

EPA AUDIT REPORT – MARARA STATE FOREST, COMPARTMENTS 284 – 286, 293

Auditee:	FORESTRY CORPORATION OF NSW (FCNSW)
Audited State Forest & Cpts:	MARARA STATE FOREST, COMPARTMENTS 284 – 286, 293
Region:	Upper North-east Integrated Forestry Operations Approval (IFOA)
Date/Audit timing:	13 May 2015. Audit debrief with FCNSW staff held on 15 May 2015.
Type of audit:	Compliance
Purpose of audit:	Report on the level of compliance with conditions and environmental performance in line EPA compliance priorities.
Audit objectives:	<ol style="list-style-type: none"> 1. Assess compliance against audit criteria that reflect EPA compliance priorities. 2. Assess and categorise risk of identified non-compliance or appropriate further observations. 3. Request action plans against key audit findings so that auditee can use risk categorisation to inform timeliness and level of risk reduction control 4. Promote continuous improvement of the environmental performance of forestry operations.
Audit scope:	<ul style="list-style-type: none"> • Hollow bearing and recruitment tree retention, selection and protection • Rainforest protection • Koala identification searches • Compartment mark-up surveys • Threatened species planning <p>Physical scope: This audit was limited to the physical boundaries of compartments 284 – 286, 293.</p> <p>Temporal scope: The audit period adopted for assessment of compliance with operational conditions was on the day of the audit inspections (13 May 2015).</p>
Audit criteria:	<p>5.6 (b)(c)(h) Hollow bearing and recruitment tree retention, selection and protection</p> <p>5.4 Rainforest protection</p> <p>5.1 (f) Marking of exclusion and buffer zones</p> <p>5.2 Compartment mark-up surveys</p> <p>Condition 7 General survey requirements</p> <p>Condition 8 Pre-logging and pre-roading surveys</p>
Summary of Operations	<p>Operation commencement date: 12 January 2015</p> <p>Stand age: Non-regrowth Zone</p> <p>Silvicultural practice:</p> <ul style="list-style-type: none"> • Mixed age Spotted Gum (100% NHA) – Single tree selection, expected removal of basal area <40%

1. Audit Findings – Overview

The EPA identified 0 non-compliances and 59 compliances with the IFOA and POEO Act, including determinations of further observations. A summary of EPAs findings are in the table below. Full details and evidence of audit findings can be found in the **Audit Findings Table** in **Attachment 1** including further observations made from the audit.

EPA Compliance Priority 14/15	Audit Scope	Compliant	Non-compliant	Not Determined	Not Applicable
Exclusion Zones	Rainforest protection	1	0	0	0
	Rainforest mark-up	1	0	0	0
	HCVOG protection	1	0	0	0
	HCVOG mark-up	1	0	0	0
	Ridge & Headwater protection	1	0	0	0
	Ridge & Headwater mark-up	1	0	0	0
	Compartment mark-up surveys	0	0	1	0
	Threatened species planning	18	0	0	1
Koala	Identification/search	1	0	1	0
Hollow bearing and recruitment trees	H Retention	1	0	0	0
	H Selection	12	0	0	0
	R Retention	1	0	0	0
	R Selection	5	0	0	0
	H&R Protection	13	0	0	0
	H&R Mark-up	2	0	0	0
	TOTAL	59	0	2	1

2. Audit Recommendations

Condition No.	Number of non-compliances (and sample)	Action Details	Non-compliance Code	Target/Action Date
-	-	-	-	-
Total	0			

3. Audit Conclusions

This audit achieved its audit objective by determining compliance with the specified criteria of the audit. The EPA issued FCNSW with the draft audit findings and FCNSW submitted actions to mitigate the non-compliances (Attachment 3). The EPA will follow up on the outcomes of these audits to ensure levels of compliance are enhanced for criteria that relate to this audit.

4. List of Attachments

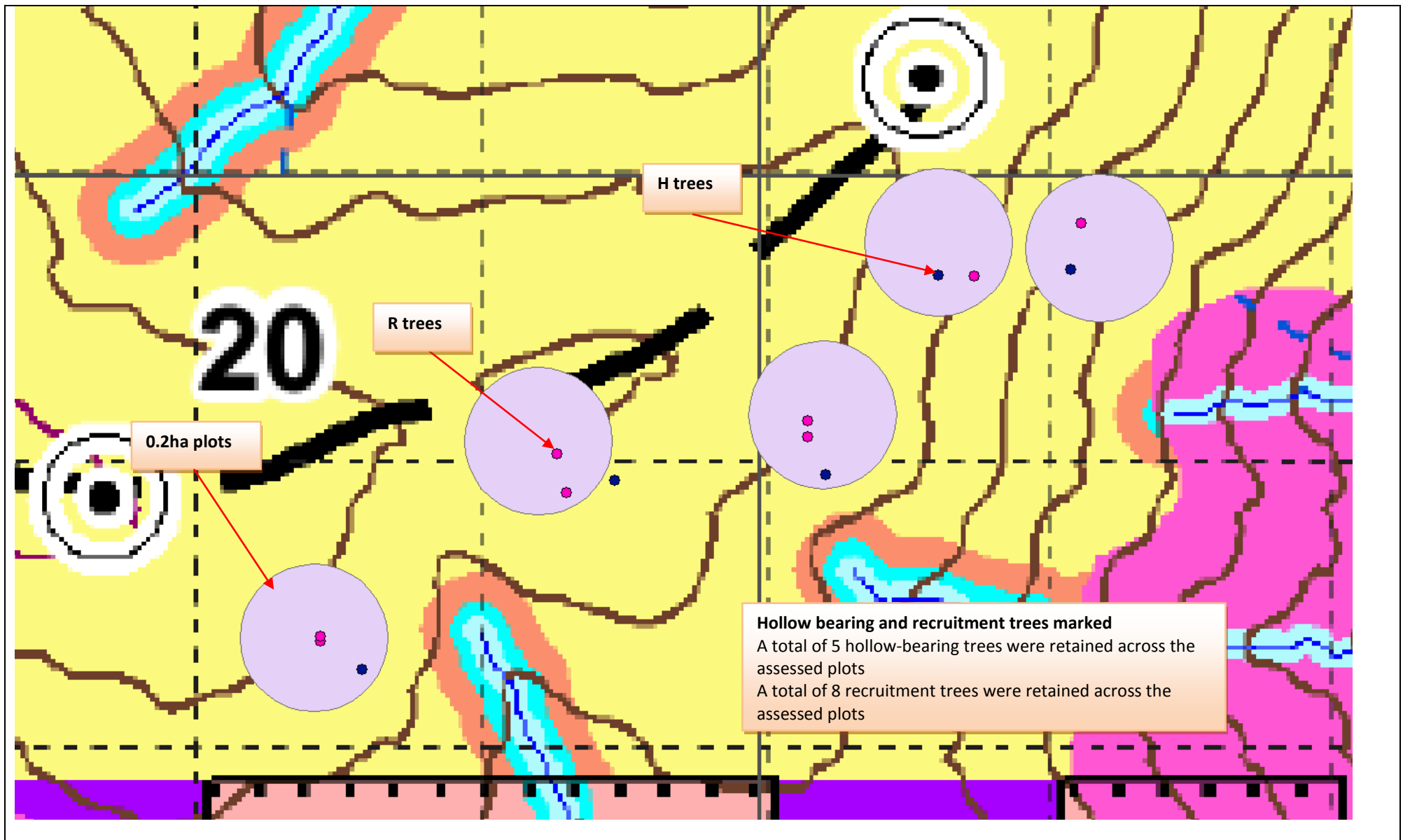
Attachment 1) Audit Findings Table

Attachment 2) EPA Risk Matrix for Non-compliances

Attachment 3) FCNSW Submission on draft audit findings

EPA DRAFT AUDIT FINDINGS TABLE – MARARA STATE FOREST COMPARTMENT 284 – 286, 293
Assessment of Compliance with Lower North East Integrated Forestry Operations Approval
Threatened Species Licence and Environment Protection Licence

CONDITIONS RELATED TO HOLLOW BEARING TREES (NON-REGROWTH ZONE) – RETENTION				
Condition No. and Detail	Compliant? Yes/No/Not determined/ Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.6(b): Within the Non-regrowth Zone the following requirements for retention of Hollow-bearing trees apply: i. A minimum of five hollow-bearing trees must be retained per hectare of net logging area. Where this density is not available, the existing hollow-bearing trees must be retained plus additional trees must be retained as hollow-bearing trees to meet the required rate.	Yes	0/1 (1ha assessed)	NA	NA
Comment and Evidence				
<p>EPA found that FCNSW complied with this condition in the area assessed.</p> <p>EPA Officers assessed one area across the net harvest area south of log dump 21. The total area assessed was 1 hectare. EPA officers recorded 5 marked H trees within the assessed area. FCNSW achieved a retention rate of 5 H/ha.</p>				



CONDITIONS RELATED TO HOLLOW BEARING TREES (NON-REGROWTH ZONE) – SELECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
<p>5.6 b iii.</p> <p>The remaining hollow-bearing trees and any additional trees required to be retained to meet the retention rate under this condition must be selected with the objective of retaining trees having as many of the following characteristics as possible:</p> <ul style="list-style-type: none"> - belonging to a cohort of trees with the largest dbhob, - good crown development, <p>(Note: this does not restrict the selection of trees with broken limbs consistent with the hollow-bearing tree definition).</p> <ul style="list-style-type: none"> - minimal butt damage, - represent the range of hollow-bearing species that occur in the area, - located such that they result in retained trees being evenly scattered throughout the net logging area. 	Yes	0/12 (12 trees in 2ha area pre and post harvest)	NA	NA

Comment and Evidence

EPA found that FCNSW complied with this condition in the area assessed. The EPA assessed 1ha pre-harvest and 1ha post harvest.

Post-harvest

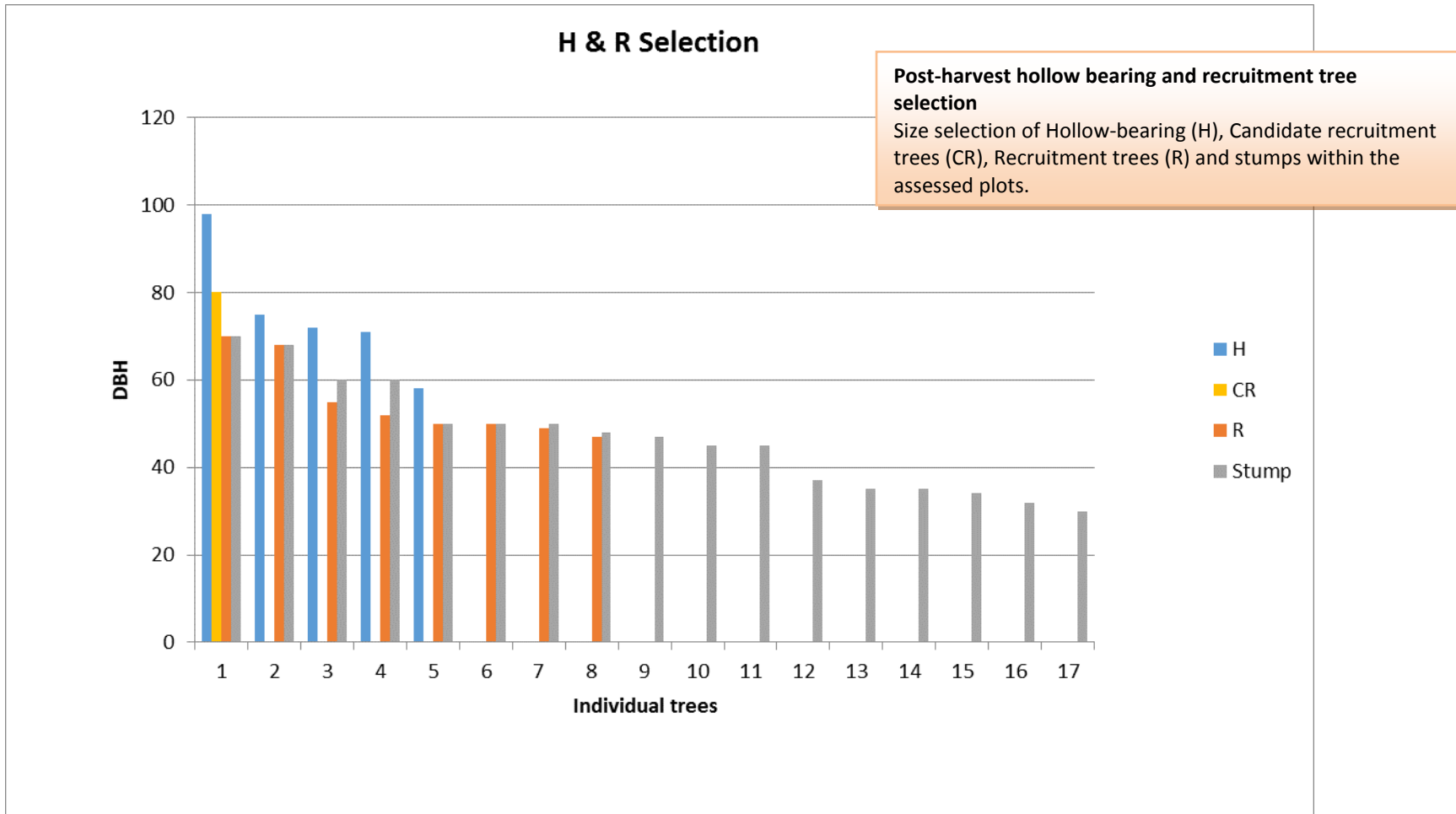
The EPA found that in the assessed area (1 ha) a minimum of 5 compliant H trees were required to be retained (i.e. minimum rate of 5H/ha). The EPA determined that 5 H trees marked and retained were all compliant with selection conditions.

Pre-harvest

The EPA found that in the assessed area (1 ha) a minimum of 5 compliant H trees were required to be retained (i.e. minimum rate of 5H/ha). The EPA determined that 7 H trees marked and retained were all compliant with selection conditions.

Location	Tree	Waypoint	Tree Type	DBHOB (cm)	Crown development (Supressed?)	Tree growth stage (Jacobs)	Crown damage (operator)	Logging Debris >1m within 5m	Butt Damage	Ground disturbance (5 mtrs)
Post-harvest	Marked H	-	Spotted Gum	71	Co dom	mature	no	no	no	no
Post-harvest	Marked H	1551	Tallowwood	98	dom	Late mat	no	no	no	no
Post-harvest	Marked H	1558	Spotted gum	58	dom	mature	no	no	no	no
Post-harvest	Marked H	1567	Spotted Gum	72	dom	mature	no	no	no	no
Post-harvest	Marked H	1571	Spotted Gum	75	dom	Late mat	no	no	no	No
Pre- harvest	Marked H	1530	Mahogany	-	dom	Late mat	-	-	-	-

Pre- harvest	Marked H	1531	-	-	dom	Late mat	-	-	-	-
Pre- harvest	Marked H	1535	Ironbark	-	dom	Late mat	-	-	-	-
Pre- harvest	Marked H	1542	Grey Gum	-	Sub-dom	Late mat	-	-	-	-
Pre- harvest	Marked H	1545	Grey Gum	-	dom	Late mat	-	-	-	-
Pre- harvest	Marked H	1547	Grey Gum	-	dom	Late mat	-	-	-	-
Pre- harvest	Marked H	1548	Grey Gum	-	dom	Late mat	-	-	-	-





Hollow bearing tree

Marked and retained hollow-bearing tree at waypoint 1558 with 98cm dbhob.

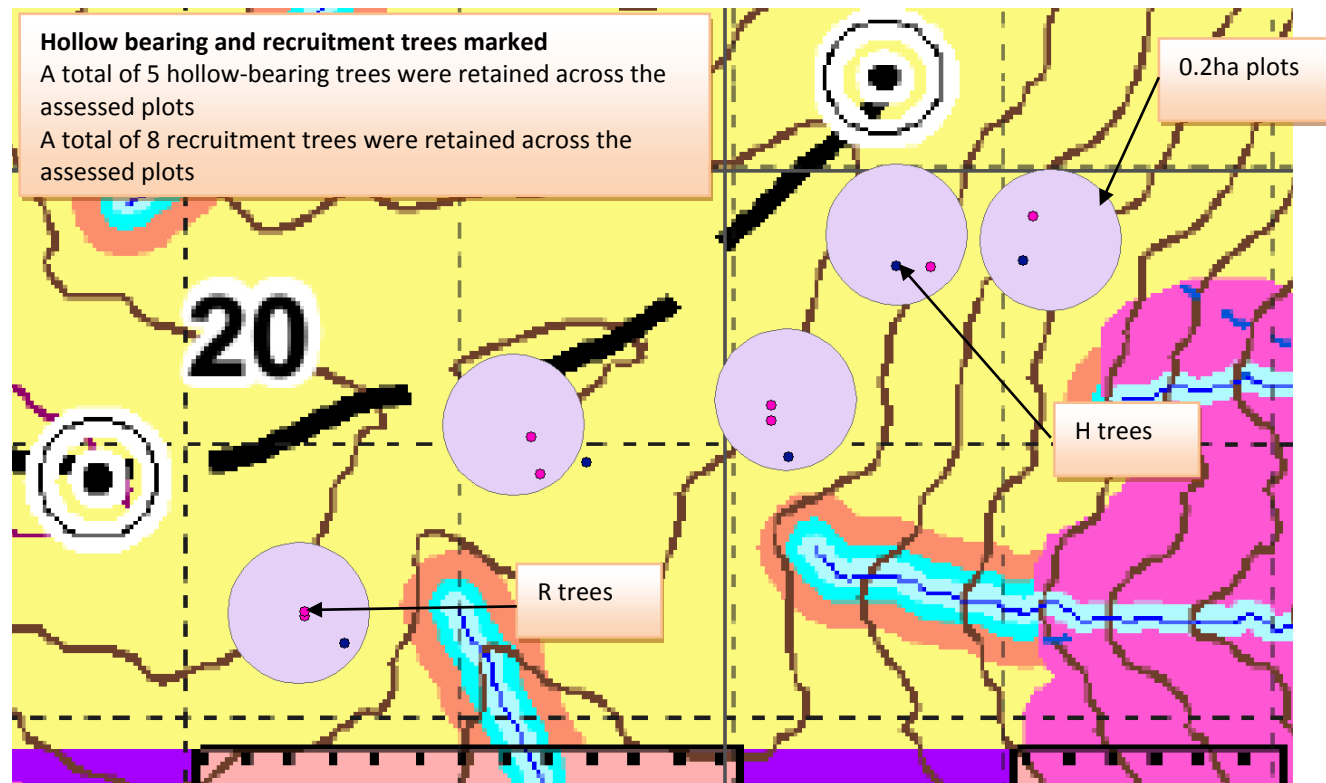
CONDITIONS RELATED TO RECRUITMENT TREES (NON-REGROWTH ZONE) – RETENTION

Condition No. and Detail	Compliant? Yes/No/Not determined/ Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.6c) Within the Non-regrowth Zone the following requirements for retention of Recruitment trees apply: i. A minimum of five recruitment trees must be retained per hectare of net logging area.	Yes	0/1 (1ha area assessed)	NA	NA

Comment and Evidence - R tree Retention

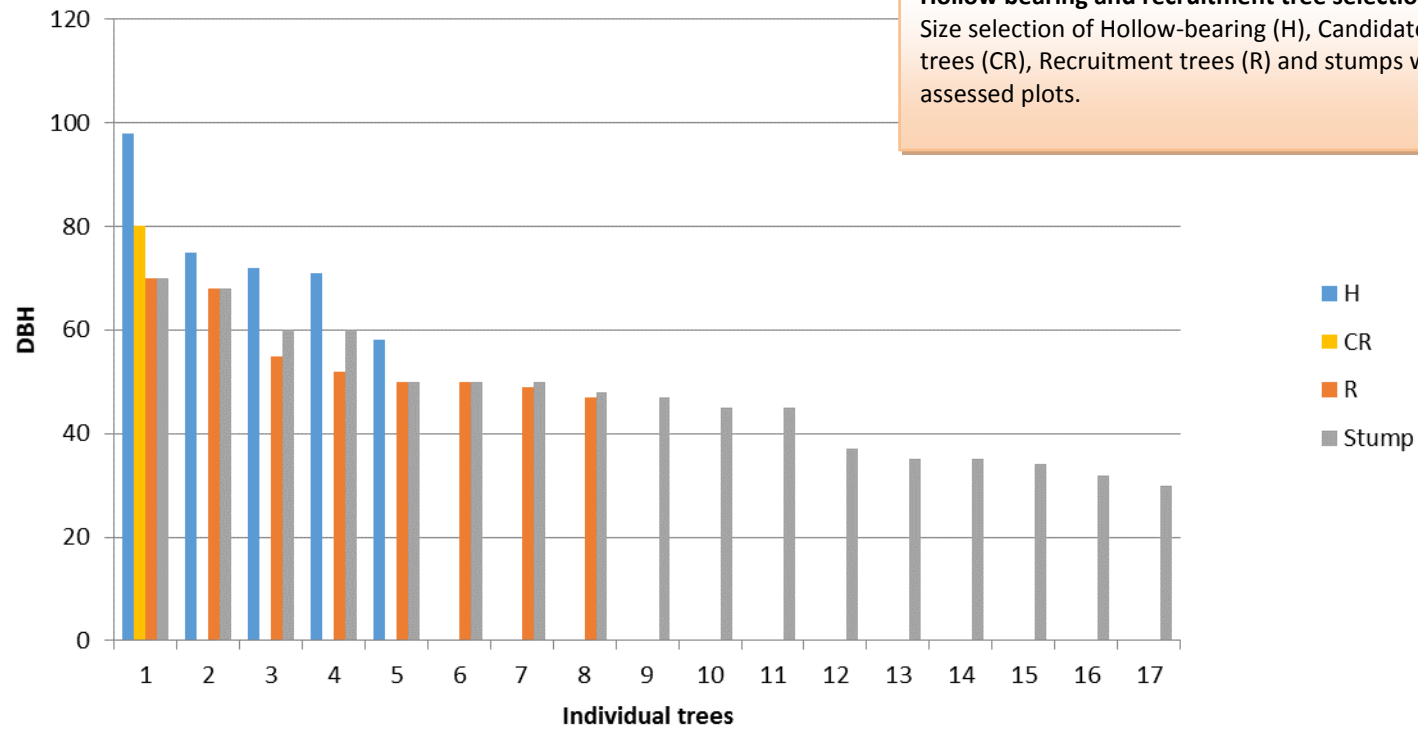
EPA found that FCNSW complied with this condition in the area assessed.

EPA Officers assessed one area across the net harvest area south of log dump 21. The total area assessed was 1 hectare. EPA officers recorded 8 marked R trees and 1 candidate (unmarked) R tree within the assessed area. FCNSW achieved a retention rate of 9 H/ha.



CONDITIONS RELATED TO RECRUITMENT TREES (NON-REGROWTH ZONE) – SELECTION				
Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.6c ii. Recruitment trees must be selected with the objective of retaining trees having as many of the following characteristics as possible: <ul style="list-style-type: none"> - belong to a cohort of trees with the largest dbhob, - located such that they result in retained trees being evenly scattered throughout the net logging area, - good crown development, - minimal butt damage, - represent the range of hollow-bearing species that occur in the area. 	Yes	0/5 (5 trees in 1ha area)	NA	NA
Comment and Evidence – R tree Selection				
<p>EPA found that FCNSW selection of 5 of the 9 trees retained (required retention rate) in this area were compliant with this condition.</p> <p>Belong to a cohort of trees with the largest dbhob: Across the one NHA area assessed EPA officers found that R trees where that of a cohort of trees with the largest DBH</p> <p>Located such that they result in retained trees being evenly scattered throughout the net logging area: five out of five plots contained R trees.</p> <p>Good crown development: Not all trees where considered to have good crown development. Three trees showed an early mature growth stage. No trees were suppressed.</p> <p>Minimal butt damage: Officers didn't observe any instances of butt damage to retained trees.</p> <p>Represent the range of hollow-bearing species that occur in the area – species represented the range of hollow bearing trees within the area including mahogany, grey gum, tallowwood and spotted gum.</p>				

H & R Selection



	Waypoint	Tree Type	DBHOB (cm)	Crown development (Supressed?)	Tree growth stage (Jacobs)	Crown damage (operator)	Logging Debris >1m within 5m	Butt Damage	Ground disturbance (5 mtrs)
Marked R	1550	Spotted Gum	68	Co -dom	Mature	no	yes	no	no
Marked R	1552	Tallowwood	49	Sub-dom	Early mat	no	no	no	no
Marked R	1556	Tallowwood	47	Sub-dom	Early mat	no	no	no	no
Marked R	1560	Mahogany	50	Co dom	Mature	no	no	no	no
Marked R	1565	Tallowwood	52	Co dom	Mature	no	no	no	No
Marked R	1570	Grey Gum	70	Co-dom	Mature	no	no	no	No

Marked R	1573	Tallowwood	55	Co-dom	Mature	Yes	no	Yes	No
Marked R	1566	Spotted Gum	50	Sub-dom	Early mat	no	no	no	No
Candidate R	1578	Tallowwood	80	Co-dom	Mature	no	no	no	No



Recruitment trees
Marked recruitment tree at waypoint 1565,
52cm dbhob

The EPA also made observations of recruitment tree selection within a 1 hectare area ahead of current harvesting operations east of log dump 16. Within this area 8 recruitment trees were marked and selected for retention. The EPA made observations that two recruitment trees selected did not show the best crown development.

Marked R tree		Unmarked tree nearby (not selected)		Comments
Waypoint 1532		Waypoint 1533		Marked Grey gum showed poor crown development compared to a nearby tallowwood.

Waypoint 1537		Waypoint 1538		Marked Ironbark showed poor crown development compared to a nearby mahogany species.
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WHY IS COMPLIANCE WITH THIS TSL CONDITION IMPORTANT?

Largest Size Cohort:

The presence, abundance and size of hollows are positively correlated with tree basal diameter, which is an index of age (Lindenmayer *et al.* 1991a, Bennett *et al.* 1994, Ross 1999, Soderquist 1999, Gibbons *et al.* 2000, Shelly 2005). Tree diameter at breast height (DBH) is, in turn, a strong predictor of occupancy by vertebrate fauna (Mackowski 1984, Saunders *et al.* 1982, Smith and Lindenmayer 1988, Gibbons *et al.* 2002, Kalcounis-Rüppell *et al.* 2006). The minimum size-class at which trees consistently (>50% of trees) contain hollows varies depending on the species and environmental conditions, yet is always skewed toward the larger, more mature trees. (Reference: *Loss of Hollow-bearing Trees - key threatening process determination - NSW Scientific Committee - final determination (2007)*)

CONDITIONS RELATED TO HOLLOW BEARING & RECRUITMENT TREES (REGROWTH ZONE) – PROTECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
<p>5.6h) Protection of retained trees</p> <p>i. When conducting specified forestry activities and post-logging burning, damage to trees retained under conditions 5.6 (a), 5.6 (b), 5.6 (c), 5.6 (d), 5.6 (e) and 5.6 (f) of this licence must be minimised to the greatest extent practicable. During harvesting operations, the potential for damage to these trees must be minimised by utilising techniques of directional felling.</p> <p>ii. In the course of conducting specified forestry activities, logging debris must not, to the greatest extent practicable, be allowed to accumulate within five metres of a retained hollow bearing tree, recruitment tree, stag, Allocasuarina with more than 30 crushed cones beneath, eucalypt feed tree, or Yellow-bellied Glider or Squirrel Glider sap feed tree. Logging debris within a five metres radius of retained trees must be removed or flattened to a height of less than one metre. Disturbance to ground and understorey must be minimised to the greatest extent practicable within this five metres radius. Habitat and recruitment trees must not be used as bumper trees during harvesting operations.</p>	Yes	0/13 (13 trees in 1ha area)	NA	NA

Comment and Evidence

EPA found that FCNSW complied with this condition in the area assessed.

EPA observed one tree with slight butt damage that appeared to be used as a bumper.

	Waypoint	Tree Type	DBHOB (cm)	Crown development (Supressed?)	Tree growth stage (Jacobs)	Crown damage (operator)	Logging Debris >1m within 5m	Butt Damage	Ground disturbance (5 mtrs)
Marked H	1551	Spotted Gum	71	Co dom	mature	no	no	no	no
Marked H	1558	Tallowwood	98	dom	Late mat	no	no	no	no
Marked H	1567	Spotted gum	58	dom	mature	no	no	no	no
Marked H	1571	Spotted Gum	72	dom	mature	no	no	no	No
Marked H	1575	Spotted Gum	75	dom	Late mat	no	no	no	no
Marked R	1550	Spotted Gum	68	Co -dom	mature	no	no	no	no
Marked R	1552	Tallowwood	49	Sub-dom	Early mat	no	no	no	no
Marked R	1556	Tallowwood	47	Sub-dom	Early mat	no	no	no	no

Marked R	1560	Mahogany	50	Co dom	Mature	no	no	no	no
Marked R	1565	Tallowwood	52	Co dom	Mature	no	no	no	no
Marked R	1570	Grey Gum	70	Co-dom	Mature	no	no	no	no
Marked R	1573	Tallowwood	55	Co-dom	Mature	no	no	slight	no
Marked R	1566	Spotted Gum	50	Sub-dom	Early mat	no	no	no	no



Retained tree protection

Marked recruitment tree at waypoint 1573 with slight bumper damage.

CONDITIONS RELATED TO HOLLOW BEARING & RECRUITMENT TREES (NON-REGROWTH ZONE) – MARKING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.6 h) Protection of retained trees iii. Retained trees referred to in conditions 5.6 (a) i., 5.6 (b) i., 5.6 (c) i., 5.6 (d) i., 5.6 (e) i., 5.6 (f) i., 5.6 (f) iii. and 5.6 (f) iv. of this licence must be marked for retention. The only exception to the marking of the retained trees can occur where the understorey consists of thick impenetrable lantana greater than one metre high or other impenetrable understorey. SFNSW must clearly document and justify such situations in harvest planning documentation either during pre-planning or as it becomes apparent during compartment mark-up.	Yes	0/2 (2 areas assessed pre and post harvest)	NA	NA
Comment and Evidence				
<p>EPA found that FCNSW complied with this condition in the area assessed.</p> <ol style="list-style-type: none"> 1) EPA officers recorded 13 hollow bearing and recruitment trees that had been marked for retention within the assessed area. EPA officers also made a further observation that other tree marking had occurred within other areas of the compartment. 2) EPA field checked mark up 300 metres in front of logging operations east of log dump 16. 15 marked H & R trees were observed. 				



Mark-up of R tree in harvested area (WP 1566)

Further observation

The EPA recorded 3 marked H & R trees on marked exclusion zone boundaries. The EPA does not consider exclusion zones are part of the net logging area as these trees will be retained within the exclusion zone. Hollow-bearing and recruitment trees must not be marked on exclusion zone boundaries.

H & R mark-up	Exclusion boundary mark-up	EPA waypoint identifier	Comments
R mark-up	Old growth boundary (3 bar)	1591	Mark-up on mapped boundary
H mark-up	Ridge & headwater boundary	1606	Mark-up on mapped boundary
R mark-up	Ridge & headwater boundary	1615	Mark-up on mapped boundary



Mark-up of H tree on
exclusion zone boundary

CONDITIONS RELATED TO COMPARTMENT MARK-UP SURVEYS

Condition No. and Detail	Compliant? Yes/No/Not determined/No t applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.2.1 General requirements An adequately trained person must conduct a thorough search for, record and appropriately mark the listed threatened and protected species features during or before the marking up of a compartment.	Not determined			

Comment and Evidence

EPA officers found that condition 5.2.1 (a) not complied with in the assessed area in relation to *vii Allocasuraina* or *casuarina spp* with chewed cones beneath. During the audit EPA officers observed one *Allocasuraina* or *casuarina spp* with chewed cones beneath at waypoint 1533. The tree was not marked for protection.



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CONDITIONS RELATED TO COMPARTMENT MARK-UPSURVEYS				
Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
<p>5.2.2 Koala Mark-up Searches</p> <p>a) In compartments which contain preferred forest types, marking-up must be conducted at least 300 metres in advance of harvesting operations.</p> <p>b) During the marking up of the compartment, an adequately trained person must inspect trees at ten metres intervals. Primary browse trees must be inspected. In the event that there are no primary browse trees, secondary browse trees must be inspected. In the event that there are no primary browse trees or secondary browse trees, other trees and incidental browse trees must be inspected. Inspections must include thoroughly searching the ground for scats within at least one metre of the base of trees greater than 30 centimetres dbhob.</p>	<p>Yes</p> <p>Not determined</p>	<p>0/1 (1ha area)</p>	<p>NA</p>	<p>NA</p>
Comment and Evidence				
<p>EPA found that FCNSW complied with this condition in the area assessed but has not determined whether ground at the immediate base of trees was searched thoroughly for koala scats.</p> <p>EPA officers assessed compartment mark-up ahead of the active operations north east of log dump 10. EPA officers observed that hollow bearing and recruitment trees had been marked up to the furthest extent from harvesting which complied with the TSL requirements of 300m ahead of active operations.</p> <p>EPA officers were not able to determine if individual trees had been inspected for evidence of Koala activity as per the TSL requirements. As such 5.2.2b) was not determined.</p>				

CONDITIONS RELATED TO RAINFOREST AND RAINFOREST EXCLUSION ZONES – PROTECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
<p><i>5.4 - Rainforest</i></p> <p>a) Specified forestry activities, except road and snig track construction in accordance with condition 5.4 (e), and road re-opening, are prohibited within all areas of Rainforest and exclusion zones around warm temperate Rainforest.</p>	Yes	0/1 (30m boundary assessed)	NA	NA
Comment and Evidence				
<p>EPA found that FCNSW complied with this condition in the area assessed.</p> <p>The EPA assessed 30 metres of rainforest exclusion boundary, south of log dump 21. The EPA did not observe any incursions into the rainforest boundary.</p>				

Rainforest protection

Rainforest boundary with no specified forestry activities within boundary.



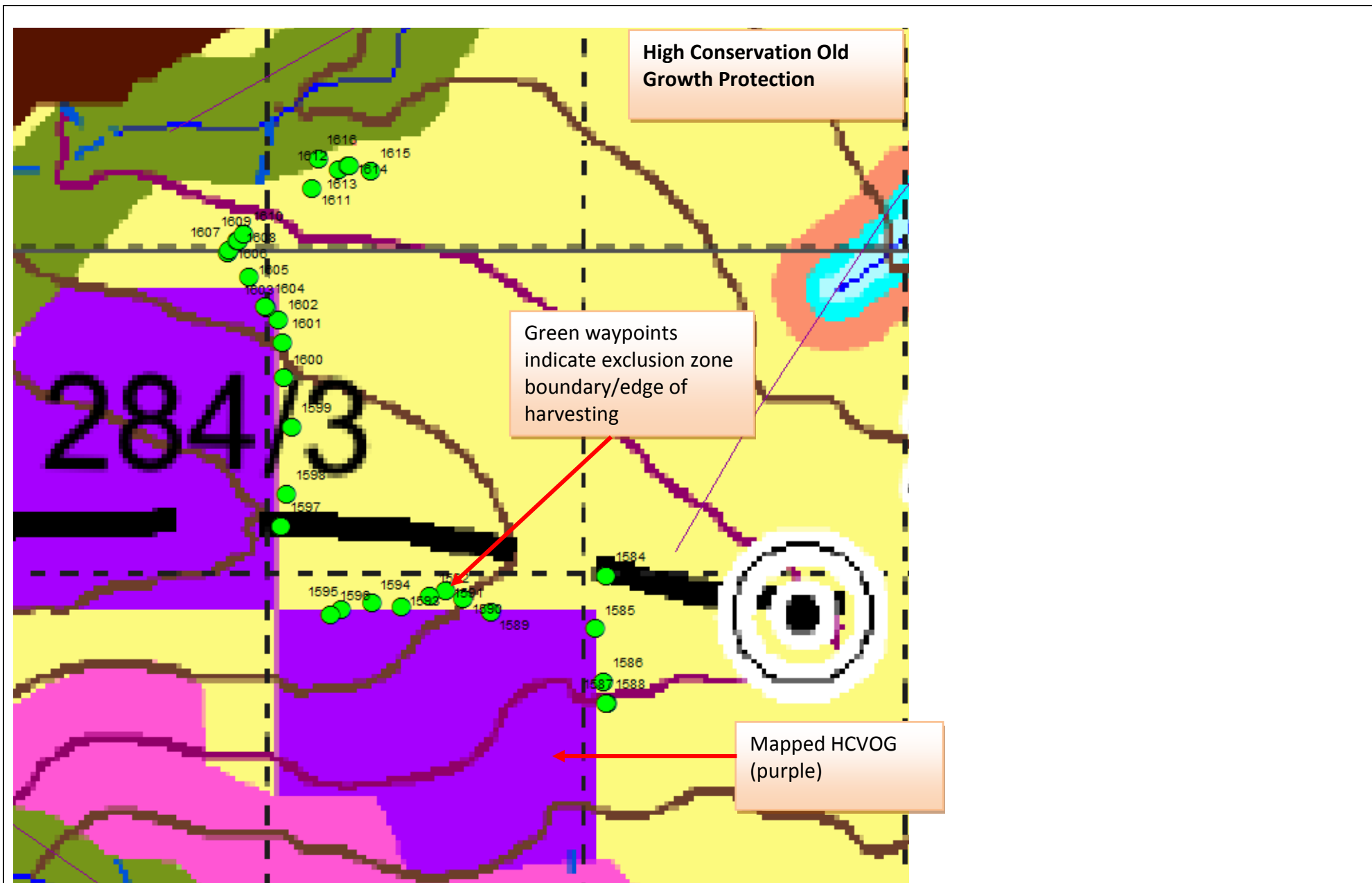
Debris in net logging area.

CONDITIONS RELATED TO RAINFOREST AND RAINFOREST EXCLUSION ZONES – MARKING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.1F All exclusion zone and buffer zone boundaries must be marked in the field, except where specified forestry activities will not come within 50 metres of such boundaries. The outer edge of lines shown on the map is considered to represent the boundary of the mapped feature when marking the feature in the field.	Yes	0/1 (30m boundary assessed)	NA	NA
Comment and Evidence				
EPA found that FCNSW complied with this condition in the area assessed. The EPA assessed 30 metres of rainforest exclusion boundary, south of log dump 21. The EPA observed this area to be marked up in accordance with the licence requirements.				

CONDITIONS RELATED TO HIGH CONSERVATION VALUE OLD GROWTH (HCVOG)– PROTECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.3 a) Specified forestry activities, except tree felling in accordance with condition 5.3 (b), road and snig track construction in accordance with condition 5.3 (i), and road re-opening, are prohibited within all areas of High Conservation Value Old Growth Forest.	Yes	0/1 (260m boundary assessed)	NA	NA
Comment and Evidence				
EPA found that FCNSW complied with this condition in the area assessed. The EPA assessed 260m of HCVOG exclusion west of log dump 20. In this area no specified forestry activities were observed within the mapped exclusion zone.				



**High Conservation Old
Growth Protection**

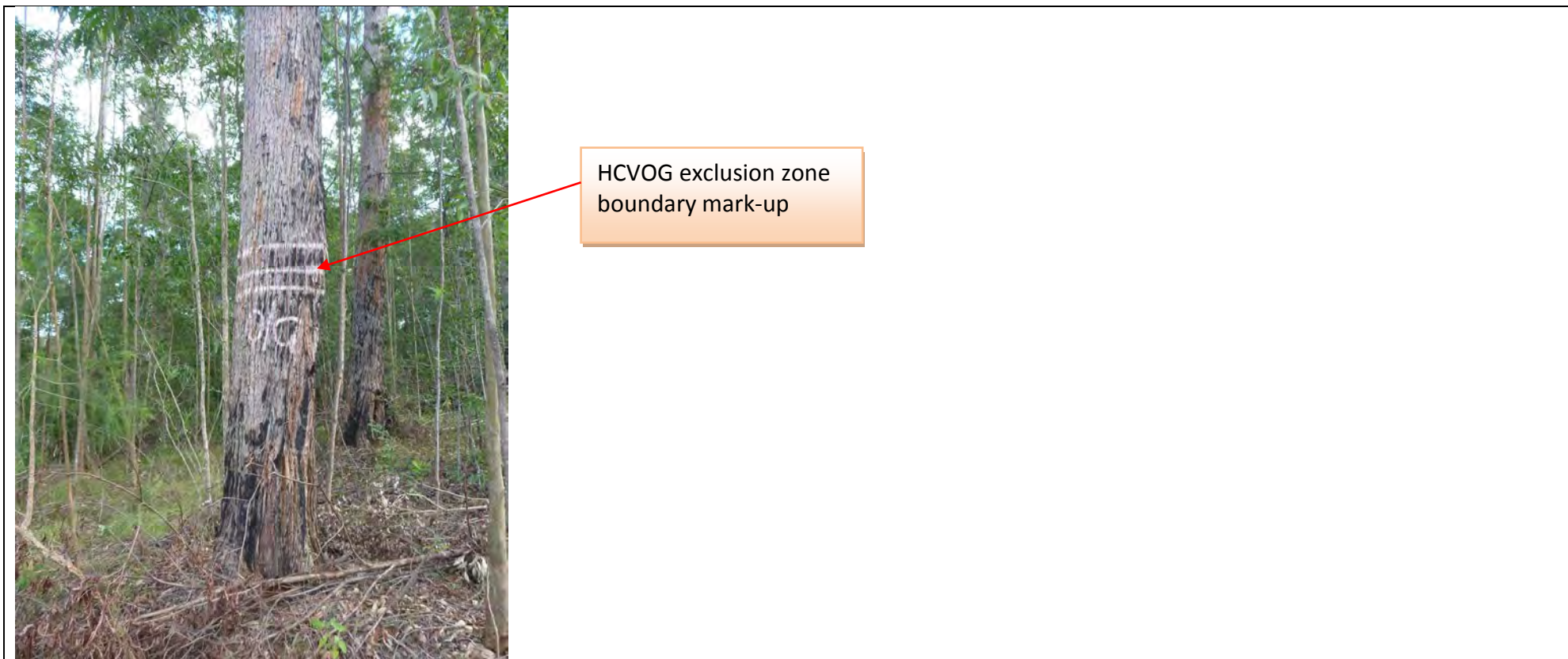


Mark up showing High
Conservation Value Old
Growth exclusion.

Specified forestry
activities outside
exclusion zone

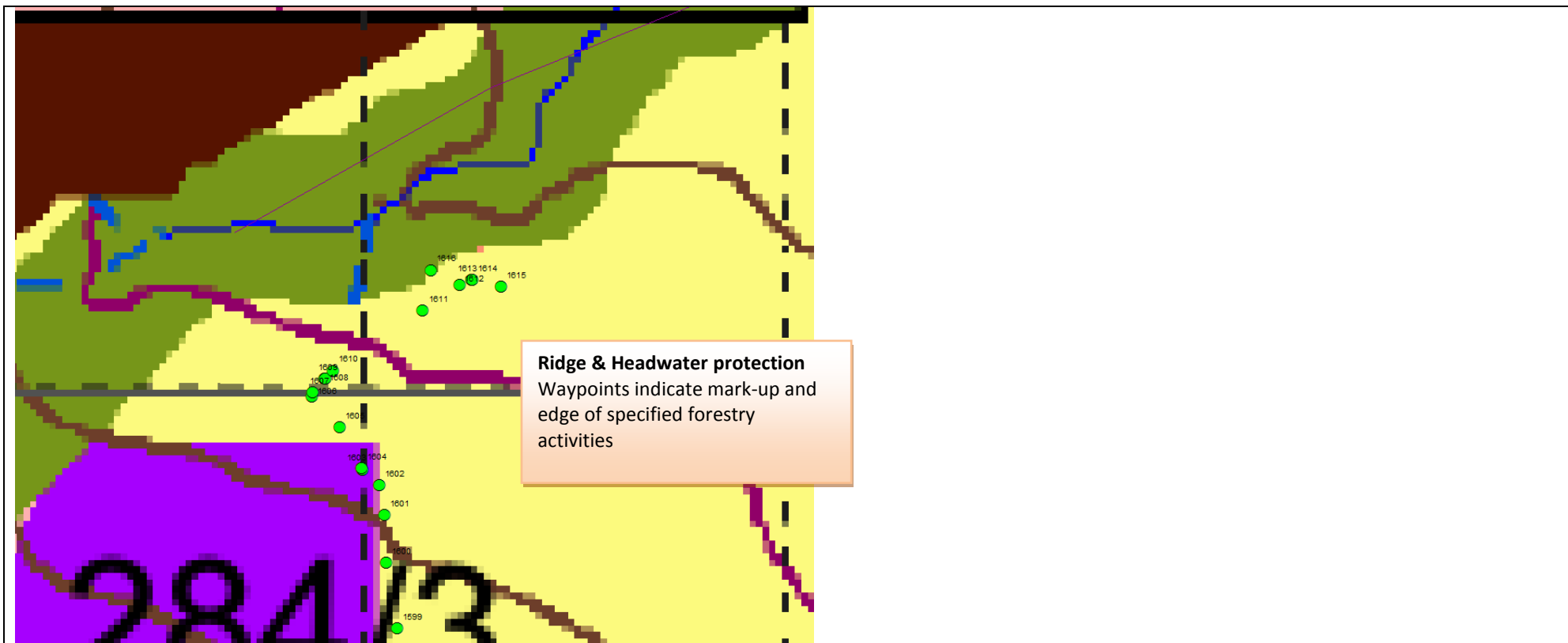
CONDITIONS RELATED TO HIGH CONSERVATION VALUE OLD GROWTH (HCVOG) – MARKING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
<p>5.1F</p> <p>All exclusion zone and buffer zone boundaries must be marked in the field, except where specified forestry activities will not come within 50 metres of such boundaries. The outer edge of lines shown on the map is considered to represent the boundary of the mapped feature when marking the feature in the field.</p>	Yes	0/1 (260m boundary assessed)	NA	NA
Comment and Evidence				
<p>EPA found that FCNSW complied with this condition in the area assessed.</p> <p>The EPA assessed 260m of HCVOG exclusion west of log dump 20. In this area mark-up was observed along the mapped exclusion zone boundary.</p>				



CONDITIONS RELATED TO RIDGE AND HEADWATER EXCLUSION ZONES – PROTECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
5.1a (i) All specified forestry activities are prohibited in exclusion zones.	Yes	0/1 (70m boundary assessed)	NA
Comment and Evidence			
EPA found that FCNSW complied with this condition in the area assessed. The EPA assessed one 70m section of Ridge and Headwater exclusion zone north west of log dump 20. No specified forestry activities were observed within the mapped boundary.			



CONDITIONS RELATED TO RIDGE AND HEADWATER EXCLUSION ZONES – MARKING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
5.1F All exclusion zone and buffer zone boundaries must be marked in the field, except where specified forestry activities will not come within 50 metres of such boundaries. The outer edge of lines shown on the map is considered to represent the boundary of the mapped feature when marking the feature in the field.	Yes	0/1 (70m boundary assessed)	NA

Comment and Evidence

EPA found that FCNSW complied with this condition in the area assessed.

The EPA assessed one 70m section of Ridge and Headwater exclusion zone north west of log dump 20. Mark-up was observed outside of the mapped exclusion zone.



Ridge & Headwater
exclusion zone mark-up

CONDITIONS RELATED TO THREATENED SPECIES PLANNING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
8.7 Conditions related to pre-logging and pre-roading compartment traverse	Yes	0/1	NA
Comment and Evidence			
<p>EPA found that FCNSW complied with this condition across the compartments.</p> <p>To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report and raw survey data sheets.</p> <p>FCNSW recorded 10 compartment traverse transects across the compartments totalling 11450m and 30:32 hours, this exceeds the required licence distance of 10,380m and time of 25:57. All traverse routes and data was recorded as required.</p>			

CONDITIONS RELATED TO THREATENED SPECIES PLANNING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size) & why is it important	Action required by licensee
8.8.1 Targeted fauna surveys - General	Yes	0/12	NA
Comment and Evidence			
<p>EPA found that FCNSW complied with this condition across the compartments.</p> <p>To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report and raw survey data sheets and compared the recorded data with modelled habitat (Habitat models CRA Northern NSW layer) and NSW Atlas records of the listed threatened species under this condition. FCNSW listed the following species as having known habitat or CRA modelled habitat present with the compartments.</p> <ul style="list-style-type: none"> - <i>Mixophyes iteratus</i> - Golden-tipped bat - Brush-tailed phascogale - Hastings river mouse 			

- Squirrel glider
- Yellow-bellied glider
- Greater glider
- Masked owl
- Powerful owl
- Red goshawk
- Regent honeyeater
- Swift parrot

CONDITIONS RELATED TO THREATENED SPECIES PLANNING - FROGS

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
8.8.3 A Targeted fauna surveys – Riparian frog surveys	Yes	0/1	Ensure frog surveys are conducted in optimal conditions as required by the licence i.e. after rain, during very light rain, or when rain is intermittent and during the preferred survey seasons.

Comment and Evidence

EPA found that FCNSW complied with this condition across the compartments.

To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report and raw survey data sheets. Riparian frog surveys were required for *Mixophyes iterates*.

Riparian frog surveys: FCNSW reported that eight replicated riparian frog surveys were conducted within the compartments meeting the requirements of the licence. Surveys were reported to have occurred between the months of November 2013 and February 2014, which meets the required survey season of August – March, and the preferred survey season of *Mixophyes iterates* of October to February. A total time of 3:54hrs was recorded which exceeded the required time of 2:36hrs. FCNSW recorded evidence of rain within the last 24hours for one riparian frog survey only. The Licence requires all attempts to be made to survey for riparian frogs just after rain, during very light rain, or when rain is intermittent.

No targeted species were recorded in the survey.

CONDITIONS RELATED TO THREATENED SPECIES PLANNING – OWLS & GLIDERS

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
8.8.5 Targeted fauna surveys – Nocturnal call playback	Not applicable	NA	NA

Comment and Evidence

This condition is not applicable as condition 7b was implemented.

To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report. Nocturnal call playback was required for the Masked Owl, Powerful Owl, and yellow-bellied glider.

Masked and Powerful owls – In lieu of surveying for these owls FCNSW chose to implement Condition 7b of the TSL – *Pre-logging and pre-roading surveys are not required for the following species where SFNSW choose to implement the species prescription, as described below:*

v. Powerful owl, masked owl, barking owl – Implement the landscape approach as per condition 6.9.2 of the TSL.

Yellow-Bellied gliders – Targeted species recorded: In lieu of surveying for these owls FCNSW chose to implement Condition 7b of the TSL – *Pre-logging and pre-roading surveys are not required for the following species where SFNSW choose to implement the species prescription, as described below:*

Xii. Yellow Bellied glider.

CONDITIONS RELATED TO THREATENED SPECIES PLANNING – NOCTURNAL SPECIES

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
8.8.6 Targeted fauna surveys – Spotlight survey	Yes	0/1	NA

Comment and Evidence

EPA found that FCNSW complied with this condition across the compartments.

To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report and raw survey data sheets. Spotlight surveys were required for the Masked Owl, Powerful Owl, squirrel glider, greater glider and yellow-bellied glider.

Masked and Powerful owls – In lieu of surveying for these owls FCNSW chose to implement Condition 7b of the TSL – *Pre-logging and pre-roading surveys are not required for the following species where SFNSW choose to implement the species prescription, as described below:*

v. Powerful owl, masked owl, barking owl – Implement the landscape approach as per condition 6.9.2 of the TSL.

Squirrel, Greater glider and Yellow-Bellied gliders – FCNSW reports show that five replicated spotlight transects were undertaken for 5600 metres with a total survey time of 6:25hrs, meeting the licence conditions. All transects were undertaken on foot by two observers. Windy and rainy conditions were avoided.

Targeted species recorded:

0 Greater Gliders

0 Masked owls

0 Powerful owl

1 yellow-bellied gliders

0 Squirrel gliders

CONDITIONS RELATED TO THREATENED SPECIES PLANNING – HASTINGS RIVER MOUSE

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
8.8.9 A Targeted fauna surveys – Hastings River Mouse – Habitat suitability surveys 8.8.9 B Targeted fauna surveys – Hastings River Mouse – Targeted surveys	Yes	0/2	NA

Comment and Evidence

EPA found that FCNSW complied with this condition across the compartments.

To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report and raw survey data sheets.

Habitat suitability – FCNSW reports illustrate that the rapid assessment approach was undertaken as described in 8.8.9 A i) and the note following that condition. FCNSW documented this rapid assessment as required by this condition. 39 sites were assessed for habitat suitability with 34 sites identifying medium – high habitat suitability therefore triggering the requirement of 8.8.9 B.

Targeted surveys – FCNSW reports show that 350 Elliot traps were set to survey the Hastings River Mouse for over four nights. Transects were placed in suitable habitat to maximise capture.

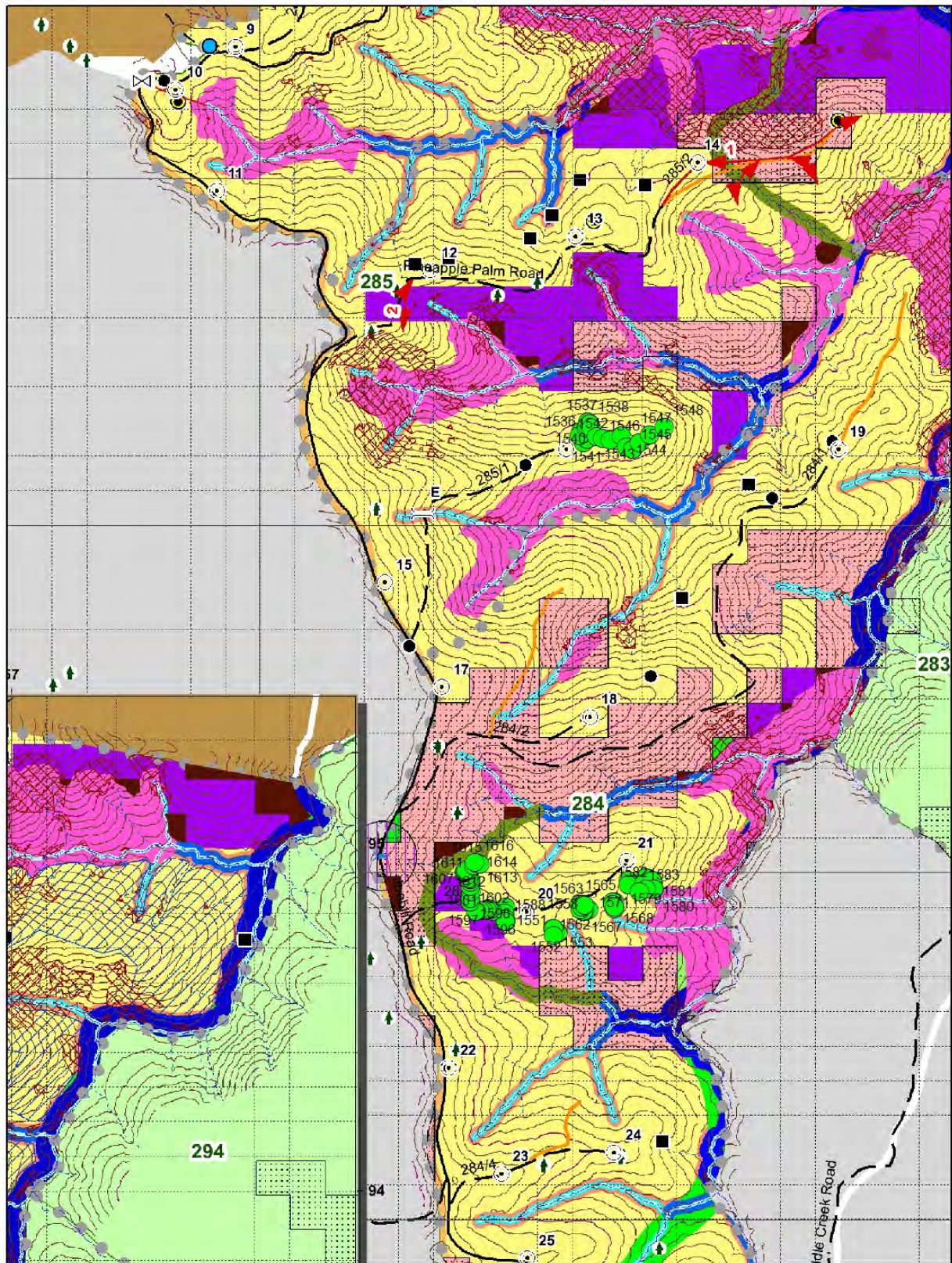
No Hastings River Mouse were detected.

CONDITIONS RELATED TO THREATENED SPECIES PLANNING – GOLDEN-TIPPED BAT			
Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
8.8.10 b Targeted fauna surveys – Golden-tipped bat <i>Kerivoula papuensis</i>	Yes	0/1	NA
Comment and Evidence			
<p>EPA found that FCNSW complied with this condition across the compartments.</p> <p>To assess this condition the EPA reviewed FCNSW planning documents including the pre-logging and pre-roading report and raw survey data sheets.</p> <p>FCNSW reports indicate that harp traps were used to survey for the Golden-tipped bat at 6 sites over two nights, as required by the licence. Harp traps were set as required within the required survey season.</p> <p>0 Golden-tipped bats were recorded in the survey.</p>			

ACTION PLAN – MARARA STATE FOREST, COMPARTMENT 284-286, 293

Condition No.	Number of non-compliances (and sample)	Action Details	Non-compliance Code	Target/Action Date
-	-	-	-	-
Total	0			

EPA Audit Locations 13 May 2015 Marara SF



Legend

● Waypoints_13-MAY-15

0 250 500 750 1,000 Meters



EPA Audit Locations-
GDA 94 MGA Zone 56

EPA Identifier	Easting	Northing
1530	455932	6691238
1531	455943	6691248
1532	455936	6691265
1533	455926	6691270
1534	455922	6691259
1535	455939	6691281
1536	455943	6691289
1537	455947	6691298
1538	455950	6691294
1539	455955	6691280
1540	455971	6691255
1541	455988	6691251
1542	456008	6691247
1543	456043	6691258
1544	456057	6691225
1545	456073	6691219
1546	456093	6691238
1547	456124	6691261
1548	456165	6691284
1549	455843	6689838
1550	455845	6689836
1551	455860	6689826
1552	455845	6689838
1553	455846	6689820
1554	455922	6689907
1555	455930	6689908
1556	455928	6689902
1557	455935	6689899
1558	455948	6689893
1559	455937	6689887
1560	455932	6689889
1561	455923	6689893
1562	455929	6689901
1563	455935	6689906
1564	456022	6689916
1565	456016	6689914
1566	456016	6689908
1567	456023	6689895
1568	456022	6689900
1569	456062	6689977
1570	456075	6689965
1571	456062	6689965
1572	456119	6689975

1573	456113	6689984
1574	456111	6689985
1575	456109	6689967
1576	456107	6689966
1577	456132	6689967
1578	456134	6689972
1579	456130	6689976
1580	456136	6689952
1581	456135	6689952
1582	456115	6689953
1583	456094	6689944
1584	455708	6689899
1585	455704	6689882
1586	455707	6689866
1587	455708	6689859
1588	455708	6689859
1589	455671	6689888
1590	455663	6689892
1591	455657	6689894
1592	455652	6689893
1593	455643	6689889
1594	455634	6689890
1595	455625	6689888
1596	455621	6689887
1597	455606	6689914
1598	455608	6689925
1599	455609	6689946
1600	455607	6689961
1601	455606	6689972
1602	455605	6689979
1603	455601	6689982
1604	455601	6689983
1605	455596	6689992
1606	455589	6689999
1607	455590	6690000
1608	455592	6690004
1609	455593	6690004
1610	455594	6690006
1611	455616	6690020
1612	455624	6690026
1613	455627	6690027
1614	455627	6690027
1615	455634	6690025
1616	455618	6690029

ATTACHMENT 2: RISK ASSESSMENT OF NON-COMPLIANCE

The significance of any non-compliances identified during the audit process are categorised. Following risk assessment of non-compliances, an escalating response relative to the seriousness of the non-compliance is determined to ensure the non-compliance is addressed by the enterprise.

The risk assessment of non-compliances involves assessment of the non-compliance against two criteria; the likelihood of environmental harm occurring and the level of environmental impact as a result of the non-compliance. After these assessments have been made, information is transferred into the risk analysis matrix below.

	Likelihood of Environmental Harm Occurring			
Level of Environmental Impact		Certain	Likely	Less Likely
	High	Code Red	Code Red	Code Orange
	Moderate	Code Red	Code Orange	Code Yellow
	Low	Code Orange	Code Yellow	Code Yellow

The assessment of the likelihood of environmental harm occurring and the level of environmental impact allows for the risk assessment of the non-compliance via a colour coding system. A red risk assessment for non-compliance denotes that the non-compliance is of considerable environmental significance and therefore must be dealt with as a matter of priority. An orange risk assessment for non-compliance is still a significant risk of harm to the environment however can be given a lower priority than a red risk assessment. A yellow risk assessment for non-compliance indicates that the non-compliance could receive a lower priority but must be addressed.

There are also a number of licence conditions that do not have a direct environmental significance, but are still important to the integrity of the regulatory system. These conditions relate to administrative, monitoring and reporting requirements. Non-compliance of these conditions is given a blue colour code.

The colour code is used as the basis for deciding on the priority of remedial action required by the licensee and the timeframe within which the non-compliance needs to be addressed. This information is presented in the action program alongside the target/action date for the noncompliance to be addressed.

While the risk assessment of non-compliances is used to prioritise actions to be taken, the EPA considers all non-compliances are important and licensees must ensure that all non-compliances are addressed as soon as possible.

ATTACHMENT 3 – AUDITEE SUBMISSION ON DRAFT AUDIT FINDINGS

Condition No. / Page No.	EPA draft finding / risk categorisation	Location – description, GPS	FCNSW submission	EPA response to FCNSW submission	EPA final finding & risk categorisation
5.6 h) Protection of retained trees – mark-up	Further observation	EPA waypoint s 1591, 1606, 1615	<p>FCNSW disagrees with the EPA’s position that retained trees must not be marked on exclusion zone boundaries. FCNSW requests the EPA’s position is reconsidered.</p> <p>On Ridge and headwater habitat and HCVOG boundaries trees may be felled into and on HCVOG boundaries machinery can also enter 5 m to safely fell trees in the net harvest area. By marking H and R trees on these boundaries, we are better able to control the protection of those trees from harvesting damage. Also, exclusion boundaries are often marked conservatively and many trees marked on the edge are actually in the mapped net harvest area. Therefore, it is legitimate for FCNSW to mark retained trees along marked boundaries, and beyond, as long as retained trees are located within net harvest area. This ensures the environmental values of the retained trees are protected while specified forest activities are undertaken in their vicinity.</p>	<p>The EPA reviewed FCNSW’s submission on mark-up of retained trees.</p> <p>Retained trees must be marked within the net logging area. The ‘net logging area’ (as defined in the TSL) does not include R&HW exclusion zones or HCVOG forest. The mapped exclusion zone boundary is part of this exclusion zone. In this case the mark-up represented the mapped boundary and therefore fell into the exclusion zone.</p>	Further observation is not changed.

5.6e) Compartment mark-up surveys	Non- compliant / Code Yellow	EPA waypoint identifier 1533 (455926 / 6691270)	<p>FCNSW believes the EPA's Draft Audit Report lacks appropriate evidence for a code yellow non-compliance finding. FCNSW requests that the final audit report records this condition as compliant.</p> <p>The Threatened Species Licence states 'an adequately trained person must conduct a thorough search for, record and appropriately mark...'. It is an unrealistic expectation that every individual threatened or protected species feature is identified during compartment mark-up.</p> <p>The licence requirement is for a thorough search and FCNSW contends a thorough search has been undertaken. This effort is evident from the marking of retained trees across the net harvest area (See Figure 1). It is also possible that the cones were chewed in the 3-4 weeks between the mark-up, which occurred between 8th and 23rd of April 2015, and EPA audit on the 13th May 2015.</p> <p>As FCNSW already undertakes compartment mark-up searches and protects threatened species as required by the Threatened Species Licence an action plan is not required. up searches and protects threatened species as required by the Threatened Species Licence an action plan is not required.</p>	<p>The EPA reviewed FCNSW's submission on compartment mark-up surveys.</p> <p>The EPA determines audit findings based on the <i>balance of probabilities</i>. Where a threatened species feature is not protected this provides a level of evidence, based on the balance of probabilities, that a thorough search was not undertaken.</p> <p>The EPA can not determine whether the cones were chewed prior to compartment mark-up surveys and therefore the compliance finding of this condition has been changed to not determined.</p>	Not determined
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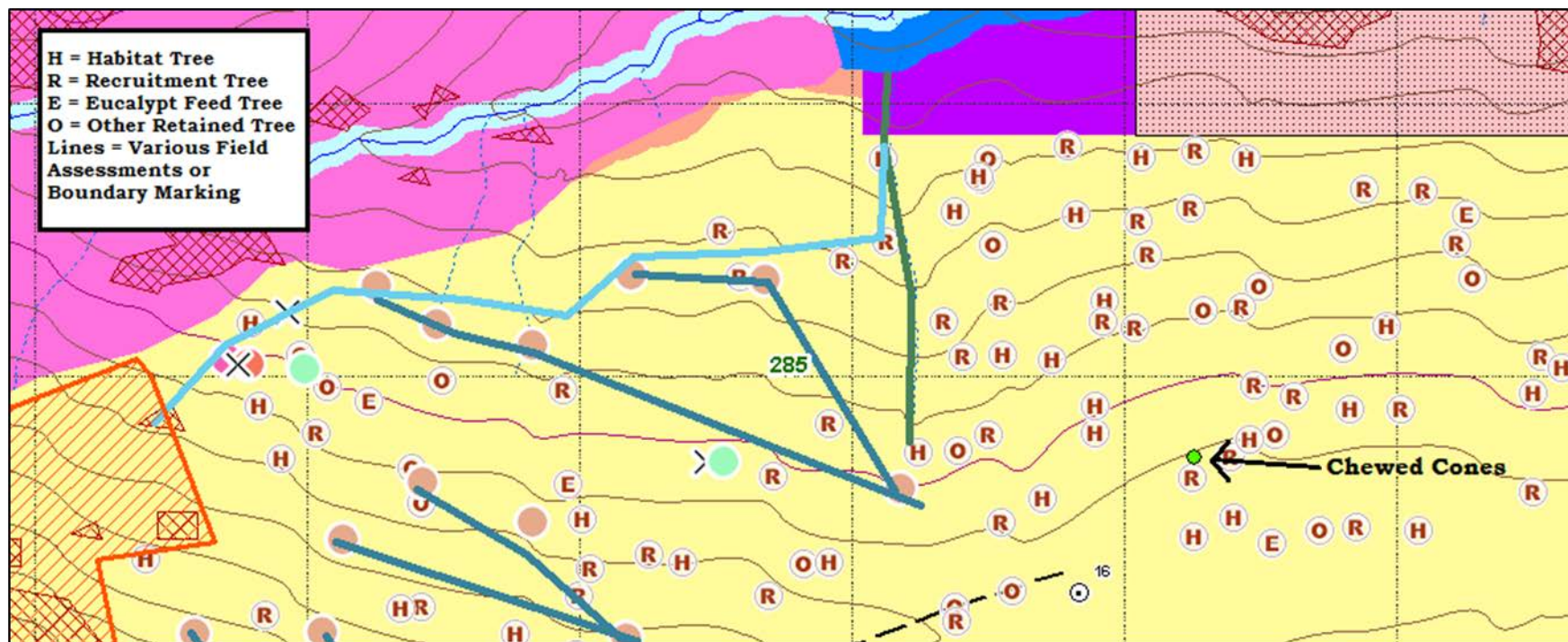


Figure 1. Map of a section of compartment 285 Marara State Forest illustrating the area covered by Forest Technicians during compartment mark-up surveys. The location of the chewed cones identified by the EPA is shown. Not all marked boundaries have been recorded on the map.