

FORESTS NEW SOUTH WALES - NORTH EAST REGION
HARVESTING PLAN No. 2225

Glenugie State Forest – Compartment 86

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		Date: 23/1/12
Steve Pickering		


Endorsed by:

Harvest Planning Team Leader		Date: 23/1/12
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Endorsed by:

Regional Planning Manager		Date: 27/2/12
John Murray		

Approved by:

Regional Manager		Date: 29/2/12
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.

Other

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

3. Area Identification and Yield Estimates

Region	North East Region
Management Area	Grafton
State Forest	Glenugie
State Forest No.	26
Pricing area	Bom Bom
Other Tenure Details	State forest only

	Cpt 86
Gross Area (ha)	168
Net Harvest Area (ha)	135
Estimated Yield (m ³ /ha)	18
Volume (m ³) All Product	2400

Products	Total (m ³)
High Quality Large	800
High Quality Small	300
Low Quality	900
Poles	400
Total	2400

4. Forest Description

Forest Type: (See Forest type map)

- The forest is dominated by Spotted Gum, Grey Box, Ironbark and Grey Gum
- An area of rare non-commercial forest types (type 129 – Rough-barked Apple) runs through the middle of the compartment, alongside a major creek.
- The understorey is very open, comprising mostly of widely scattered forest oak trees. The ground cover consists of thick grasses and fine forest litter, with some logging slash also evident from the previous harvesting operation.

Harvest History:

- Compartment 86 was last harvested in 1994, using a "gap and cluster" technique.
- The remainder of the area was lightly thinned.
- Prior to this operation, the area was heavily logged in 1925 and ringbarked to encourage regeneration.
- Further harvesting operations followed in the 1960s and 1987-88.

Stand Description:

- The stands in the compartment are predominantly un-even aged mature or advanced regrowth.
- Patches of even-aged regrowth occur where the last harvesting operation opened up gaps.

Site Quality

- Low to moderate – site height 25-30m

Stand health

- Generally poor to average

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.
- Thin stand to promote growth (if applicable)

	Stand Description	
	Even-aged regrowth, low quality stands with growth potential	Mature, good quality SPG mixed age regrowth - over most of the compartment
Treatment – current ops	Thinning	STS
Est. % of NHA	30%	70%
Expected BA Removal (%)	20%	35%
Future Ops 20-30years	STS	STS

Single Tree Selection prescription:

- Tree removal and ground disturbance must also maximise regeneration opportunities.
- Trees with dbhob <20cm must not be selected for harvesting under STS (1.5.10 IFOA).
- BA removal may exceed 40% in some localized areas, but will be balanced by non harvest areas and tree retention across the tract.

Thinning Prescription:

- Harvesting will be managed with the objective of removed sub-dominant and occasional co-dominant mature trees to concentrate growth on the best form dominant and co-dominant trees.
- Thinning may be carried out only in even aged regrowth stands.
- No more than 60% of the sum of the basal areas of trees in the stand may be removed in any one operation.

The area of each type of silvicultural treatment must be mapped and recorded in the Post-logging Information section of this plan.

6. Special Conditions

6.1 Seasonal Harvesting and Burning Restrictions

No

6.2 Leases, Permits, Plots

	Occurs	Details	Conditions
Crown Leases	No		Nil
Occupation Permits (grazing)	Yes	6296	Harvesting must not impact on any fence line. Any damage to a functional fence must be immediately repaired by the contractor.
Occupation Permits (apiary)	Yes	1168	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 (transmission)	Yes		Transmission Line Easement. Note conditions in Safety Plan when working within 2 tree lengths of power lines
PGP's	No		Nil
Research Plots/Plus Trees	No		Nil
Special Purpose Permits	No		Nil

6.3 Adjoining Landholders - Noise and Dust

- There are no private residences nearby that could be affected by dust and noise.
- In prolonged dry weather conditions, excessive dust on roads near the Pacific Highway may be of concern. Where dust during haulage becomes excessive, haulage should be ceased along that particular road and an alternative route found until rainfall occurs and the road surface settles. Additionally, gravelling of the road surface may be used if required, to help prevent water pollution as well as control the dust problem.
- Liaison with neighbouring landholders and any access issues is the responsibility of the Harvesting Team Leader

6.4 Critical Boundaries

Private Property: Compartment 86 is almost entirely surrounded by private property, apart from a section of its northern boundary, that adjoins State Forest (across from the Pacific Highway). These boundaries are generally fenced. Some landholders have indicated they are prepared to allow limited harvesting activity on adjacent private property to enable harvesting adjacent the fenceline to occur. The Supervising Forest Officer must arrange for an on-site inspection with the landowner and obtain specific permission for any harvesting activity to impact on private property. If no permission is obtained, then:

- The harvesting must not impact on private property.
- Directional falling techniques must be used when operating within two tree lengths of a boundary – and where there is the possibility of damaging fencelines.

Any damage to a fence must be immediately repaired by the contractor.

Other critical boundaries: Arandin Flora Reserve is shown as mapped. Dinjerra Road forms the western boundary of the reserve. Harvesting must not impact on the flora reserve and any trees accidentally felled into the reserve must not be removed.

- If there is any doubt about the location of a critical boundary, clarification must be sought from the harvest planning unit to determine the requirements for boundary mark-up.

6.5 Underground Cables

- Harvest planning surveys identified a number of Telstra underground cables in the harvesting area. The approximate location of the cables is indicated on the harvest

plan operational map. Telstra instructions specify that heavy vehicle traffic (eg. skidder, dozer) is not to be driven across Telstra ducts with less than 600mm cover. The depth may be checked via hand digging.

- Dial before you dig procedure must be followed prior any excavation or road maintenance works in this area to determine cable locations.

6.6 Transmission Lines

- A transmission line traverses the compartments, as shown on the operational map.
- Appropriate safety procedures must be in place before any work is undertaken in proximity to this power line (see safety supplement, attached).

6.7 Haulage Considerations

- Haulage is planned to access the Pacific Highway via Dinjerra and 86/5 Road. Dinjerra Road may not be used by B-doubles.
- 86/5 Road has limited space for queuing of trucks entering the forest. Manage traffic/gate closures to avoid the need for queuing
- All forest roads must be closed for B-double use.
- Additional signage should be used on Pacific Highway and Dinjerra Road to notify traffic of turning trucks.
- Access to dumps 1 and 2 is through private property. Contact the landholder at time of harvest to determine arrangements for gate closures.

6.8 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
X	Snigging	Mapped Drainage line	Use existing track. Drain to EPL with rollovers on completion of snigging

- 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.

6.9 Unmapped Rainforest

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

6.10 Acid Sulphate Soils

As indicated on the operational map, the flora reserve and a small part of the net harvest area to the south-east of the reserve are located on acid sulphate soils. Within this area, care must be taken to avoid exposing the subsoil. Exposure of the sub-soil, drying out and subsequent wetting may lead to acidic runoff into waterways.

6.11 Indicative floodplain morphology

Exclude mapped area from harvesting activities as shown on the Harvest Plan operational map

7. Forest Management Zoning Conditions

The following Forest Management Zones and conditions apply:

FMZ	Type	Notes
Zone 1	Arandin Flora Reserve	Area consists of a flora reserve (Arandin Flora Reserve) running to the east of Dinjerra Road. This area must be protected as marked on the map.
Zone 3B	Special prescription	<p>Areas of visual resource protection along the Pacific Highway (100m wide). Harvesting operations must aim at retaining the visual amenity of the forest as viewed from the road .</p> <ul style="list-style-type: none"> • Minimise snig tracks within visible forest areas. • Snig tracks to run perpendicular to the road where practicable • Retain understory as much as practicable to provide a visual screening • Limit removals to a maximum of 50% of canopy. • Exclude harvesting within 50m of rest stop
Zone 4	General Management	Available for harvesting in accordance with the conditions of this harvest plan.
Zone 7	Non forest Use	Area in the centre of the compartment, adjacent to the flora reserve, includes a transmission line Easement. Harvesting not permitted within the easement. Harvesting must not impact upon the transmission line and directional falling must be used when falling within two tree lengths of the line.
Zone 8	Further Assessment	<ul style="list-style-type: none"> • These areas are to be rezoned FMZ 4 with management by prescription (Standard Harvest Plan Conditions for Native Forest Operations in North East Region apply) <p>These areas include</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 - modelled streams are to be inspected 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 (Note also Swift parrot Conditions in Table 3) 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.
Greater Glider density > 1/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
Reptiles	White-crowned Snake	<i>Cacophis harretae</i>
	Pale-headed Snake	<i>Hoplocephalus bitorquatus</i>
	Broad-headed Snake	<i>Hoplocephalus bungerooides</i>
	Sand Goanna	<i>Varanus gouldii</i>
Mammals	Large Footed Myotis	<i>Myotis adversus</i>
	Koala	<i>Phascolarctos cinereus</i>
	Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>
	Rufous Bettong	<i>Aepyprymnus rufescens</i>
	Squirrel Glider	<i>Petaurus norfolcensis</i>
	Yellow-bellied Glider	<i>Petaurus australis</i>
Birds	Masked Owl	<i>Tyto novaehollandiae</i>
	Powerful Owl	<i>Ninox strenua</i>
	Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>
	Glossy-black Cockatoo	<i>Calyptorhynchus lathami</i>
	Red Goshawk	<i>Erythrotriorchis radiatus</i>
Flora		<i>Angophora robur</i>
		<i>Melaleuca irbyana</i>
	Hairy Melichrus	<i>Melichrus hirsutus</i>
		<i>Cryptandra longistaminea</i>
		<i>Cymbidium canaliculatum</i>
		<i>Eucalyptus tetrapleura</i> <i>Corynocarpus rupestris</i> ssp. <i>rupestris.</i>

Site-Specific Conditions, Exclusion Zones & Modified Harvest Areas

Table 1: General Conditions

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Koala Mark-up Searches	5.2.2	1 KOAL records in and within 100m of cpt boundaries	The compartment contains 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.
Tree Retention	5.6 (f),(g)	Nil Records – continue search	Retain and protect glossy black cockatoo feed trees. Retain all yellow-bellied glider and squirrel glider sap feed trees.
Bird Nest and Roost Site Protection	5.13 (j)	1 Wedge-tailed Eagle stick nest recorded in cpt G_86	Species related exclusion zones on nests and roosts. Trees which contain raptor nests must be marked for retention. Potential for damage must be minimised during harvesting operations by utilising techniques of directional felling.
Burning	5.16	Threatened species have been recorded in these cpts.	The habitat requirement of threatened species must be taken into account when instigating hazard reduction burns to promote and maintain an understorey mosaic, significant areas of dense understorey vegetation and to minimise impact on large fallen logs.
Ground Habitat Protection	5.17 (a)	Nil Records – continue search	To the greatest extent practical, protect ground habitat from SFA. Ground habitat includes understorey vegetation, ground cover vegetation, leaf litter and fallen timber.
	5.17 (b)	CWRV + small mammals reptiles	Commercial Firewood collection is not permitted
	5.17 (d)	Larger CWRV	Firewood licences state that timber with hollows and/or over 40 cm diameter must not be collected or damaged.

Table 2: Species-specific Conditions

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Powerful Owl (<i>Ninox strenua</i>)	6.9	1 POWL record within 2km. of cpt boundaries	Landscape approach as specified in 6.9.2 will be used. Condition 5.13 may be applicable to protect any roosts or nests found.
Masked Owl (<i>Tyto novaehollandiae</i>)		1 MOWL records within 2km. of cpt boundaries	Search gully lines and heads of gullies for roost and nest sites.
Koala (<i>Phascolarctos cinereus</i>)	6.14	1 KOAL records in and within 100m of cpt boundaries	Evidence of koalas was found in the compartment, but pre-logging surveys did not detect intermediate or high use areas. Compartment mark-up 5.2.2 must be completed.
<i>Cryptandra longistaminea</i>	9 new sites	n/a	Where possible avoid damage to populations of this plant.

Table 3: Default Species-specific Conditions in lieu of survey

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.

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.	Likely to be present - 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.	Likely to be present - 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)

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

Conditions of the Fisheries Licence do not apply in these compartments

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	BMP for UMDL apply
Drainage Feature Protection	See HPOM for widths
Inherent Hazard Class	1
Dispersible Soils	Yes, Dispersible soil condition 69 of Schedule 4 of the EPL must apply to drainage feature crossings
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 – See note below EPL applies Remove debris on completion of operations

- There is an old, eroded (gully erosion) crossing on 86/2 Road that is not trafficable and is not to be used for snigging due to dispersible soils. This crossing is not recorded on operational map, but is located north of dump 5 along the boundary track where the track crosses the mapped drainage line.

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)
 - Licence issued under section 220ZW of the Fisheries Management Act 1994 (FL)
- 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 except for schedule 4 condition 6 relating to filter strips, protection zones and operational zones

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 *Cryptandra longistaminea* identification notes

