Property.	
Sections of EEC where there is a proposed control line are shown on the HPOM (note the proposed control line east of S2 parallel to Cockwhy Creek is an existing overgrown side cut, this should be reopened, also part of the walking track can be used for a control line, the HC must ensure it is kept clear of debris).	
Sections of exclusion for Eastern Pygmy Possum where there is a proposed control line are shown on HPOM.	
Advanced regeneration within previous AGS areas.	

Pre-Operational Briefing

I acknowledge that I have received a copy of the Harvesting Plan for Compartment 65 in South Brooman 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 HS or his/her delegate.

Position	Name	Signature	Date

Post Harvest Mapping Features Confirmation Checklist

Feature	Planning Updates	Reason (Error/New)	GIS update tool completed?	Harvesting Updates	Comments
Soil Regolith	No				
Mapped Drainage	Yes	LiDAR corrected	NA		
Rainforest	No				
Rocky outcrops	No				
Wetlands	No				
Cultural Heritage	No				
Existing Roads	Yes	Error	Yes		
New Roads	No				
Heath	No				
Powerlines etc	No				
Other (EEC)	Yes	Field verified			

HC Feature Usage Record

Dates of commencement and cessation of logging

Date of commencement of logging:_____

Date of cessation of logging: _____

DUMP USAGE RECORD

- Record the commencement and completion of harvesting at each dump
- Record the occurrence of temporary stopping of harvesting at each dump.

Dump number	Start date	Finish date	*Track drainage completed within 2 days (yes/no)	Date of temporary cessation	**Temporary track drainage completed within 5 days (yes/no)	Date resumed

*At completion of snig track/dump, track drainage must be completed within **2** days unless soil is saturated.

*At temporary cessation of snig track use, track drainage must be completed within **5** days unless soil is saturated.

Situations where drainage could not be completed due to saturated soils must be recorded in HC/FT Notes.

HC/FT Notes

Date	Event	Signed

HC/FT Notes (continued)

Date	Event	Signed

HC/FT Notes (continued)

Date	Event	Signed

HC/FT Notes (continued)

Date	Event	Signed

HC/FT Notes (continued)

Date	Event	Signed

Clearance Certificate

COMPARTMENTS: 65 SOUTH BROOMAN STATE FOREST

To .....HC

I request approval for me to move my logging crew and all associated machinery from the above-mentioned area to the next compartment in accordance with Section 3.5 of the Forest Practices Code.

I certify that:

(a) all permanent roads, trails and mitre drains have been cleared of harvesting debris;
(b) butt damage to retained trees has been kept to acceptable limits;
(c) all trees marked for removal have been felled;
(d) utilisation limits have been satisfactorily met;
(e) stump heights conform to requirements;
(f) all hanging trees have been felled and brought down;
(g) all log dumpsites have been satisfactorily restored as required;
(h) harvesting debris is not accumulated around retained trees;
(i) all accumulated litter has been disposed of properly;
(j) all filter and buffer strip requirements have been complied with;
(k) all snig track, extraction track and temporary logging road drainage has been installed satisfactorily and other required rehabilitation work has been completed;
(l) all necessary repairs to damaged roads, signs, fences and other structures have been carried out.
(m) **_____ (insert quantity) rubber flaps have been recovered in a satisfactory condition and reported to Roading Coordinator for collection.**
(n) all machinery, equipment and vehicles have been checked and are free of noxious weeds, diseases and pests.

I believe that I have met all my obligations under the conditions of the Contractors Licence, the EPL and TSL which apply to the compartment just completed, as stated in this Harvesting Plan.
Signature.....Name.....…….....Date .....
Contractor

As a result of inspections of the logging operations made in accordance with this Harvesting Plan, I am satisfied that, to the best of my knowledge, the contractor responsible for this harvesting operation has satisfactorily completed all work and approval is given for her/him to remove her/his machinery and equipment and leave the area/commence operations in another compartment.

This clearance does not release the contractor from any obligation to undertake any remedial work if subsequent deficiencies are shown to result from inadequate practices during the harvesting operation, which are found during any inspections of the area made within 12 months of the date of this post-harvesting inspection.

Last inspection was made on .....(Date)

Signed .....(Date).....
HC

Post Logging Information

Record any circumstances of significance relating to the harvesting of this compartment. Please draw or include any annotations on the attached operation scale map.

Summary of silvicultural treatment

Treatment type	Area (ha) subject to treatment (HC estimate)	Number of AGS gaps created	Comments
Australian Group Selection			
Single Tree Selection			
Thinning/Spacing			
Post Harvest Silviculture			

Actual area harvested (record on attached HPOM) Give reasons for harvestable areas that were not harvested (eg. Too steep, defective timber). Make reference to map.

Post Logging Basal Area sweeps

Sample point	GPS (GDA 94)	Pre-harvest (B) BA m^2/ha	Post-harvest(A) BA m^2/ha	Difference (D) (B – A) m^2/ha	% BA removed D/B x100	Comments
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
Total averages						

Comply with maximum STS BA removal of 45% or Thinning BA removal of 60% Y/N

Possible next cut (tick appropriate boxes)

Main product type	Anticipated volume		
	H	M	L
Girders			
Veneer			
Poles/piles			
Quota			
Smalls/Thinnings			
Salvage			
Pulpwood/chipwood			

Time to next harvest	
0 to 5 years	
5 to 10 years	
10 to 20 years	
20 to 30 years	
30 plus years	

ATTACHMENT 2 ROADING PLAN

Summary of Roading Requirements

Feature	Details	Works Required
Existing roads to be used.	7830/6	Yes
New roads to be constructed	0	NA
Existing crossings used	2	Yes
New crossings to be constructed	0	NA
Length of road >10°	140m	NA
Borrow pits and gravel pits	0	NA
Mass movement prescriptions apply	No	NA
Dispersible soil conditions apply	No	NA
Seasonality provisions apply	No	NA

Note: Maintenance works not completed by Roading Coordinator must be recorded and passed onto the HC for completion during harvesting and documentation.

The start and finish dates of all maintenance and construction must be recorded on the individual roading sheets along with other relevant changes or explanations.

All rubber flaps on minor forest roads must be removed and replaced with trafficable rollover banks on completion of operation.

CHECKLIST OF WORKS REQUIRED ON ROADS & CROSSINGS

Road/Crossing Name	Works Required	Date Started	Date finished	Signature
Old Princes Hwy (4900m)	Grading/clearing not required. Install new pipes/replace broken pipes and clean existing pipes as per roading map and marked in field. Add dissipaters or maintain/repair existing dissipaters as per roading map. At section with slope over 30 degrees, add windrow and dissipater to stop water pooling on section where fill has slumped. Shown on roading map. Open existing mitres and spoons. **RC/HC Comments:**			
65/2 Rd (1250m)	Grade/reshape entire length. Clear roadside entire length (small regen but dozer recommended). Clear pavement of some wattle regen. Remove rollovers, open mitres & utilise crests, saddle and crossfall where available for drainage. Install additional drainage (mitres/RU) to EPL spacing.* 3 sections over 10 degrees occurs shown on roading map, no additional works required. **RC/HC Comments:**			

65/3 Rd (1040m)	Grade/reshape entire length. Clear roadside entire length (small regen but dozer recommended). Clear pavement of some wattle regen. Remove rollovers, open mitres & utilise crests, saddle and crossfall where available for drainage. Install additional drainage (mitres/RU) to EPL spacing.* 1 section over 10 degrees occurs, shown on roading map, no additional works required. **RC/HC Comments:**			
65/4 Rd (300m)	Grade/reshape not required. Some roadside clearing required. Install additional drainage (mitres/RU) to EPL spacing.* Realign where road intersects with Old Princes Hwy to allow for safer truck turning. **RC/HC Comments:**			
65/5 Rd (150m)	Grade/reshape entire length. Some roadside clearing. Open mitres. Install additional drainage (mitres) to EPL spacing.* Minimise works at intersection with Old Princes Hwy (where Telstra Cable is present). Consider employing cable locator to ensure works will not damage the cable. **RC/HC Comments:**			
65/6 Rd (150m)	Nil works required. Grading not required and drainage not required for the length and grade of this road. **RC/HC Comments:**			

* The HC/RC is responsible for assessing spacing of existing drainage structures and ensuring additional drainage is installed to EPL specification, this has not been done at planning stage.

Crossings

Crossing Name & Coordinates	Crossing derails	Required Works
C1-Existing Stable Log Deck Bridge 251327E 6060463N	Mapped 4th order drainage line, occurs as a drainage line in the field. Not class 1 or 2 Fisheries Licence aquatic habitat. Class 2 fish passage class: moderate fish habitat (No instream works).	Reopen existing mitres which occur at 30m both sides of the road on both approaches to the crossing. Install silt trap at all 4 mitre outlets. Install grids (to prevent spoil/water flow onto bridge) at 5m either side of crossing with silt trapping at grid outlets. Seed/mulch disturbed areas. **RC/HC Comments:**
C2 Existing 450mm pipe with rock headwall. 251477E 6061218N	2nd order drainage line, occurs as a drainage line in the field. Not class 1 or 2 Fisheries Licence aquatic habitat. Class 3 fish passage class: minimal fish habitat.	Northern approach install mitres at approximately 15m either side, with silt traps. Southern approach, road slopes away, no 5-30m drainage required. Clean/unblock pipe, and replace broken section at outlet end. Seed/mulch disturbed areas. **RC/HC Comments:**

Roading Map

Compartment: 65
State Forest: SOUTH BROOMAN No: 830
Southern IFOA - South Coast
Map Sheet: KIOLOA 8926-1N

Scale: 1:8,500
Contour Interval 10m
Prepared By: Kate Halton
Version: 1

GDA
Forestry Corporation

Pipe broken, remove & don't replace
No dissipater needed
New dissipater
Clean pipe, if broken pull out but don't replace. No disipater needed
Pipe broken pull out & dont replace
Pipe broken pull out & replace & new dissipator
No disipater needed
Pipe broken, pull out & dont replace
Existing dissipater is ok
Burried pipe, pull out
No dissipater needed
Add dissipater if required
Pull out broken pipe
Add dissipater if required
Pull out broken pipe
No dissipator required
No dissipater required
New dissipater
New dissipater
No dissipater required
New dissipater
New dissipater
Existing pipe blocked, may be broken, replace if required. Repair/replace dissipater
New dissipater
New dissipator
No dissipater required
Existing dissipater ok
Add dissipater
New dissipater
Repair/replace dissipater
New windrow and disipater at outlet
New dissipater
New dissipater
No dissipater

Cpt 57/4 Road
Cpt 57/3 Road
Old Princes Highway
Cpt 63/2 Road
Cpt 63/3 Road
65/4 Rd
65/2 Rd
65/3 Rd
65/1 Rd
65/6 Rd
Cpt 66/1 Road
Cpt 66/2 Road
Cpt 66/6 Road
Cpt 66/3 Road
Cpt 66/4 Road
Cpt 66/7 Road
Cpt 64/5 Road
Cockwhy Creek
Pebbly Beach Road
Old Princes Highway Rd
S1
S2
C1

51 52 53 63 62 61 6061000N

Roading Legend
(Refer to HPOM for full legend)
Note: Flora and fauna have not been shown on this map

- Grade over 10 degrees
- New Mitre
- Existing pipe
- New Pipe

0 125 250 500 750 1,000 Meters