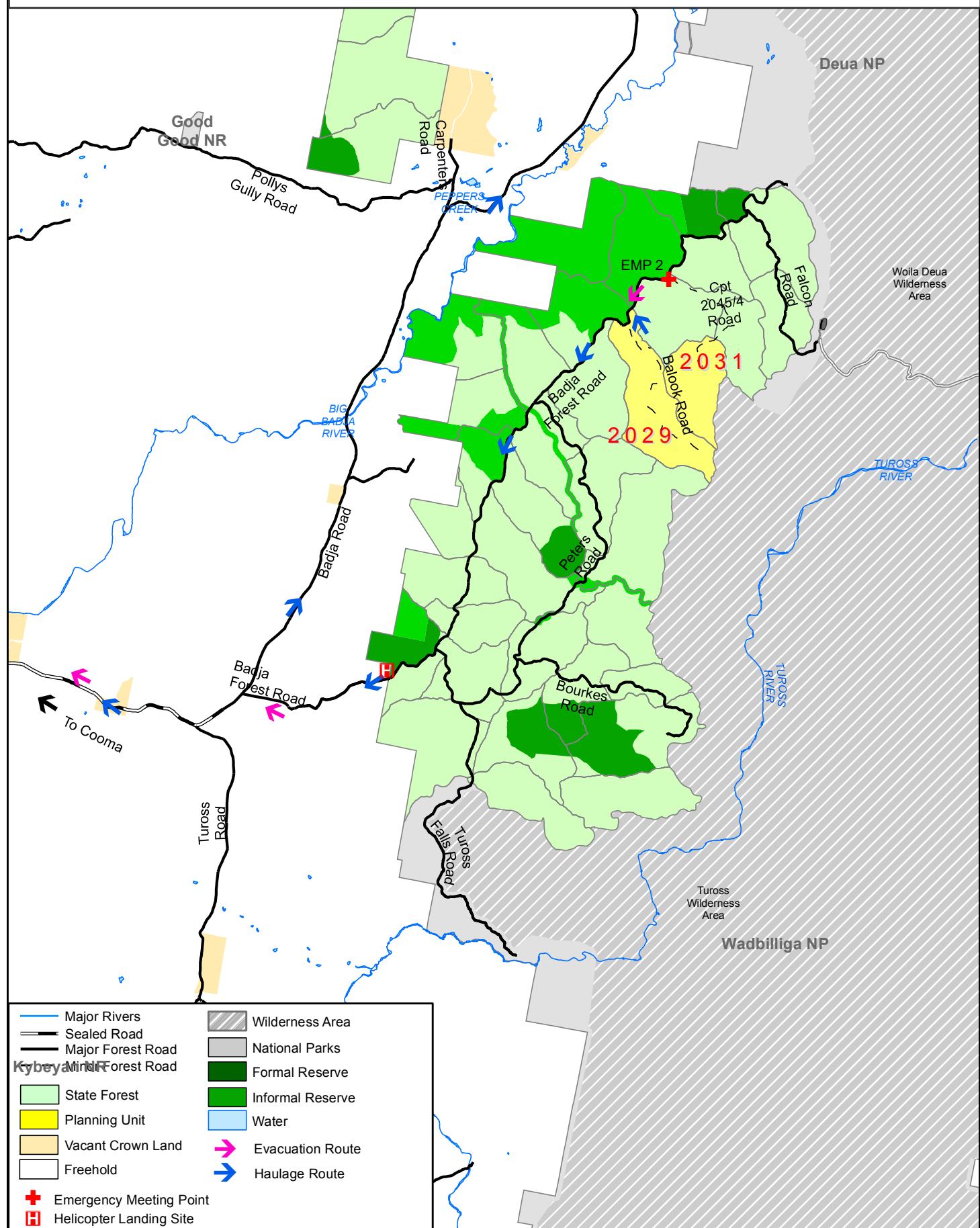
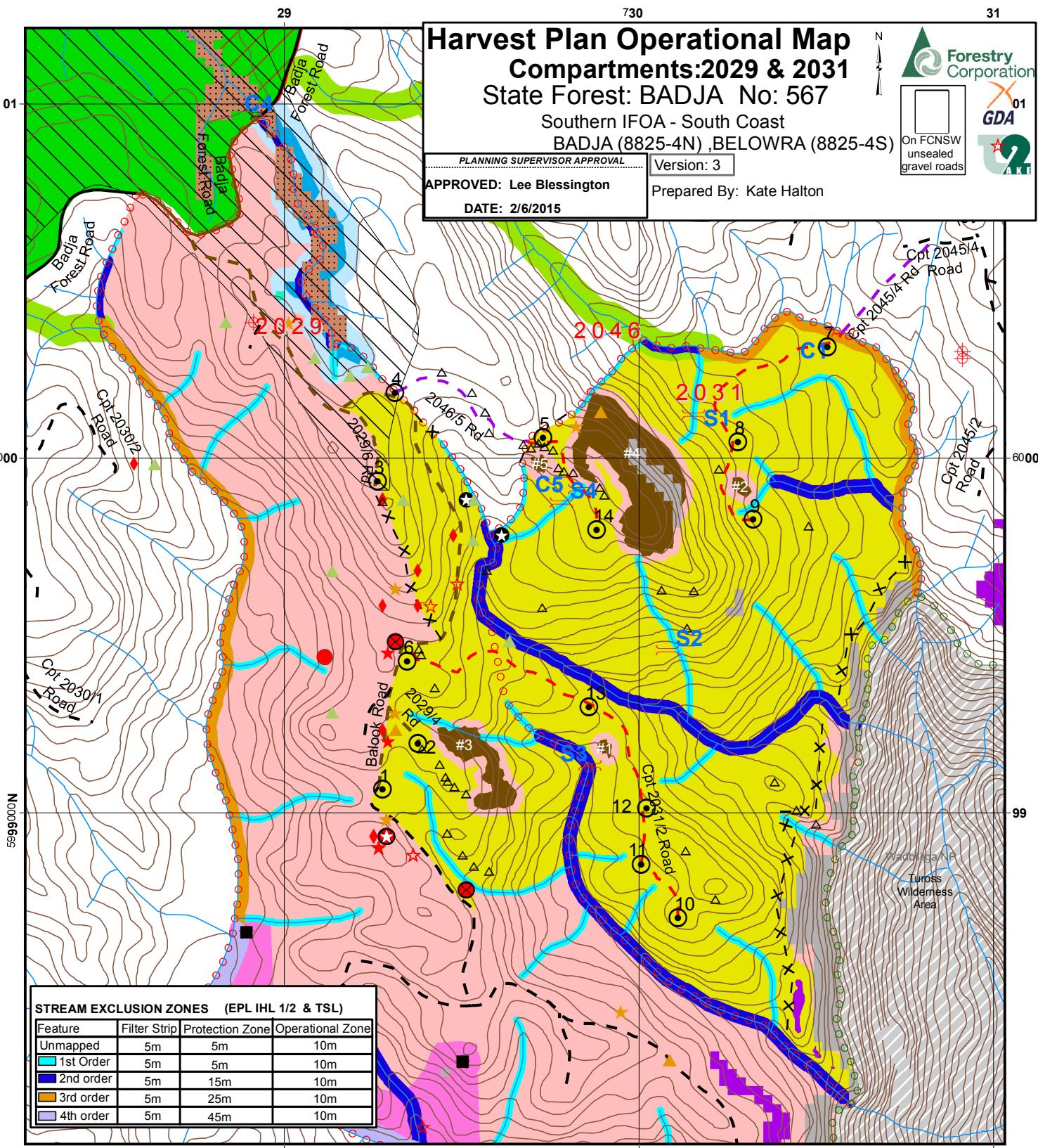


LOCALITY MAP Badja
Swamps NR
Compartments 2029 & 2031
Badja State Forest No. 567

Scale: 1:100,000





STREAM EXCLUSION ZONES (EPL IHL 1/2 & TSL)			
Feature	Filter Strip	Protection Zone	Operational Zone
Unmapped	5m	5m	10m
1st Order	5m	5m	10m
2nd order	5m	15m	10m
3rd order	5m	25m	10m
4th order	5m	45m	10m

LEGEND

LEGEND BOUNDARIES

BOUNDRARIES
 ○○○ State Forest Boundary
 ○○○ Compartment Boundary
 -x-x- Proposed Control Line

DUMPS & CROSSINGS

Existing Crop **HARVEST AREA**

FMZ 4 - RU1-STS Heavy

— Ma

- Minor Forest
- EPL Standard
- EPL Standard

- EPL Standard Existing (Minor)
- EPL Licenced (New Construction)
- EPL Licenced (New Construction)-Covered by separate road plan

Covered by separate read plan

Covered by separate road plan

Scale: 1:15,000
Contour Interval 10m

LEGEND

LEGEND **TERRE** National Park Estate/Wilderness Area

MAP FEATURES

○ ○ ○ Compartment Boundary
 -x-x- Proposed Control Line

DUMPS & CROSSINGS

- Temporary Dry Weather
- New Crossing
- Existing Crossing

HARVEST AREA

■ FMZ 4 - RU1-STS Heavy

ROADS

MAP FEATURES

- △ Rocky Terrain

FAUNA

- Sooty Owl
- ★ Spotted-tailed Quoll
- Spotted-tailed Quoll (Latrine Site)
- ◆ Powerful Owl
- ◆ Yellow-bellied Glider
- ★ Glossy Black-Cockatoo
- Koala

— Major Forest

Legend:

- Minor Forest
- EPL Standard Existing (Major)
- EPL Standard Existing (Minor)
- EPL Licensed (New Construction)
- EPL Licensed (New Construction)-Covered by separate road plan
- Squirrel Glider
- Flame Robin
- Olive Whistler
- Eucalyptus kartzoffiana* (Araluen Gum)

DRAINAGE

- Mapped LIC Drainage
- Murrumbidgee River Catchment (Class 2 Aquatic Habitat)

Scale: 0 125 250 500 750 1,000 Meters

Harvest Plan Forest Type Map

Compartments: 2029 & 2031

State Forest: BADJA No: 567

Southern IFOA - South Coast

BADJA (8825-4N), BELOWRA (8825-4S)

Version: 3

Prepared By: Kate Halton

Scale: 1:15,000

Contour Interval 10m

730

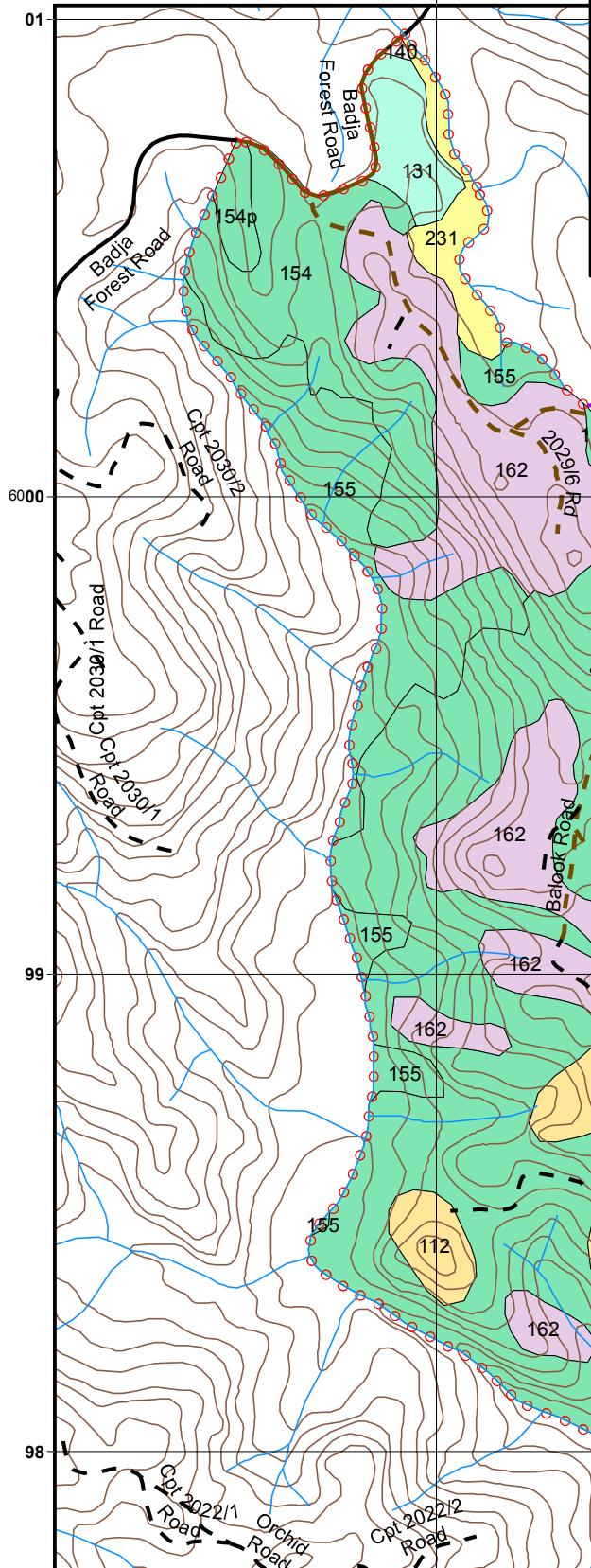
01

On FCNSW
unsealed
gravel roads

GDA

5

AKF



Harvest Plan Forest Type Map

Compartments: 2029 & 2031

State Forest: BADJA No: 567

Southern IFOA - South Coast

BADJA (8825-4N), BELOWRA (8825-4S)

Version: 3

Prepared By: Kate Halton

Scale: 1:15,000

Contour Interval 10m

0

125

250

500

750

1,000 Meters

0

125

250



HARDWOOD FORESTS- SOUTHERN IFOA SOUTH COAST HARVESTING PLAN

Badja State Forest - Compartments 2029 & 2031

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	1/5/2015	Date	1/5/2015

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 and Roading.

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 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.

Area Identification and Yield Estimates

State Forest	Compartment/s	IFOA Region	Management Area	Certification
Badja	2029 & 2031	Southern	Badja	AS4708:2007 ISO 14001

	Cpt 2029	Cpt 2031	Total
Plan Compartment ID	22062	22063	NA
Gross Area (ha)	278.7	173.8	452.5
Net Harvestable Area (ha)	224.1	139.1	363.2
Harvest Area (ha)	37.1	131.5	168.6
Poles, Piles, Veneer & Girders	0 m ³	0m ³	0m ³
Quota Logs (HQL)	500m ³	1800m ³	2300m ³
High Quality Small	10m ³	50m ³	60m ³
Salvage	900m ³	3300m ³	4200m ³
Pulp E1	240t	900t	1140t
Firewood/Misc	80t	300t	380t

Note: The yield estimates in the table above are derived from the following sources:

- Cpt 2031 Poles/piles/veneers/girder, E1 and Firewood/Misc: Plan of Operations.
- Cpt 2029 Poles/piles/veneers/girder, E1 and Firewood/Misc: Plan of Operations yield/ha figures for cpt 2031 were applied to this cpt.
- Cpt 2029 & 2031, HQL, HQS and Salvage: yield/ha figures from 2002 harvest of cpt 2029 combined with Plan of Operations figures for cpt 2031.

Slope Classes (percent of harvest area)

Slope Class	Cpt 2029	Cpt 2031
	% of harvest area	% of harvest area
0-20°	85.4	79.9
20-25 °	13.3	13.4
25-30 °	1.3	4.7



ATTACHMENT 1: SITE SAFETY PLAN

Worksite Information			
Is this Declared Hunting Area: Yes Is hunting excluded?: Yes		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 north west on 2045/2 and Old Falcon Road or north on Balook Road, turning left onto Badja Forest Road (FCNSW owned, then Cooma-Monaro Shire Council owned where the State Forest ends) then left or right onto Badja Road (Cooma-Monaro Shire Council Owned). Road intersections outside the control of FCNSW are not covered by this plan or any FCNSW Traffic Control Plan. Haulage contractors must abide by NSW road laws and standard operating procedures in relation to haulage routes outside the control of FCNSW.			
Name of on-site safety first aider/s			
Location of first aid kit			
SITE HAZARD & RISK ASSESSMENT NO.	CONTROL	WHO	IMPLEMENTED
1. Vehicle 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.		
2. Cliff lines & rocky very steep terrain	Operators to assess work site within two tree lengths to identify immediate hazards. Communicate to other operators and mark sites.		
3. Hazardous or dead trees	Refer to FCNSW operational safety standard OSS010. 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.		
4. Overhead hazards associated with dumps	Refer to FCNSW operational safety standard OSS010 . 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



MEDICAL EMERGENCY EVACUATION PLAN

Nearest reliable mobile phone reception (describe location)			
Next G Network: Good	GSM: N/A	Satellite: N/A	
GPS Lat/Long: 36° 07' 06" S / 149° 32' 57" E		MGA: 729430E 5999905N	Datum: GDA 94 Zone: 55
Location description: Various Points along Balook Road			
Emergency meeting point for ambulance / police (refer to attached locality map)			
GPS Lat/Long: 36° 06' 19" S / 149° 33' 01" E	MGA: 729672E 6001542N	Datum: GDA 94	Zone: 55
Location description: Intersection Badja Forest Road and Old Falcon Road.			
Helicopter landing place (refer to attached locality map)			
GPS Lat/Long: 36° 10' 52" S 149° 28' 30" E			
Location description: Private Property at the western entrance to Badja State Forest on Badja Forest Road.			
Procedures to obtain ambulance assistance			
<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> • 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) 		<p>Contact nearest Forestry Corporation office on:</p> <p>Channel: 236</p> <p>Telephone: 1300 880 548</p> <p>Give details of the situation and ask for a 000 call to be placed.</p>	
000 operator question:		Response:	
1. Police, Fire, Ambulance?		NSW Ambulance,	
2. Suburb?		State Forest name:	Badja
		Nearest town or locality:	Numeralla
		Nearest ambulance station:	Cooma
3. Address?		Badja Forest Road	
4. Nearest road junction/cross street?		Balook Road and Badja Forest Road	
5. Local government area?		Eurobodalla/Cooma	
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 Cooma, travel north east approx 35km along the Cooma-Numeralla Road. Turn right into Badja Forest road and travel a further 14km to Old Falcon Road intersection.			
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:			

Silviculture and Harvesting Prescriptions

Year	2002	2013
TSI	X	X
HR Burning	X	X
Wildfires	X	X
Logging m ³	6300	5150

✓ - applies, X – not applicable

Compartment	Resource Unit	No. of Sweeps	BA Average (m ² /ha)	BA Range (m ² /ha)
2029 & 2031	1	17	42	32-54

Silvicultural Planning

Single Tree Selection

The STS tract (172.9ha) is a predominantly even aged mature forest and will be harvested under a heavy single tree selection (STS) regime. The objective within the 172.9 ha harvest area for this operation (resource unit 1) is to remove 45% 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 unit 1 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 10m² per hectare within the tract.

Resource Unit (Refer to HPOM for detail)	Species Composition	Stand Structure and Condition
1	<p>Overstorey dominated by brown barrel (<i>Eucalyptus fastigata</i>), mountain gum (<i>E. dalrympleana</i>), white ash (<i>E. fraxinoides</i>) silvertop ash (<i>E. sieberi</i>) and narrow-leaved peppermint (<i>E. radiata</i>).</p> <p>Other species include manna gum (<i>E. viminalis</i>) and shining gum (<i>E. nitens</i>)</p>	<ul style="list-style-type: none"> The majority of resource unit is an over mature even aged fully stocked forest. Stand has reached endpoint with limited further growth potential.

Harvesting Prescription

Resource Unit (Refer to HPOM for detail)	% of Harvest Area	Silvicultural Treatment
1	100	<p>STS heavy:</p> <ul style="list-style-type: none"> • Retain and protect from harvesting/fire damage: <ul style="list-style-type: none"> -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 10m² per hectare within the tract. • All other products should be removed markets permitting. If this objective cannot be achieved the following options should be considered: <ul style="list-style-type: none"> -reject tree felling (HC must first obtain approval from HS), -defer harvesting until ideal market conditions prevail, -consider harvesting under a light or medium STS regime.

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

Parts of compartments 2029 and 2031 are within Eurobodalla 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 Eurobodalla 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.

Occupation Permits

Apiary

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

Rocky Terrain

Rocky terrain occurs within the net planned area. All rocky terrain shown on the HPOM was assessed at the planning stage and is unlikely to meet the definition of a rocky outcrop or cliff. FT/HC will continue to conduct on the ground mark-up and searches and report back to Planner/Field Ecologist any feature requiring further investigation.

National Parks and Nature Reserves

Wadbilliga National Park forms the eastern boundary of the planning unit. The escarpment forms the boundary between Wadbilliga National Park and State Forest.

No harvest disturbance is permitted within National Park or Nature Reserves.

- Harvesting debris must not be left within five metres of the boundary.
- Boundaries must be marked in the field.

Forest Management Zoning

FMZ 4- General Management (normal harvesting prescriptions apply) occur within the compartment. Refer to HPOM for more detail.

IFOA Required Approval of Forestry Activities

All areas of Rainforest, Rare Non-Commercial Forest Ecosystems require prior OEH approval and Stream Exclusion Zones require prior Planning Supervisor approval before forest harvesting related activities (eg: road or snig track construction & reopening) can be undertaken. It is the responsibility of the HC to identify any exclusion areas which will need to be crossed during harvesting. The HC must then contact the Planner to obtain the necessary approval.

Cultural Heritage

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*), **Olive Whistler** (*Pachycephala olivacea*), **Glossy Black-Cockatoo** (*Calyptorhynchus lathami*), **Eastern False Pipistrelle** (*Falsistrellus tasmaniensis*) **Flame Robin** (*Petroica phoenicea*) and **Gang Gang Cockatoo** (*Callocephalon fimbriatum*).

Tree Retention

Zone	Hollow bearing Trees/ha	Recruitment Trees /ha	GG density >1/ha + Habitat/ha	Dead Standing Trees (only if safe)	Protection of Retained Trees	Significant Food Resource
Non Regrowth	5	5	+3	✓	✓	✓
TSL condition	5.6b	5.6c	6.4d 6.10 f	5.6h	5.6f	5.6 g

✓ - Condition applies

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*.
Rare Non Commercial Forest Ecosystems	5.5	Yes (within wetland)
Riparian Protection Zones	5.7	Yes
Ridge & Headwater Habitat	5.8	Yes (40m either side)
Wetlands	5.9	Has been assessed as a risk that it may occur in the field. May require further investigation*. Note area shown on HPOM has not been inspected or marked during planning stage.
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 as a risk that it may occur in the field. May require further investigation#. Details of field verification at planning stage detailed below (refer to HPOM for number reference) #1, #2 & #5: Field verified at planning stage, 20m exclusion partially marked. 20m exclusion to be remarked with fresh tape prior to operations commencing. #3: Field verified at planning stage. 20m exclusion not marked this boundary to be marked prior to operations commencing. #4: Partially field verified with 20m exclusion marked at planning stage (only the area within 20m of 2046/5 Rd). Remaining area not field verified at planning stage. Prior to operations commencing boundary is to be field verified and 20m exclusion marked.

Endangered Ecological Community	NA	<p>Has been assessed as a risk that Montane Peatlands and Swamps EEC & Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum EEC may occur in the field. May require further investigation*. Harvesting, harvesting machinery and post harvest burning must be excluded from all areas of EEC.</p> <p>EEC shown on the HPOM has not been assessed in the field and must be assessed by a field ecologist and a plan amendment done or excluded from harvesting and burning as mapped.</p>
--	----	---

*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 2029 & 2031	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 2029 & 2031	Licence conditions under the TSC Act or relevant Site-specific prescription
Powerful Owl <i>Ninox strenua</i> ,	Yes	6.4
Long-nosed Potoroo <i>Potorous tridactylus</i>	No	6.7
Spotted tailed Quoll <i>Dasyurus maculatus</i>	Yes	6.10 Latrine exclusion occurs in compartment 2029, however it is disconnected and south of the harvest area by 400m.
Squirrel Glider <i>Petaurus norfolkensis</i>	Yes	6.12 Three records occur in compartment 2029. These are historic records and do not trigger an exclusion zone. If any new detections of this species occur in or within 100m of the compartment boundaries cease operations immediately & Inform HS
Yellow-bellied Glider <i>Petaurus australis</i>	Yes	6.13
Golden-tipped Bat <i>Kerivoula papuensis</i>	No	6.14
<i>Eucalyptus kartzoffiana</i>	Yes	6.16.1 Exclusion of specified forestry activities from 100% of individuals and no buffer. To assist burning crew exclude burning individuals, minimise accumulation of debris around the base or retained trees within a 10m radius of each record. Species profile is attached to plan.
<i>Pomaderris parrisiae</i>	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 snagging 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. (Refer to field guide)

Fisheries Licence Conditions

For the whole of compartment 2031 and the areas in compartment 2029 which are not in Murrumbidgee River Catchment 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 the operation in these areas.

The area within compartment 2029 which is in Murrumbidgee River Catchment contains Class 2 Aquatic Habitat as defined by the Southern IFOA Fisheries Licence. The conditions of the fisheries licence are triggered for the operation in this area.

For the area within Class 2 Aquatic Habitat the following conditions apply:

Riparian Exclusion Zones, Buffer Zones and Special Operational Zones must be established as per condition 7A.1 – 7A.3 of the Fisheries Licence. Operations within these zones must comply with restrictions detailed in conditions 7A.4 – 7A.10.

If a need for “in-stream works” within Class 2 Aquatic Habitat is identified during the operation (additional to any works already described within the harvest plan) the HC must inform the Planner immediately. “In-stream works” are defined as *any activity being carried out within the incised channel or, where there is no defined bank, between the apparent edges of the watercourse*.

All “in-stream works” within Class 2 Aquatic Habitat must comply within condition 8 of the Fisheries Licence.

Soils and Water Protection

Refer to EPL Booklet & Standard Plan Conditions

Site-specific EPL Conditions

Elements	Conditions
Unmapped Drainage Lines	EPL applies.
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

For the area in Class 2 Aquatic Habitat:

Filter strips (EPL), Protection Zones (EPL), Operational Zones (EPL), Exclusion Zones (FL), Buffer Zones (FL), Special Operational Zones (FL), 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 FL Exclusion Zone TSL Protection (hard)	EPL Protection Zone FL Buffer Zone TSL Protection* (soft)	EPL Operational Zone FL Special Operational Zone	Drainage Feature Protection: FT/HC marking instruction
Unmapped	5	5	10	10m (Pink)
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 the area NOT in Class 2 Aquatic Habitat:

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 FL Exclusion Zone TSL Protection (hard)	EPL Protection Zone FL Buffer Zone TSL Protection* (soft)	EPL Operational Zone FL Special Operational Zone	Drainage Feature Protection: FT/HC marking instruction
Unmapped	5	5	10	10m (Pink)
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)

Log Dump Location

14 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

Four snig track crossings (S1, S2, S3 and S4) and 3 road crossings (C1, C4 and C5) are approved for use on drainage features. (Refer to HPOM). Road crossing details for C1 and C4 are contained in Attachment 2 of this Plan. C5 is not located on a drainage line or a drainage depression as defined by EPL and is only identified on HPOM to

satisfy TSL reporting requirements. Works for C5 are not detailed Attachment 2. Snig track crossing details are provided below:

Crossing Name & Coordinates	Crossing details	Required Works
S1-new 730156E 6000124N	Mapped 1st order drainage line, occurs as a slight drainage depression 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 (expected side cut <1m) as per EPL. 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 730081 Northing 5999460	Mapped 1 st order drainage line, occurs as a drainage line in the field. New 450mm pipe. Not class 1 or 2 Fisheries Licence aquatic habitat. Class 4 fish passage class: unlikely fish habitat.	Install temporary pipe crossing (450mm and 125mm rock at outlet). Minimum depth of fill above pipe is 40cm. This option to be used if drainage line is flowing at required time of use. If not flowing, construct natural causeway crossing. Construction will require side cut on both approaches to the crossing. Remove pipe, reshape bed and banks and install cross banks/rollovers on completion of use within timeframes and spacing's specified in EPL.
S3-new Easting 729864 Northing 5999136	Mapped 2 nd order drainage line, occurs as a drainage line in the field. New 450mm pipe or natural causeway. Not class 1 or 2 Fisheries Licence aquatic habitat. Class 4 fish passage class: unlikely fish habitat.	Install temporary pipe crossing (450mm and 125mm rock at outlet). Minimum depth of fill above pipe is 40cm. This option to be used if drainage line is flowing at required time of use. If not flowing, construct natural causeway crossing. Construction will require side cut on both approaches to the crossing. Remove pipe, reshape bed and banks and install cross banks/rollovers on completion of use within timeframes and spacing's specified in EPL.
S4-new 730156E 6000124N	Mapped 1 st order drainage line, no feature at crossing point. 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 side cut 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

Compartments 2029 & 2031 are 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 compartments 2029 & 2031. 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
Rocky outcrop, ridge and headwater	

The table below lists critical boundaries in compartments 2029 & 2031. 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
EEC (the area mapped in south east corner of compartment 2031)	
National Park/Wilderness Area	
Boundary between nha and compartment 2046 (the sections where the boundary is not a drainage line)	

Note the Owl landscape, Wetland (with associated EEC and RNCFE), and Quoll Latrine exclusions are all critical boundaries however are considered to have adequate existing road control lines.

Pre-Operational Briefing

I acknowledge that I have received a copy of the Harvesting Plan for Compartments 2029 & 2031 in Badja 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	No				
Rainforest	No				
Rocky outcrops	Yes	New	Yes		
Wetlands	No				
Cultural Heritage	No				
Existing Roads	No				
New Roads	Yes	New	Yes		
Heath	No				
Powerlines etc	No				
Other (state what it is)					

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.

*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

HC/FT Notes (continued)

HC/FT Notes (continued)

HC/FT Notes (continued)

HC/FT Notes (continued)

Clearance Certificate

COMPARTMENTS: 2029 & 2031 BADJA STATE FOREST

ToHC

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

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	

Post Logging Basal Area sweeps

Sample point	GPS (GDA 94E)	GPS (GDA 94N)	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	730560	6000274	36				
2	730156	6000202	48				
3	730355	6000042	44				
4	730463	5999707	34				
5	730225	5999400	34				
6	730008	5999508	32				
7	729701	5999661	36				
8	729767	5999113	36				
9	729375	5999030	50				
10	729377	5999891	42				
11	729655	5999383	44				
12	730256	5998590	44				
13	730391	5999159	48				
14	730286	5998937	38				
15	729907	5998946	36				
16	729999	5999232	54				
17	730579	5999812	54				
18							
19							
20							
21							
22							
23							
Total Averages							

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

ATTACHMENT 2**ROADING PLAN****Summary of Roading Requirements**

Feature	Details	Works Required
Existing roads to be used.	3160m/4	Yes
New roads to be constructed	2525m/3	Yes
Existing crossings used	1	Yes
New crossings to be constructed	1	Yes
Length of road >10°	280m	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
Badja Forest Road (700m)	<ul style="list-style-type: none"> • Patch grade & reshape where required. • Ensure all existing drainage structures (mitres and spoons) are working effectively. • Clean 4 existing pipes. <p>Existing pipes shown on roading map.</p> <p>RC/HC Comments</p>			
Balook Road (2050m)	<ul style="list-style-type: none"> • Grade & reshape. • Roadside clearing • Ensure all existing drainage structures are working effectively (mitres and spoons and 7 pipes). • Install 2 new rubber flaps. • Gravel is required for wet weather haulage. <p>1 mitre to be reinstated, existing pipes and new RU's shown on roading map.</p> <p>RC/HC Comments</p>			

Cpt 2029/4 Road (140m)	<ul style="list-style-type: none"> Clear regen from pavement. Grade & reshape where required. Roadside clearing Open existing mitres and spoons and install additional RU's/mitres/spoons at EPL spacing (roading supervisor to determine appropriate spacing). <p>RC/HC Comments:</p>		
Cpt 2029/6 Road (270m)	<ul style="list-style-type: none"> Clear regen from pavement. Grade & reshape where required. Roadside clearing Remove rollovers, open existing mitres and spoons and install additional RU's/mitres/spoons at EPL spacing (roading supervisor to determine appropriate spacing). <p>RC/HC Comments:</p>		
C1 (new bridge) 2045/4 Road 730576E 6000358N Not class 1 or 2 Fisheries Licence aquatic habitat. Fish Passage Class 2: Moderate Fish habitat North east approach= +9 degrees. Southwest approach = +6 degrees.	<p>Mapped 3rd order drainage line, (flowing water during assessment).</p> <p>Construct new Log Bridge crossing. 3.5m span, 0.5m minimum height from stream bed. As far as practical cross at right angles to drainage line, box cut (expected <1.0m) likely to be required on NE approach and possibly on SW approach.</p> <p>Lay geotextile during construction phase to prevent spoil entering the creek.</p> <p>Minimise clearing and disturbance as far as practical, seed mulch disturbed areas.</p> <p>Install RUs for 5-30m with silt trap at outlets.</p> <p>RC/HC Comments:</p>		
C4 (existing pipes, Badja Forest Road)	Refer to crossing form attached to this plan.		

NEW ROAD CONSTRUCTION**Road Specific Conditions:**

Road Name	Road Length (m)	Max. width of road prism (m)	Max. road grade (length road >10 degrees?)	Max. ground slope (length road >30 degrees?)	Estimated Max. height of cut / fill batters (m)	Estimated Max length of batters (m)	Mass movement / dispersible soils	Final road use	Responsibility	Start Date	Finish Date
2031/2 Rd (*1)	1325 m	7m	12° (170m)	22°	2.5m	700m	No	Retain	FCNSW		
2045/4 Rd (*2)(*3)	840m	7m	12° (100m)	27°	2.5	350m	No	Retain	FCNSW		
2046/5 Rd (*3)	360m	7m	12°	15°	0.5	50m	No	Retain	FCNSW		

(*1) The rocky outcrop 20m exclusion shown on HPOM with reference #1, has had the side adjacent to the new road contrition marked with pink and yellow tape during the planning stage. This boundary must be freshly remarked prior to road construction.

(*2) Prior to constructing the section of road between dump 8 and dump 9 the roading coordinator must carefully inspect and clearly remark this section of road, which is close to the boundary of a rocky outcrop (shown on HPOM with reference #2). The boundary of the rocky outcrop was assessed at the planning stage and marked with yellow tape. The boundary of the 20m exclusion has been partially marked with pink and yellow tape, however it must be freshly remarked prior to the commencement of road construction.

(*3) Refer to separate road plan for the sections of 2045/4 and 2046/5 Roads, new construction which is within compartments 2045 and 2046.

CROSSING NAME: Mapped 2nd order DL & Wetland.
 Waterway Classification: Fish Passage Class 3 -minimal fish habitat
 Fisheries Licence Aquatic Habitat: Class 2

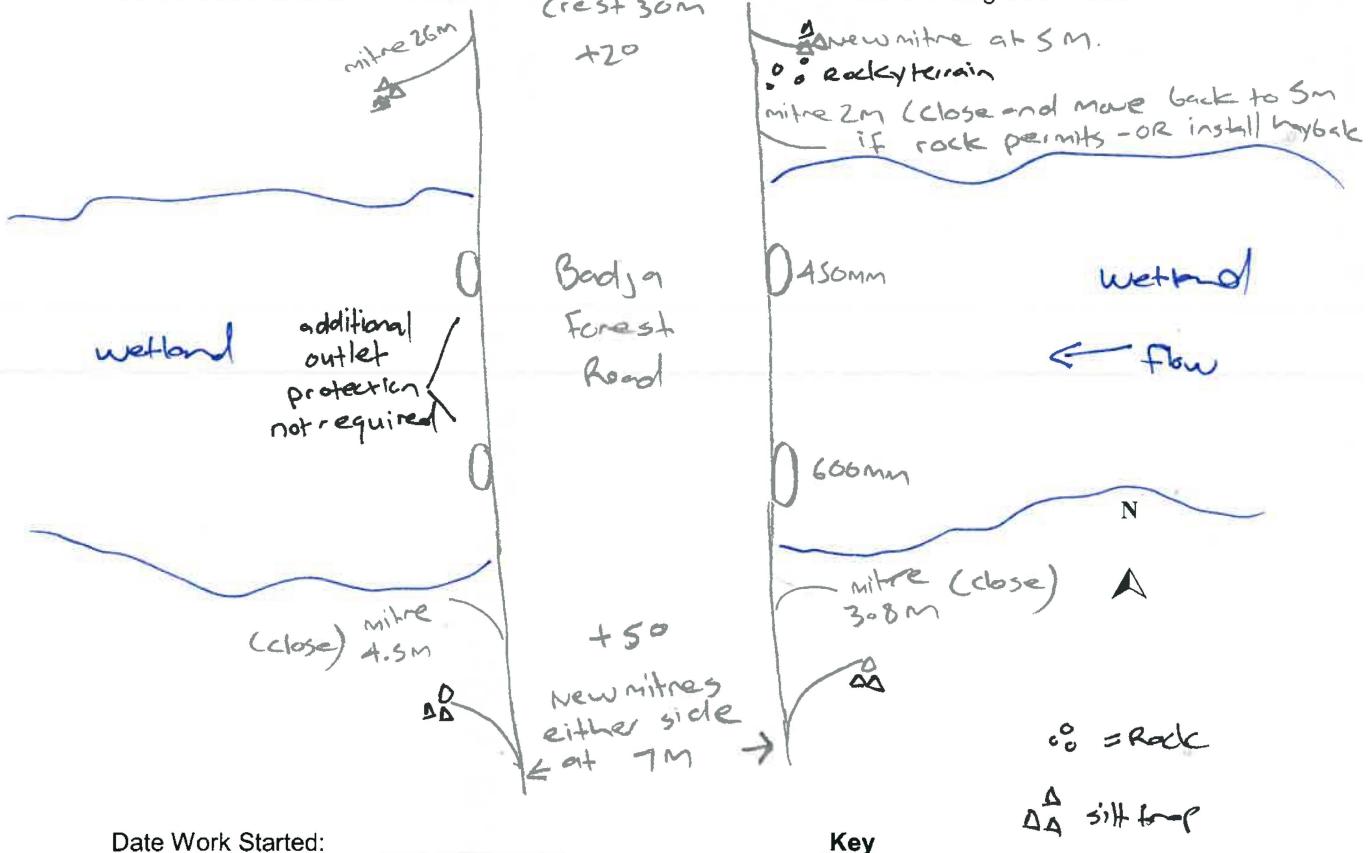
Assessors Name: Kate Halton **Crossing Type:** 1 existing 450mm pipe and 1 existing 600mm pipe

Features	Works (As per EPL Schedule 5)
Structure	Clean pipes if required.
Bed and Banks	Nil-vegetated and stable during assessment.
Erosion and Sediment Control	Nil, vegetated and stable during assessment.
Disposal of excess spoil	Outside Stream Exclusion Zone.
Soil Stabilisation within 20m	Seed/mulch disturbed areas
Road drainage within 5-30m	<p>North: Crest at 30m. Also NW side existing mitre at 26 m (ensure its clear/working). NE side move mitre at 2m to 5m if possible (there is some rock present). If not possible to move mitre, ensure the existing mitre is clean/working and place hay bale in table drain.</p> <p>South: Mitre at 4.5m on SW side and mitre at 3.8m on SW side, move both mitres to 7m and close the existing mitres.</p> <p>Install silt trap at all retained mitres.</p>

Date of Assessment: 21/10/14

Crest 30m

Final Crossing Use: Retain



Date Work Started: _____

Key

Date Work Finished: _____

Soil stabilisation must be completed within 5 days

Record implementation date here: _____

Araluen Gum - profile

Scientific name: *Eucalyptus kartzoffiana*

Conservation status in NSW: [Vulnerable](#)

Commonwealth status: [Vulnerable](#)

Profile last updated: 13 May 2013

Description

Growing to 30 m high, the Araluen Gum has rough, pale grey, scaly bark for up to 4 m from the ground; above that the bark is smooth and grey or white and sheds in long ribbons. The juvenile leaves are opposite, oval, blue-green and stalkless. Adult leaves are alternate, long and slender (to 20 cm by 2 cm). They have a vein within a millimetre of the margin and a flattened stalk. Flowers are in groups of three, also on a flattened stalk. Buds and fruits are blue-green. The buds are cylindrical with a conical cap; fruits are bell-shaped, to 7 mm long and wide.

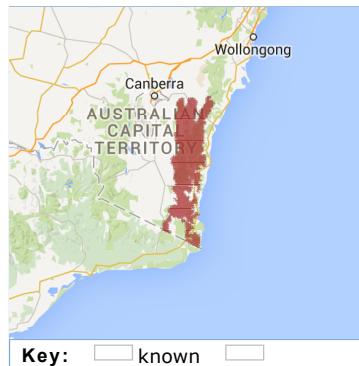
Distribution

Araluen Gum is found in the Araluen, Bendethera and Majors Creek area, south of Braidwood.

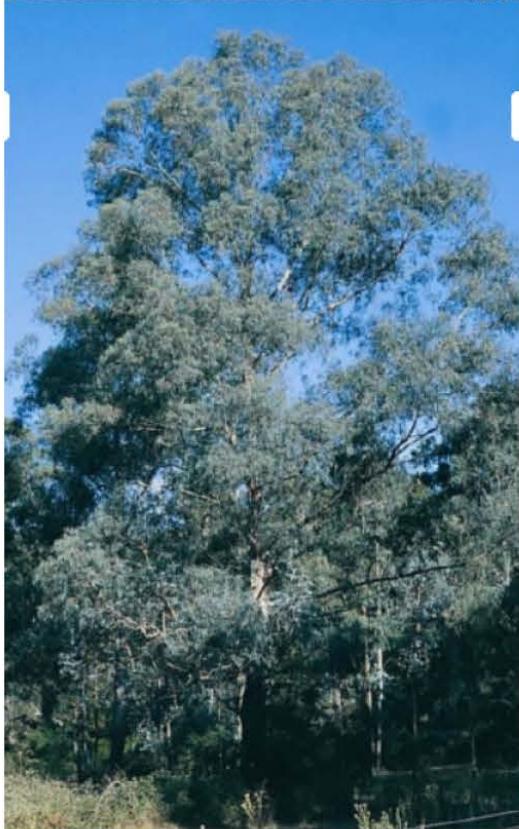
Habitat and ecology

- Grows near rivers, in grassy or shrubby woodland or in wet sclerophyll forest on moderately fertile sandy soil on granite.

Indicative distribution



The areas shown in pink and purple are the sub-regions where the species or community is known or predicted to occur. They may not occur throughout the sub-region but may be restricted to certain areas. ([click here](#) to see geographic restrictions). The information presented in this map is only indicative and may contain errors and omissions.



29

730

01

01

Harvest Plan Roading Map

Compartments: 2029 & 2031

State Forest: BADJA No: 567

Southern IFOA - South Coast

BADJA (8825-4N), BELOWRA (8825-4S)

Version: 3

Prepared By: Kate Halton

