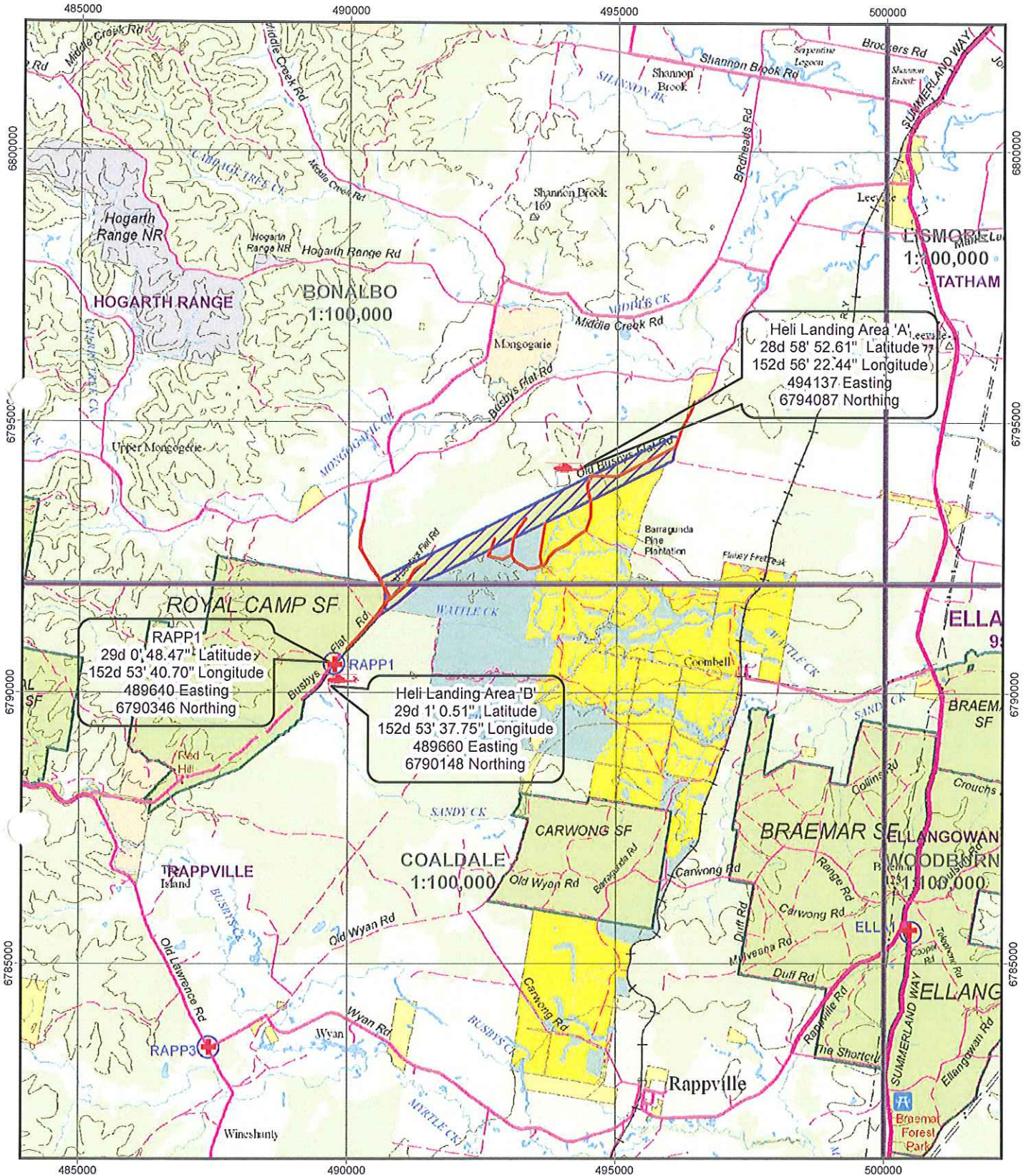




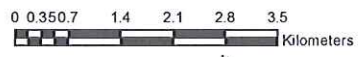
Map Sheets:
 1:25000 Hogarth Range 9440-2S
 Rappville 9439-1N
 1:100000 Bonalbo 9440 / Coaldale 9439
 Scale: 1:100,000

North East Region - Casino MA
 Locality Map
Compartment 16
 Royal Camp State Forest



MAP FEATURES

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



Prepared by... D. Allen
 Date: 28/10/11

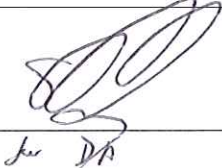
FORESTS NEW SOUTH WALES - NORTH EAST REGION
HARVESTING PLAN No. 3857

Royal Camp State Forest – Compartment 16

1. Certification

This plan has been prepared in accordance with the Integrated Forestry Operations Approval issued under the Forestry and National Park Estate Act 1998 and addresses significant aspects and impacts in the planning process. The **Standard Harvest Plan Conditions for Native Forest Operations in North East Region** apply to this operation.


Prepared by:

Harvest Planner	 <i>for DA</i>	Date: 28/6/2012
Dan Allen		

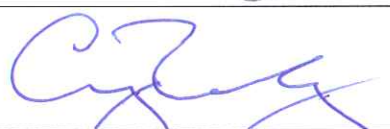
Endorsed by:

Harvest Planning Team Leader		Date: 28/6/2012
Steve Pickering		

Endorsed by:

Regional Planning Manager		Date: 29/06/2012
John Murray		

Approved by:

Regional Manager		Date: 29/6/12
Craig Busby		

Note: Approval includes the Harvest Plan Operational Map (HPOM) version 1.

2. Description of Proposal

Selective harvesting of regrowth native forest stands, using Single Tree Selection or

Other

	Proposed	Details
Road works	Yes	Road Works Plan (attached)
Post harvest Burning	Yes	Plan to be prepared separately
Rehabilitation	No	

3. Area Identification and Yield Estimates

Region	North East Region
Management Area	Casino
State Forest	Royal Camp
State Forest No.	794
Pricing area	Casino
Other Tenure Details (if applicable) For Lease & other non State Forest tenure (Lot/DP)	NA

	Cpt 16	Total
Gross Area (ha)	253	253
Net Harvest Area (ha)	187	187
Estimated Yield (m3/ha)	12	12 (ave.)
Volume (m3) All Product	2,244	2,244

Products	Total (m3)
High Quality Large	748
High Quality Small	561
Low Quality	748
Poles	187
Total	2,244

4. Forest Description

Forest Type: (See Forest type map)

- Spotted Gum - Grey Box / Spotted Gum – Ironbark – Grey Box (type 72/74) dominates the net area.
- Other mapped types include Paperbark / Forest Red Gum (type 31/92) in the eastern corner of the harvest area. These types have been assessed as Swamp sclerophyll forest on coastal floodplain EEC and are excluded from the net harvest area. Additional areas of EEC have also been identified around crossings A and C on Old Busbys Flat Rd.

Harvest History:

- These compartments were last harvested between 1991-93 using STS silviculture.

Stand Age/Size Class Description: Two main age/size cohorts exist:

- Advanced sapling 15-25cm dbhob regrowth from 1991-93 harvest events
- Pole/Mature 40-60cm dbhob component resulting from previous harvest events.
- Occasional Overmature trees

Site Quality

- Generally poor - moderate site quality with site height 25-35m.

Stand health

- Good – few old defective trees

5. Silviculture and Harvesting Prescriptions

Notwithstanding the prescriptions detailed below, all conditions of the IFOA, including General and Species Specific conditions of the Threatened Species Licence and the Environment Protection Licence are to be applied, where they are described in this plan or in the respective licences.

Objectives:

- Maximise the recovery of merchantable timber from the mature age/size cohort within the constraints of the harvest plan
- Create suitable conditions for a regeneration event.

	Stand Description		
	Mixed age Spotted Gum – Grey Ironbark & Mixed aged Mixed Species	Paperbark - Forest Red Gum Types (EEC potential) plus buffer	Subtropical Coastal Flood Plain EEC
Treatment – current ops	STS	Excluded from harvesting	Excluded from harvesting
Est. % of NHA	84%	13%	~3%
Expected BA Removal (%)	40%	Nil	Nil
Future Ops 15-20 years	STS	N/A	N/A
Other treatments	N/A	N/A	N/A

Single Tree Selection prescription:

- Tree removal and ground disturbance must also maximise regeneration opportunities.
- Single Tree Selection must remove no more than 40% of the basal area across the net harvest area. Trees with dbhob <20cm must not be selected for harvesting under STS (1.5.10 IFOA).
- In areas designated for STS it is expected that the basal area removal across the tract will fall below 40 %. BA removal will exceed 40% in some localized areas, but will be balanced by non harvest areas and tree retention across the tract.

6. Special Conditions

6.1 Seasonal Harvesting and Burning Restrictions

No

6.2 Endangered Ecological Communities

There are known occurrences of Endangered Ecological Communities within this compartment. (see Section 9 table 4). The indicative extent of known occurrences have been mapped. Note also that the mapped wetlands is likely to contain EEC's. It is considered likely that there may be additional occurrences of as yet unmapped EEC's within the harvest area

- Exclude indicative extent of EEC's from harvesting (as mapped)
- Continue to search ahead of harvesting for the presence of EEC and exclude identified EEC from harvest disturbance
- Seek assistance from the Harvesting Team Leader if assistance is required in identifying EEC's.
- SFO to map areas excluded from harvest to protect EEC's

6.3 Leases, Permits, Plots

	Occurs	Details	Conditions
Crown Leases	No		
Occupation Permits (grazing)	Yes	Lots 101 (cpt 117) & 103 (cpts 118, 124-126)	FNSW softwood plantation (along with native forest retention areas) adjoins the southern boundary of the harvest area. These areas are leased for grazing and the boundary is fenced. As such stock grids and gates must be utilised and maintained where necessary. All gates to be left shut when servicable stock grids are not in place. FNSW Northern Region has been consulted regarding this harvesting / haulage operation. Main gate south of dump 7 must be locked at the completion of each days operations.
Occupation Permits (apiary)	Yes	N340 N341	Harvesting should aim to minimise impact on any occupied apiary site. If the presence of hives is unduly constraining harvesting, the Harvesting Forester will consult with the permittee to ensure that the impact on harvesting is minimised.
Occupation Permits (other)	No		
PGP's	No		
Research Plots/Plus Trees	No		
Special Purpose Permits	No		

6.3 Critical Boundaries

Private Property: adjoins Cpt 16 from the north and east. This boundary is fenced.

Old Busby's Flat Road: An unfenced road reserve exists along Busbys Flat Road to the west and Old Busbys Flat Road (10m either side from the centre line of these existing roads in use). No harvesting allowed within these road reserves.

- If there is any doubt about the location of a critical boundary, clarification must be sought from the harvesting team leader to determine the requirements for boundary mark-up.
- Harvesting must not impact on private property or any functional fence line.
- Any damage to a fence must be immediately repaired by the contractor.

6.4 Underground Cables

- There is a Telstra cable within the NHA that runs adjacent to Busbys Flat Road (eastern side) and must be located to identify approx. alignment and depth prior to commencing earthworks.
- Site plans for the cable are held on the Harvest Plan Folder.
- Dial before you dig procedure must be followed prior to any excavation or road maintenance works in this area to determine cable locations.

6.5 Haulage Considerations

- Haulage is planned to access Busbys Flat Road and Mongogarrie Road. These routes may not be used by B-doubles.
- No haulage permitted along Busbys Flat Road east of intersection with Mongogarrie Road.
- **Note:** haulage south from this operation through Rappville Township is not advised due to the narrow and poor condition of pavement surfaces. This route also services Richards Mill and as such there is a high volume of heavy vehicle traffic routinely travelling the route. Obviously haulage to Richards Mill is the exception.
- Additional signage should be used on Busbys Flat Road and Mongogarrie Road to notify traffic of turning trucks.
- Main gate south of dump 7 must be locked at the completion of each days operations.

6.6 IFOA Required Approval Of Forestry Activities

Approvals have been obtained for the following activities / locations as shown on the operational map.

Crossing No.	Activity	Type	Conditions
1	Snigging	Riparian Protection Zone	Using existing crossing on old snig track. On completion of operations the crossing is to be back bladed and seeded following completion of track operation. Standard EPL conditions for track drainage either side of crossing.
3	Snigging	Riparian Protection Zone	Using existing crossing on old snig track. On completion of operations the crossing is to be back bladed and seeded following completion of track operation. Standard EPL conditions for track drainage either side of crossing.

The following crossing requires additional approval from the Office of Environment and Heritage prior to use

2	Snigging	Riparian Protection Zone	Using existing crossing on old snig track in conjunction with temporary 6m pontoon bridge. On completion of operations the pontoon bridge is to be
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			removed and crossing is to be back bladed and seeded following completion of track operation. Standard EPL conditions for track drainage either side of crossing.
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- NOTE: Any additional crossings of Rainforest, HCVOG and Riparian Protection Zones require prior Regional Manager (or NPWS) approval before can be undertaken.
- It is the responsibility of the SFO to identify any additional areas that need to be crossed, the location of any such crossings without approval and to contact the Planning Unit to obtain the necessary approval.

6.7 Unmapped Rainforest

- Unmapped rainforest is to be identified and marked for retention in accordance with Forest Practices Circular 2005/02

7. Forest Management Zoning Conditions

The following Forest Management Zones and conditions apply:

FMZ	Type	Notes
Zone 3A	Harvesting Protection	High Conservation Old Growth Forest (HCVOG). These areas must be protected as marked on the map.
Zone 4	General Management	Available for harvesting in accordance with the conditions of this harvest plan.
Zone 8	Further Assessment	<p>These areas are to be nominated FMZ 4 with management by prescription (Standard Harvest Plan Conditions for Native Forest Operations in North East Region apply),</p> <p>They consist of:</p> <ul style="list-style-type: none"> • Mapped drainage features – identify in the field and apply EPL and TSL conditions based on actual field location, • modelled drainage features - require further assessment: Further assessment of the modelled streams is to be undertaken by the SFO. Appropriate prescriptions (Schedule 4 of the EPL) are to be applied if required and noted on the harvesting operational map.

8. Cultural Heritage Conditions

Aboriginal Cultural Heritage

No special conditions apply.

Non Aboriginal Cultural Heritage

No special conditions apply.

9. Flora and Fauna Conditions

10. Refer to Technical Guidance Note 2005-3A March 2005 for conditions (TSL Booklet)

Mark-up Conditions

The SFO must search for threatened species and mark-up the block as per Conditions 5.1 (General), and 5.2 (Koala) of the TSL. The Tree Marking code is shown in the Standard Harvest Plan Conditions for Native Forest Operations in North East Region.

Tree retention Conditions applying:

Prescription	TSL Condition
Hollow bearing and recruit trees	(Regrowth Zone) 5.6c,d
Greater Glider density > 1 per ha?	No – 6.9 d does not apply
Stag Retention	5.6e
Significant Food Resources	5.6f
Protection of Retained Trees	5.6g

Species Known or Likely to Occur

- Recent and reliable records exist within, or within close proximity of the compartments for the following threatened species. These species require species-specific or site-specific prescriptions if further records or habitat features are identified during mark-up.

SPECIES GROUP	COMMON NAME	SCIENTIFIC NAME
Mammals	Yellow-bellied Glider	<i>Petaurus australis</i>
Birds	Powerful Owl	<i>Ninox strenua</i>
	Glossy-black Cockatoo	<i>Calyptorhynchus lathami</i>
Flora	Slaty Red Gum	<i>Eucalyptus glaucina</i>
	Water Nutgrass	<i>Cyperus aquatilis</i>
		<i>Hedyotis galiodes</i>
		<i>Polygala linariifolia</i>

Site-Specific Conditions, Exclusion Zones & Modified Harvest Areas

Table 1: General Prescriptions

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Koala Mark-up Searches	5.2.2	Nil Records – continue search	These compartments contain preferred forest types, marking-up must be conducted at least 300m in advance of harvesting operations. In the event that a koala or scats (as noted in 5.2.2(i)) are found, a koala star search will be conducted to determine koala use area/s.
Wetlands	5.9	1 record (not in NLA) – continue search	10m exclusion zone on wetlands <0.5ha, 20m on 0.5-2ha, 40m on SEPP14 and >2ha wetlands.
Burning	5.16	Threatened species have	The habitat requirement of threatened species must be taken into account when instigating hazard

HARVEST PLAN No. 3857 – Royal Camp SF, Compartment 16

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
		been recorded in these cpts.	reduction burns to promote and maintain an understorey mosaic, significant areas of dense understorey vegetation and to minimise impact on large fallen logs.

Table 2: Species Specific Prescriptions (record and survey based)

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Powerful Owl (<i>Ninox strenua</i>)	6.9	Numerous records in and within 2km of compartment.	Landscape approach as specified in 6.9.2 will be used. Condition 5.13 may be applicable to protect any roosts or nests found. Search gully lines and heads of gullies for roost and nest sites.
Yellow-bellied Glider (<i>Petaurus australis</i>)	6.17	3 call detection records in Ca_16	Exclusion of 50m on dens. Retention of all sap feed trees. Within 100m of dens, sap feed trees and observation records, 15 mature / late mature feed trees must be retained. Within 200m of call detection site, 15 feed trees must be retained. Retained trees must be of same species as tree with den, feed marks or observation or should be species that shed their bark in long strips.
<i>Cyperus aquatilis</i>	6.23	Numerous records in 3 locations in Ca_16	20m Exclusion Zones, all individuals
<i>Hedyotis galiodes</i>	6.23	1 Record (100 plants) in Ca_16 outside nha	20m Exclusion Zones, all individuals
<i>Polygala linariifolia</i>	6.25	2 Records (7 plants) in Ca_16	20m Exclusion Zone, 90% of individuals
<i>Eucalyptus glaucina</i>	6.27	Numerous records (5 within nha) in Ca_16	Harvesting is permitted in populated areas. This species is managed under a threatened flora monitoring program.

Table 3: Species Specific Prescriptions (default IFOA condition)

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Swift Parrot (<i>Lathamus discolor</i>) Regent Honeyeater (<i>Xanthomyza phrygia</i>)	7. b) x	Nil records	Retain 10 eucalypt feed trees (which may include habitat and recruitment feed tree species) within every 2ha of NLA. All trees where species were observed feeding must be retained.
Large-footed Myotis (<i>Myotis macropus</i>)	7. b) xv	Nil records	Exclusion zones of 30m on all dams, permanent waterbodies and permanent streams in cpt.

Table 4: Other Ecological Considerations

Issue, Feature or Record	Presence	Assessment and Management Recommendations
EEC : Swamp sclerophyll forests on coastal flood plains of the NSW North Coast bioregion.	This EEC is present in this compartment - continue search within NLA.	Identify and mark in field to exclude specified forestry activities. Contact FNSW ecology unit for guidance if required.
EEC: Subtropical coastal flood plain forest of the NSW North Coast bioregion.	This EEC is present in this compartment - continue search within NLA.	Identify and mark in field to exclude specified forestry activities. Contact FNSW ecology unit for guidance if required.

In addition to Forest Management Zone Exclusions, the following exclusion zones occur and are shown on the operational map. Boundary marking conditions for each exclusion zone are described on the HPOM and in the tree marking code.

Riparian Protection (TSL Condition 5.7)

Ridge and Headwater Habitat (TSL Condition 5.8)

Boundary marking conditions for each exclusion zone are described on the HPOM and in the tree marking code (see Standard Harvest Plan Conditions for Native Forest Harvesting in North East Region).

11. Fisheries Licence Conditions

Refer to Technical Guidance Note 2005- 02 March 2005 (Fisheries Licence Booklet)

Class 2 Aquatic Habitat (Eastern Freshwater Cod) has been identified as occurring within the compartment. Conditions of the Fisheries Licence apply.

Condition 7.9 of the Fisheries Licence apply to snig track crossings of mapped and unmapped drainage lines.

- Crossings must be approved and marked in the field prior to use
- Crossings may only be used where it is not reasonably practicable to use another route or site.
- Conditions 8.3 and 8.4 of the Fisheries Licence apply to crossings.

12. Soils and Water Protection Conditions

Refer to Technical Guidance Note 2005- 1C (Environment Protection Licence Booklet) & Standard Harvest Plan Conditions for Native Forest Harvesting in North East Region

Site-specific EPL conditions –

Elements	Conditions
Unmapped Drainage Lines	EPL applies
Drainage Feature Protection	See HPOM for widths
Inherent Hazard Class	1
Dispersible Soils	NO
Mass Movement	NO
Log Dumps	Refer relevant conditions for IHL
Snig Tracks	Refer relevant conditions for IHL
Roads	See schedule 5 of EPL Booklet
Non-Haulage Roads	May be used for extraction EPL applies Remove debris on completion of operations

13. Legal Conditions

This operation must comply with:

- Standard Harvest Plan Condition for Native Forest Operations in North East Region
- Licence Conditions issued by Forests NSW under the Forestry Act (1916)
- State Forests of NSW Forest Practices Code - Part 2 Timber Harvesting in Native Forests February 1999 and Forest Practices Code Part 4 Forest Roads and Fire Trails (February 1999).
- Integrated Forestry Operations Approval issued under part 4 of the Forestry and National Parks Estate Act 1998 (IFOA) including the associated licences:
 - Threatened Species Conservation Licence (TSL) issued under the Threatened Species Conservation Act (1995) as amended May 2003
 - Licence issued under section 220ZW of the Fisheries Management Act 1994 (FL) as amended May 2003
- This operation is a non-scheduled operation under the Environment Protection Licence issued under section 55 of the Protection of the Environment Operations Act 1997. Roding and harvesting operations are not licenced. All EPL conditions will apply to harvesting and roding operations.

14. Attachments

- Attachment 1: Locality Map
- Attachment 2: Harvest Plan Operational Map
- Attachment 3: Forest Type Map
- Attachment 4: Site Safety Plan prescribes describes safety requirements and Medical Emergency Evacuation Plan for this harvesting operation.
- Attachment 5: Roding Plan prescribes roding requirements for this harvesting operation
- Attachment 6: Notes to aid in identification of threatened flora.

15. Pre-Operational Briefing

I acknowledge that I have received a copy of the Harvesting Plan for Compartment 16 in Royal Camp State Forest and that I have been briefed on the conditions of the Plan. I understand the supervision and operational control requirements as outlined in the plan.

Position	Name	Signature	Date

Vulnerable**Slaty Red Gum** (*Eucalyptus glaucina*)**Description**

Slaty Red Gum is a medium-sized tree to 30m tall. The bark is smooth and mottled white to slaty grey. The juvenile leaves are oval in shape and blue-green with a whitish bloom, and the buds and fruit are similarly coloured. The flowers are white, or occasionally pink, and are produced between August and December. The fruits are oval-shaped and 7–10mm long. The three to five raised valves are surrounded by a domed disk raised above the fruit.

Distribution

Slaty Red Gum is found only on the north coast of NSW and in separate districts: near Casino where it can be locally common, and farther south, from Taree to Broke, west of Maitland.

Habitat

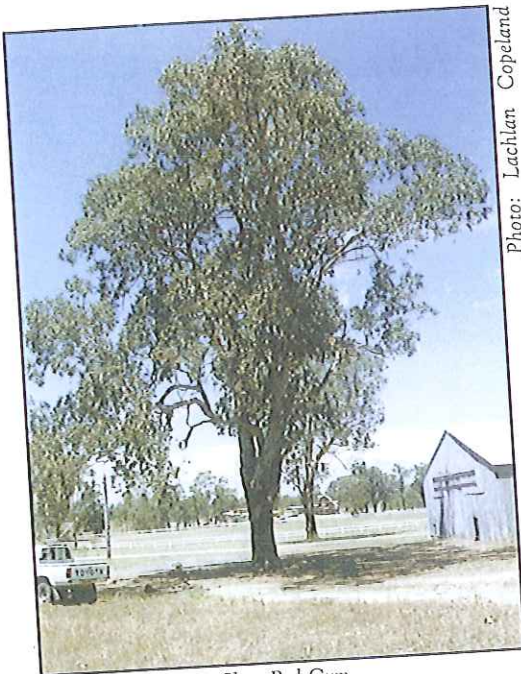
Slaty Red Gum grows in grassy woodland and dry eucalypt forest on deep, moderately fertile and well-watered soils.

Threats

- Clearing for agriculture and development.
- Timber harvesting activities.
- Lack of regeneration through grazing pressure.

Conservation actions

- Protect areas of habitat from clearing and grazing.
- Fence off remnant habitat to protect it from grazing and to promote regeneration.
- Protect areas of habitat from timber harvesting activities.



Slaty Red Gum

Photo: Lachlan Copeland

Endangered

Polygala linariifolia

Description

Polygala linariifolia is an annual or perennial herb with a woody tap root and more-or-less upright branches. It grows to about 20cm in height. Its leaves are up to 3.5cm in length, oval in shape, and usually broader towards the tips. They have a short point at the tip and are dull in texture as they are sparsely covered in short hairs. Small groups of flowers appear in summer, which are bluish purple, yellowish, or occasionally white. The flattened fruit capsule is a broad oblong with a narrow wing, and the seeds are black with white hairs.

Distribution

Recorded on the NSW north coast, between Casino and Whiporie. It is also known from Yabbra State Forest and Hogarth Range. Outside the north coast it occurs on the northern slopes and plains of NSW and in WA and southern Qld.

Habitat

Sandy soils in dry eucalypt forest or woodland with a sparse understorey.

Threats

- Timber harvesting activities.
- Road-works.
- Frequent fire.
- Clearing for agriculture
- Grazing by domestic stock.
- Risk of local extinction because populations small.

Conservation actions

- Identify populations on roadsides and in logging areas, and protect them during operations.
- Protect known habitat from frequent fire.
- Protect areas of known or potential habitat from clearing.
- Fence known or potential habitat to protect it from grazing stock.
- Notify the NPWS of any additional records of *Polygala linariifolia*.



Photos: Lachlan Copeland



Polygala linariifolia

Endangered

Hedyotis galioides

Description

Hedyotis galioides, which may also be known by its current name *Oldenlandia galioides*, is a delicate, inconspicuous annual herb, that either hugs the ground or stands erect. It has slender, many branched stems, and paired leaves. The leaves are narrow and 4–25mm long, with margins curved back, and no leaf-stalk. The white flowers are very small, in groups of one to three in the angles of the leaves, on long flower stalks to 2cm long. The capsules are small and round, hidden within the spent flower, and split to release a small number of tiny seeds.

Distribution

In north-east NSW, known from Whiporie State Forest south of Casino and one location in the Tweed district. Also occurs on the north-west plains of NSW and in Qld, NT and WA.

Habitat

Margins of seasonally inundated wetlands in paperbark swamps and Forest Red Gum (*Eucalyptus tereticornis*) woodlands.

Threats

- Clearing and fragmentation of habitat for development, agriculture and road-works.
- Risk of local extinction because populations small.
- Invasion of habitat by introduced weeds, such as grasses.
- Timber harvesting activities, which may affect small wetlands.

Conservation actions

- Protect areas of wetland habitat from clearing or development.
- Expand and connect remaining areas of habitat.
- Remove weeds in known or potential habitat.
- Identify populations in areas subject to timber harvesting and protect them during harvesting.
- Report new records of *Hedyotis galioides* to the NPWS.



Photo: Hught Nicholson

Hedyotis galioides

Endangered

Cyperus aquatilis

Description

Cyperus aquatilis is a sedge that appears as an annual during the wet summer period. It grows to 10–30cm tall, and has weak triangular stems. The leaves are 1–3mm wide and shorter than the flowering stem. The flower- and seed-head is made up of several branches radiating from the top of the stem. Each branch has one to eight flattened spikelets 3mm wide with 10–30 green flowers. The seeds are three-sided nuts, whitish to pale brown.

Distribution

In NSW, known only from a few sites north from Grafton. Also occurs in Qld, NT, WA and New Guinea.

Habitat

Grows in ephemerally wet sites, such as roadside ditches and seepage areas from small cliffs, in sandstone areas.

Threats

- Clearing for agriculture or development.
- Browsing and trampling by stock.
- Damage to plants and habitat during road-works.

Conservation actions

- Protect wet habitat areas from clearing or development.
- Fence off wet habitat areas to protect them from domestic stock.
- Identify populations along roadsides and protect them during road-works.
- Report new records of *Cyperus aquatilis* in NSW to the NPWS.



Photo: Hugh Nicholson

Cyperus aquatilis

FORESTS NEW SOUTH WALES – NORTH EAST REGION

ROAD WORKS PLAN

Royal Camp State Forest

Compartment 16

Certification

Prepared By: Harvest Planner	Dan Allen	Approved By: Regional Manager	Craig Busby
Signature		Signature	
Date		Date	29/10/12

1. Objectives

Roadworks are required to service native forest harvesting operations within the above compartments. These compartments are scheduled for harvest in 2012.

The operational map shows the location of the proposed works.

Attachments: Financial Analysis Spreadsheet gives full details of costs, benefits, material & plant requirements

2. Specifications and Legal Conditions

This operation must comply with:

- Standard Harvest Plan Conditions for Native Forest Operations in North East Region
- Licence Conditions issued by Forests NSW under the Forestry Act (1916)
- State Forests of NSW Forest Practices Code - Part 2 Timber Harvesting in Native Forests February 1999 and Forest Practices Code Part 4 Forest Roads and Fire Trails (February 1999).
- Integrated Forestry Operations Approval issued under part 4 of the Forestry and National Parks Estate Act 1998 (IFOA) as amended May 2003 including the associated licences:
- Threatened Species Conservation Licence (TSCL) issued under the Threatened Species Conservation Act (1995) as amended May 2003
- Licence issued under section 220ZW of the Fisheries Management Act 1994 (FL) as amended May 2003
- This operation is a non-scheduled operation under the Environment Protection Licence issued under section 55 of the Protection of the Environment Operations Act 1997. Roding and harvesting operations are not licensed. All EPL conditions will apply to harvesting and roding operations .
- Technical Guidance Notes for Roadworks.

3. Special Conditions

Feature	Conditions
Cultural Heritage	No
Threatened Species	See harvesting plan. Minimise disturbance within protection zones.
EECs	EECs occur within the harvest area. No disturbance permitted beyond the existing road prism within identified EEC's. Note: Mapped wetlands are likely to meet the definition of an EEC
Dispersible Soils Hazard	No
Mass Movement Hazard	No
Seasonality	No
Engineering Design	No
Environmental impacts ie Dust, Noise, Water, Visual	No
Haulage Standards	Yes – All preparatory road works to facilitate timber haulage.
National Park	No
Private Property	No
Permit To Enter required	No
Grazing	Yes – on adjacent joint venture plantation (Barragunda). Maintain grids and all gates to remain closed. Main gate south of dump 7 must be locked at the completion of each days operations.
Quarries and Gravel Pits	No
Underground/Overhead Utilities	Yes – underground Telstra cable runs along the eastern side of Busbys Flat Rd. Mlinise earthworks when constructing Link 1 Rd intersection.
Safety Issues (includes hazards, public use of roads)	Yes – See Hazard Assessment in the Site Safety Pack

4. General Conditions

Remove trees in accordance with FNSW Safety Standard 1.3.9; and

Remove vegetation within 3m of the road prism **only where required** to maintain safe sight distance and passage of trucks.

Note: Clearing is generally permitted within 3m of the road prism for all roads **(except through EECs)**. Ground disturbance and tree debris may impact outside this 3m either side of the road prism as is required to effect clearing within 3m of the road prism. Conditions 5, 6 and 47 Schedule 5 of the EPL must apply.

5. Works Schedule

Road Maintenance/Upgrade

Road Name Old Buskys Flat Rd

Category Permanent

Location Buskys Flat Rd to dump 1.

Length (m) 1100

	WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works >30 Slopes	<input type="checkbox"/>	
	Mass Movement	<input type="checkbox"/>	
	Dispersible	<input type="checkbox"/>	
Pavement Upgrade	Widening	<input type="checkbox"/>	Location Upgrade Length (m) 0 Formation Width (m) NA Upgrade Spoil Curve Widening
	Grade Lowering	<input type="checkbox"/>	
	Realignment	<input checked="" type="checkbox"/>	Realign to a 'T' intersection with Buskys Flat Rd so to allow adequate line of sight for safe truck exit.
	Reopening	<input type="checkbox"/>	
Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	Where necessary Maintenance Length (m) 1100
	Repair surface	<input checked="" type="checkbox"/>	Where necessary
	Crown/Crossfall	<input checked="" type="checkbox"/>	Entire road
	Gravel	<input type="checkbox"/>	Gravel Length (m)
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Remove Dangerous trees/tags only
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Clearing outside the road prism:
	Batter Repair/Upgrade	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	Size: Sets:
	Mitres	<input checked="" type="checkbox"/>	
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets:
	Belts/Channels	<input type="checkbox"/>	Sets:
	Drop Downs	<input type="checkbox"/>	Sets:
	Silt Trapping	<input type="checkbox"/>	
Comments: Drainage to EPL. BEWARE OF DEAD STAGS. VERY UNSTABLE.			
Start Date:		Finish Date:	Soil Stabilisation Date (must be within 6 days):
Date	Event		Initial

Road Name Ridge Rd

Category Permanent

Location Barragunda Rd to 16/2 Rd.

Length (m) 1500

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes	<input type="checkbox"/>			
	Mass Movement	<input type="checkbox"/>			
	Dispersible	<input type="checkbox"/>			
Pavement	Upgrade	Widening	<input checked="" type="checkbox"/>	Location Where necessary. Formation Width (m) 3.7 Curve Widening Where necessary Upgrade Length (m) 0 Upgrade Spoil	
		Grade Lowering	<input type="checkbox"/>		
		Realignment	<input checked="" type="checkbox"/>	Intersection with Barragunda Rd for haulage North.	
		Reopening	<input type="checkbox"/>		
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	Where necessary.	Maintenance Length (m) 1500
		Repair surface	<input checked="" type="checkbox"/>	Where necessary.	
		Crown/Crossfall	<input checked="" type="checkbox"/>	Entire road.	
		Gravel	<input checked="" type="checkbox"/>	For 2 grid installations	Gravel Length (m)
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Remove Dangerous trees/stags only		
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Clearing outside the road prism:		
	Batter Repair/Upgrade	<input type="checkbox"/>			
Drainage	Culverts	<input type="checkbox"/>		Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets:		
	Belts/Channels	<input type="checkbox"/>	Sets:		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: Drainage to EPL. BEWARE OF DEAD STAGS. VERY UNSTABLE. Install temporary grids at existing gate locations (x2).					

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Pine Rd

Category Permanent

Location Ridge Rd to dump 6.

Length (m) 900

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes		<input type="checkbox"/>		
	Mass Movement		<input type="checkbox"/>		
	Dispersible		<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location Formallon Width (m) NA Curve Widening Upgrade Length (m) 0 Upgrade Spoil	
		Grade Lowering	<input type="checkbox"/>		
		Realignment	<input type="checkbox"/>		
		Reopening	<input type="checkbox"/>		
	Maintenance	Clear veg/debris	<input type="checkbox"/>		Maintenance Length (m) 900
		Repair surface	<input checked="" type="checkbox"/>	Where necessary.	
		Crown/Crossfall	<input checked="" type="checkbox"/>	Enire road	
Gravel		<input type="checkbox"/>		Gravel Length (m)	
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Remove Dangerous trees/slugs only		
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Clearing outside the road prism:		
	Batter Repair/Upgrade	<input type="checkbox"/>			
Drainage	Culverts	<input type="checkbox"/>		Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets:		
	Belts/Channels	<input type="checkbox"/>	Sets:		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: Drainage to EPL. BEWARE OF DEAD STAGS. VERY UNSTABLE.					

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Barragunda Rd

Category Permanent

Location Eastern boundary of harvest area to Ridge Rd (via dumps 7, 8, 9).

Length (m) 2400

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes		<input type="checkbox"/>		
	Mass Movement		<input type="checkbox"/>		
	Dispersible		<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location Where necessary. Upgrade Length (m) 0 Formation Width (m) NA Upgrade Spoil Curve Widening Where necessary.	
		Grade Lowering	<input type="checkbox"/>		
		Realignment	<input type="checkbox"/>		
		Reopening	<input type="checkbox"/>		
	Maintenance	Clear veg/debrls	<input type="checkbox"/>		Maintenance Length (m) 2400
		Repair surface	<input checked="" type="checkbox"/>	Where necessary.	
		Crown/Crossfall	<input checked="" type="checkbox"/>	Entire road.	
	Gravel	<input checked="" type="checkbox"/>	For grid installation.	Gravel Length (m)	
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Remove Dangerous trees/stags only		
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Clearing outside the road prism:		
	Batter Repair/Upgrade	<input type="checkbox"/>			
Drainage	Culverts	<input type="checkbox"/>		Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets:		
	Belts/Channels	<input type="checkbox"/>	Sets:		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: Drainage to EPL. BEWARE OF DEAD STAGS. VERY UNSTABLE. Install temporary grid at existing gate location on boundary below dump 7. This gate must remain functional and be locked every night.					

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Construction

Road Name	16/1 Rd	Road Category	Temporary
Road Length (m)	370	Road Location	Link 2 Rd to Dump 5.
Site Information			
Mass Movement	NA		
Dispersible	NA		
Ground Slope (deg)	8		
>30 deg Slopes	NA		
Proximity Drainage	100		
Specifications			
Prism Width (m)	7.5		
Formation Width (m)	3.7		
Pavement Width (m)	3		
Roadside Width (m)	3		
Max Grade (deg)	8	Road Length > 10Deg	0
Angle Cut Batter	NA	Max Length Batter:	0
Angle Fill Batter	NA	Max Height Batter:	0
Gravel	0	Gravel Length	0
Drainage	Drainage for >10Deg		0
Rod/Spoon	<input checked="" type="checkbox"/>	Rod/Spoon No:	3
Belt/Channel	<input type="checkbox"/>	Channel/Belt No:	
Mitre	<input checked="" type="checkbox"/>		
Culvert	<input type="checkbox"/>	Culvert Size	Culvert Set Number 0
Soil Erosion and Stabilisation Controls			
Drop Down Type	NA		
Sediment Trap	NA		
Stabilisation	Compact fill batters > 1m and grass seed, hay and julemesh		
Stabilisation Interval	Fortnightly or after storm event		
Start Date:	Finish Date:	Soil Stabilisation Date (must be within 5 days):	
Date	Event		Initial

Road Name 16/2 RD Road Category Temporary
 Road Length (m) 350 Road Location Ridge Rd to dump 4

Site Information

Mass Movement	NA
Dispersible	NA
Ground Slope (deg)	8
>30 deg Slopes	NA
Proximity Drainage	100

Specifications

Prism Width (m)	7.5		
Formation Width (m)	3.7		
Pavement Width (m)	3		
Roadside Width (m)	3		
Max Grade (deg)	8	Road Length > 10Deg	0
Angle Cut Batter	NA	Max Length Batter:	0
Angle Fill Batter	NA	Max Height Batter:	0
Gravel	0	Gravel Length	0

Drainage Drainage for >10Deg 0

Rod/Spoon	<input checked="" type="checkbox"/>	Rod/Spoon No:	3
Belt/Channel	<input type="checkbox"/>	Channel/Belt No:	
Mitre	<input checked="" type="checkbox"/>		
Culvert	<input type="checkbox"/>	Culvert Size	Culvert Set Number 0

Soil Erosion and Stabilisation Controls

Drop Down Type	NA
Sediment Trap	NA
Stabilisation	Compact fill batters >1m and grass seed, hay and jutesh
Stabilisation Interval	Fortnightly or after storm event

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name	Link 1 Rd	Road Category	Temporary
Road Length (m)	200	Road Location	Busbys Flat Rd to dump 3
Site Information			
Mass Movement	NA		
Dispersible	NA		
Ground Slope (deg)	3		
>30 deg Slopes	NA		
Proximity Drainage	300		
Specifications			
Prism Width (m)	7.5		
Formation Width (m)	3.7		
Pavement Width (m)	3		
Roadside Width (m)	3		
Max Grade (deg)	3	Road Length > 10Deg	0
Angle Cut Batter	NA	Max Length Batter:	0
Angle Fill Batter	NA	Max Height Batter:	0
Gravel	0	Gravel Length	0
Drainage	Drainage for >10Deg 0		
Rod/Spoon	<input checked="" type="checkbox"/>	Rod/Spoon No:	1
Belt/Channel	<input type="checkbox"/>	Channel/Belt No:	
Mitre	<input checked="" type="checkbox"/>		
Culvert	<input type="checkbox"/>	Culvert Size	Culvert Set Number 0
Soil Erosion and Stabilisation Controls			
Drop Down Type	NA		
Sediment Trap	NA		
Stabilisation	Compact fill batters >1m and grass seed, hay and julemesh		
Stabilisation Interval	Fortnightly or after storm event		

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name	Link 2 Rd	Road Category	Temporary
Road Length (m)	400	Road Location	16/1 Rd to Ridge Rd
Site Information			
Mass Movement	NA		
Dispersible	NA		
Ground Slope (deg)	9		
>30 deg Slopes	NA		
Proximity Drainage	200		
Specifications			
Prism Width (m)	7.5		
Formation Width (m)	3.7		
Pavement Width (m)	3		
Roadside Width (m)	3		
Max Grade (deg)	9	Road Length > 10Deg	0
Angle Cut Batter	NA	Max Length Batter:	0
Angle Fill Batter	NA	Max Height Batter:	0
Gravel	0	Gravel Length	0
Drainage	Drainage for >10Deg		0
Rod/Spoon	<input checked="" type="checkbox"/>	Rod/Spoon No:	3
Bolt/Channel	<input type="checkbox"/>	Channel/Bolt No:	
Mitre	<input checked="" type="checkbox"/>		
Culvert	<input type="checkbox"/>	Culvert Size	Culvert Set Number 0
Soil Erosion and Stabilisation Controls			
Drop Down Type	NA		
Sediment Trap	NA		
Stabilisation	Compact fill batters > 1m and grass seed, hay and jute mesh		
Stabilisation Interval	Fortnightly or after storm event		

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Crossing Works

Crossing Name **A** Road Name **Old Busbys Flat Rd** Location **Approx. 950m along Old Busbys Flat**
 Drainage Feature **Unmapped Drainage line** Stream Permanency **Temp.**

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable	Causeway	Existing	Perm.

Crossing Works		Approaches and Road Drainage	
Pavement/Structure	Armour crossing with gravel (24t).	Approaches	NA
Reshape Bed/banks	NA	Temporary Drainage	NA
Disposal of Spoil	NA	5-30m Upstream Left	Install ROD
Inlet	NA	5-30m Upstream Right	Install ROD
Outlet	NA	Practicos where no 5-30	NA
Stabilisation	NA	OutletControl	NA
ErosionControl	NA	TableDrain	NA

Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Crossing Name **B** Road Name **Old Busbys Flat Rd** Location **Approx. 850m along Old Busbys Flat**
 Drainage Feature **Unmapped Drainage line** Stream Permanency **Temp.**

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable	Causeway	Existing	Perm.

Crossing Works		Approaches and Road Drainage	
Pavement/Structure	Armour crossing with gravel (24l).	Approaches	NA
Reshape Bed/banks	NA	Temporary Drainage	NA
Disposal of Spoil	NA	5-30m Upstream Left	Install ROD
Inlet	NA	5-30m Upstream Right	Install ROD
Outlet	NA	Practices where no 5-30	NA
Stabilisation	NA	OutletControl	NA
ErosionControl	NA	TableDrain	NA

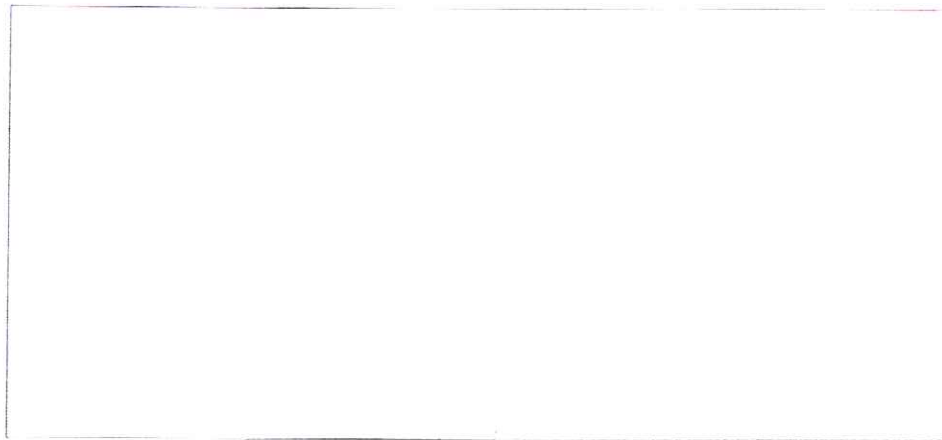
Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Crossing Name C Road Name Old Busbys Flat Rd Location Approx. 530m along Old Busbys Flat
 Drainage Feature Unmapped Drainage line Stream Permanency Temp.

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable	Causeway	Existing	Perm.

Crossing Works		Approaches and Road Drainage	
Pavement/Structure	Armour crossing with gravel (24t).	Approaches	NA
Reshape Bed/banks	NA	Temporary Drainage	NA
Disposal of Spoil	NA	5-30m Upstream Left	Install ROD
Inlet	NA	5-30m Upstream Right	Install ROD
Outlet	NA	Practises where no 5-30	NA
Stabilisation	NA	OutletControl	NA
ErosionControl	NA	TableDrain	NA



Start Date: Finish Date: Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

6. Pre-Operational Briefing

Staff/Contractor Acknowledgment

I acknowledge that I have received a copy of the Road Works Plan for
Compartment 16 in Royal Camp State Forest and that I understand the
conditions of the Plan as explained to me by a Forests NSW officer.

Name	Signature	Date