

EPA AUDIT REPORT – ELLIS STATE FOREST, COMPARTMENTS 60, 61, 63, 64, 202

Auditee:	FORESTRY CORPORATION OF NSW (FCNSW)
Audited State Forest & Cpts:	ELLIS STATE FOREST, COMPARTMENTS 60, 61, 63, 64, 202
Region:	Upper North-east Integrated Forestry Operations Approval (IFOA)
Date/Audit timing:	25 March 2015. Audit debrief with FCNSW staff held on 15 April 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 • Rainforest • Rocky outcrop • Koala protection measures • Riparian protection areas • Water pollution • Threatened species <p>Physical scope: This audit was limited to the physical boundaries of compartments 60, 61, 63, 64, 202.</p> <p>Temporal scope: The audit period adopted for assessment of compliance with operational conditions was on the days of the audit inspections (25 March 2015).</p>
Audit criteria:	<p>5.6 (d)(e)(h) Hollow bearing and recruitment tree retention, selection and protection</p> <p>5.4 Rainforest protection</p> <p>5.11 Rocky Outcrops and Cliffs protection</p> <p>5.1 (f) Marking of exclusion and buffer zones</p> <p>5.2.2 Koala mark-up searches</p> <p>6.14 (a) Koala high-use exclusion zones and intermediate use</p> <p>Schedule 5 cl 37 5-30 drainage</p> <p>S120 POEO Act Water pollution</p>

	<p>6.13 Hasting River Mouse protection</p> <p>6.26 Threatened and protected flora – protection of 90% of individuals</p>
Summary of Operations	<p>Operation commencement date: 27 November 2013</p> <p>Stand age: Regrowth Zone</p> <p>Silvicultural practice:</p> <p><u>Compartments 63 & 64</u></p> <ul style="list-style-type: none"> • Even aged early mature Bluegum and Blackbutt stands (30% NHA) – Thinning operation, expected removal of basal area 55% • Mixed age Blackbutt and Mixed aged mixed species (70% NHA) – Single tree selection, expected removal of basal area 35% <p><u>Compartments 60, 61, 202</u></p> <ul style="list-style-type: none"> • Blackbutt regrowth stands and even aged Bluegum stands (35% NHA) - Single tree selection, expected removal of basal area 40% • Mixed age Blackbutt and Mixed aged mixed species (65% NHA) – Single tree selection, expected removal of basal area 35%

1. Audit Findings – Overview

The EPA identified 4 non-compliances and 55 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
	Rocky Outcrop Protection	1	0	0	0
	Rocky outcrop mark-up	1	0	0	0
	Hastings River Mouse protection	3	0	0	1
	Hastings River Mouse mark-up	1	1	0	0
Riparian protection zones	Protection	4	0	0	0
Koala	Identification/search	1	0	1	0
	Koala protection	1	0	1	0
	Koala High Use mark-up	1	0	0	0
Hollow bearing and recruitment trees	H Retention	1	0	0	0
	H Selection	0	0	1	0
	R Retention	1	0	0	0
	R Selection	0	0	1	0
	H&R Protection	33	0	0	0
	H&R Mark-up	1	0	0	0
Water pollution	5-30 drainage	2	0	0	0
	S120 POEO	2	0	0	0
Further observations	Unmapped drainage line protection	0	3	0	0
	TOTAL	55	4	4	1

2. Audit Recommendations

Condition No.	Number of non-compliances (and sample)	Action Details	Non-compliance Code*	Target/Action Date
EPL Sch 4 Cond 17	1/1	<u>Drainage feature protection</u> An action plan must be developed and implemented to ensure that drainage feature protection measures are being correctly identified and implemented in the field.	Yellow	September 2015
EPL Sch 4 Cond 20	1/1		Yellow	September 2015
EPL Sch 4 Cond 20C	1/1		Yellow	September 2015
TSL 5.1F	1/5	<u>Hasting River-mouse mark-up</u> An action plan must be developed and implemented to ensure exclusion zones are correctly marked in the field.	Yellow	September 2015
Total	4			

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

ATTACHMENT 1 - EPA AUDIT FINDINGS TABLE – ELLIS STATE FOREST COMPARTMENTS 60 61 63 64 202

Assessment of Compliance with Upper North East Integrated Forestry Operations Approval –

Threatened Species Licence and Environment Protection Licence

CONDITIONS RELATED TO HOLLOW BEARING TREES (REGROWTH ZONE) – RETENTION				
Condition No. and Detail	Compliant? Yes/No/Not determined/N ot applicable	Number of non- compliance and (sample size)	Why it is important & Risk Ranking Code Explanation	Action required by licensee
5.6(d): Within the 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 of hollow-bearing trees is not available all hollow-bearing trees within the net logging area must be retained.	Yes	0/1 (2.3ha assessed)	NA	NA
Comment and Evidence				
<p>The EPA has determined that FCNSW complied with this condition.</p> <p>EPA officers assessed a total of 2.3 hectares of net harvest area within compartment 60. This condition was assessed across two transects:</p> <p>Transect 1: located west of log dump 12, within harvested area. Total of 1.6 hectares assessed. Ten (10) hollow bearing trees were marked and retained.</p> <p>Transect 2: located south of log dump 22, within harvested area. Total of 0.7 hectares assessed. Six (6) hollow bearing trees were marked and retained.</p> <p>The EPA determined that on average 7 hollow-bearing trees were retained per hectare within the area assessed and therefore considers this condition compliant across the net logging area.</p>				



Hollow bearing tree retained within the assessed area

Marked and retained H tree within the assessed area

CONDITIONS RELATED TO HOLLOW BEARING TREES (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 d iii. Hollow-bearing trees 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	0/16 trees	NA	NA
Comment and Evidence				
<p>The EPA determined FCNSW was compliant with this condition.</p> <p>EPA assessment recorded marked and retained hollow bearing trees across the 2.3 hectare assessment area. All retained hollow bearing trees met the definition of a hollow-bearing tree, were selected with good crown development and had minimal butt damage.</p>				

CONDITIONS RELATED TO RECRUITMENT TREES (REGROWTH ZONE) – SELECTION & 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
<p>5.6e (retention)</p> <p>Within the Regrowth Zone, for each hollow-bearing tree retained in (d) above, a recruitment tree must be retained. Recruitment trees 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"> i. belong to a cohort of trees with the largest dbhob, ii. located such that they result in retained trees being evenly scattered throughout the net logging area iii. good crown development, iv. minimal butt damage, v. represent the range of hollow-bearing species that occur in the area. 	yes	0/1 (2.3ha assessed)	NA	NA
Comment and Evidence – R tree Retention and Selection				
<p>The EPA found FCNSW met the retention rates and complied with this condition in the assessed area.</p> <p>EPA officers assessed a total of 2.3 hectares of net harvest area within compartment 60. The EPA recorded an average of 7 hollow-bearing trees per ha and an average of 7 recruitment trees per hectare. Both H and R trees exceeded the number required (5 H and R trees per ha).</p> <p>This condition was assessed across two transects:</p> <p>Transect 1: located west of log dump 12, within harvested area. Total of 1.6 hectares assessed. Ten (10) hollow bearing and eleven (11) recruitment trees were marked and retained.</p> <p>Transect 2: located south of log dump 22, within harvested area. Total of 0.7 hectares assessed. Six (6) hollow bearing and six (6) recruitment trees were marked and retained.</p>				

CONDITIONS RELATED TO RECRUITMENT TREES (REGROWTH ZONE) – SELECTION & 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
<p>5.6e (selection)</p> <p>Within the Regrowth Zone, for each hollow-bearing tree retained in (d) above, a recruitment tree must be retained. Recruitment trees 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"> i. belong to a cohort of trees with the largest dbhob, ii. located such that they result in retained trees being evenly scattered throughout the net logging area iii. good crown development, iv. minimal butt damage, v. represent the range of hollow-bearing species that occur in the area. 	Not determined	NA	NA	NA

Comment and Evidence – R tree Retention and Selection

The EPA did not determine whether FCNSW selection of R trees was compliant with this condition.

EPA assessment recorded marked and retained recruitment trees across the 2.3 hectare assessment area. The EPA assessment did not assess whether recruitment trees that were marked and retained belonged to a cohort of tree with the largest dbhob as stump sizes were not recorded. In this situation compliance with this condition was not determined in the assessment area.



Recruitment tree retained within the assessed area
Marked and retained R tree within the assessed area

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
5.6h) Protection of retained trees 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.	Yes	0/33 trees	NA	NA
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.	Yes	0/33 trees	NA	NA
Comment and Evidence				
EPA officers found FCNSW complied with this condition in the assessed area.				
EPA Officers assessed a total of 33 H and R trees within the net harvest area. The total area assessed was 2.3 hectares. The EPA found that no trees had been damaged during the course of harvesting, with no operator crown damage identified. No trees were identified with debris greater than one metre at the base.				

CONDITIONS RELATED TO HOLLOW BEARING & RECRUITMENT TREES (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
<p>5.6 h) Protection of retained trees</p> <p>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.</p>	Yes	0/1	NA	NA

Comment and Evidence

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

EPA assessed areas ahead of harvest operations (pre harvest) and areas behind harvest operations (post harvest).

EPA Officers assessed a total of 47 H and R trees within the net harvest area in areas of pre and post harvest. The EPA observed all 47 trees marked with a H or R. The EPA noted that the paint of one H tree in an area ahead of operations had faded substantially and therefore may not be seen by harvesting crew.



Hollow bearing tree selected within the assessed area

Faded paint of marked H tree ahead of harvesting operations.

Recruitment tree marked within the assessed area



CONDITIONS RELATED TO KOALA PROTECTION – KOALA MARK UP				
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</p> <p>0/1</p>	<p>NA</p>	<p>NA</p>
Comment and Evidence				
<p>EPA officers found FCNSW complied with this condition in the assessed area, but was not able to determine whether searches were done thoroughly.</p> <p>EPA officers assessed compartment mark up searches in a two hectare area ahead of the active operations west of log dump 12. EPA officers observed that hollow bearing and recruitment trees, and a rainforest exclusion zone 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 did not determine compliance with condition 5.2.2 (b) in the assessed area.</p> <p>To determine if the assessment area was searched thoroughly EPA officers inspected a two hectare area up to 300 m ahead of operations. The assessment included inspecting the base of primary browse feed trees for evidence of thorough searching such as the disturbance of leaf litter and debris.</p> <p>Within the two hectare area of operation up to 300 metres in front of active harvesting operations EPA officers inspected 6 primary browse trees for disturbance and scats. No koala scats were found. EPA officers observed that leaf litter and debris had potentially been displaced under one unmarked tallowwood, however were not able to determine whether any other individual trees had been inspected thoroughly as per the TSL requirements.</p>				

Before



Before: Tallowwood with no disturbance to leaf litter and no evidence of pre harvest search for koala scats before EPA commenced their search

Koala compartment mark-up searches

After



After: EPA search found no koala scats under leaf debris



Tallowwood with disturbance of leaf litter and debris indicating a search of a primary browse tree for scats by FCNSW.

CONDITIONS RELATED TO KOALA PROTECTION – FEED TREE RETENTION AND KOALA HIGH USE				
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>6.14a)</p> <p>The following must apply wherever Koala mark-up searches have identified Koala high use areas or Koala intermediate use areas:</p> <p>i. Specified forestry activities are prohibited within all Koala high use areas. A 20 metres wide exclusion zone must be implemented around the boundary of Koala high use areas.</p> <p>ii. In Koala intermediate use areas, per two hectares of net logging area ten primary browse trees must be retained where available. These trees must be marked for retention. Within intermediate use compartments, Australian Group Selection silvicultural techniques are prohibited in preferred forest types.</p>	<p>Yes</p> <p>Not applicable</p>	<p>0/1</p> <p>(120m boundary)</p>	<p>NA</p>	<p>NA</p>
Comment and Evidence				
<p><u>6.14ai)</u></p> <p>EPA officers determined that FCNSW was compliant with this condition in the assessed area.</p> <p>EPA officers inspected a Koala high use exclusion zone west of log dump 19 on Blackbutt Rd, compartment 63. Inspection commenced at the road and traversed the area heading directly north for a distance of 120m. Within this area EPA officers did not observed specified forestry activities in the exclusion zone.</p>				



Koala High-Use Area Protected

Photo showing no incursions into koala high-use exclusion zone with mark-up at boundary.

6.14a(ii)

EPA officers did not assess compliance with this condition during the audit. The areas assessed for tree retention within the audit did not fall into the Koala intermediate use area of the operation and therefore compliance with this condition was not applicable.

CONDITIONS RELATED TO KOALA HIGH USE EXCLUSION 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
<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 (120m boundary)	NA	NA

Comment and Evidence

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

EPA officers inspected a Koala high use exclusion zone west of log dump 19 on Blackbutt Rd, compartment 63. Inspection commenced at the road and traversed the area heading directly north for a distance of 120m. Within this area EPA officers observed mark-up of the exclusion zone at the mapped boundary.

Mark-up was also observed through the exclusion zone along Blackbutt road.



Mark-up of koala high-use exclusion zone

CONDITIONS RELATED TO RIPARIAN HABITAT PROTECTION 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
5.7 Operations within protection zones (hard) d) Specified forestry activities, except road and snig track construction in accordance with conditions 5.7 (r to u) and road re-opening, are prohibited within the protection zone (hard).	Yes	0/2	NA	NA
Operations within protection zones (soft) j) Specified forestry activities, except road and snig track construction in accordance with conditions 5.7 (r to u) and road re-opening, are prohibited within the protection zone (soft).	Yes	0/2 (150m boundary)	NA	NA
Comment and Evidence EPA found FCNSW complied with this condition in the two protection zones assessed. The EPA assessed two (2) riparian protection zones. 1. The EPA assessed a 90m section of a 3 rd order stream boundary south of log dump 22, compartment 60. The EPA did not observe any incursions into the protection zone. 2. The EPA assessed a 60m section of a 1 st order stream boundary north-west of log dump 19, compartment 63. The EPA did not observe any incursions into the protection zone.				

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)	Action required by licensee
5.4 - Rainforest 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.	Yes	0/1 (75m boundary)	NA
Comment and Evidence			
EPA found that FCNSW complied with this condition in the assessed area. The EPA assessed one 75m section of rainforest exclusion zone boundary, south of log dump 22, compartment 60. No incursions were observed in the rainforest exclusion zone.			

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)	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 (75m boundary)	NA
Comment and Evidence			
EPA officers found FCNSW complied with this condition in the assessed area. The EPA assessed one 75m section of rainforest exclusion zone boundary, south of log dump 22, compartment 60. Rainforest exclusion zone boundaries field marking was observed and recorded in the area assessed.			



Compliant rainforest exclusion zone
marked up and protected

CONDITIONS RELATED TO ROCKY OUTCROPS AND EXCLSUION ZONE – PROTECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
5.11 Rocky Outcrops and Cliffs a) Specified forestry activities are prohibited within areas of rocky outcrops and cliffs. b) In addition, exclusion zones of at least 20 metres wide must be implemented around all rocky outcrops more than 0.1 hectare (approx. 30 metres x 30 metres), and all cliffs.	Yes	0/1 (1 rocky outcrop)	NA

Comment and Evidence

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

EPA officers assessed one location of Rock Outcrop north-west of Log Dump 22, compartment 60. The rocky outcrop was mostly contained in a Hastings River Mouse (HRM) exclusion zone. The EPA assessed the small boundary of rocky outcrop that occurred outside the HRM exclusion zone. The EPA observed no incursions into the rocky outcrop exclusion zone assessed.



Rocky outcrop feature protected

Feature marked and protected from current forestry operation. Note natural debris is foreground.

CONDITIONS RELATED TO ROCKY OUTCROP EXCLUSION ZONE – MARKING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
<p>5.1 F</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 (1 rocky outcrop)	NA
Comment and Evidence			
<p>EPA found FCNSW complied with this condition in the assessed area.</p> <p>EPA officers assessed one location of Rock Outcrop north-west of Log Dump 22, compartment 60. The rocky outcrop was mostly contained in a Hastings River Mouse (HRM) exclusion zone. The EPA assessed the small boundary of rocky outcrop that occurred outside the HRM exclusion zone. The EPA observed the rocky outcrop exclusion zone was marked in the area assessed.</p>			



Mark-up of rocky outcrop exclusion zone.

CONDITIONS RELATED TO HASTINGS RIVER MOUSE EXCLUSION ZONE – PROTECTION

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
5.1ai) All specified forestry activities are prohibited in exclusion zones.	Not applicable (1/2)	0/2	NA
6.13 b) The felling of trees across the boundary of a Hastings River Mouse exclusion zone is prohibited except where no more than six trees containing timber logs are felled across the boundary in any 200m length of the boundary of Hastings River Mouse habitat or exclusion zone, whatever 200m length of boundary is considered.	Yes	0/2 (350m boundary)	NA
Comment and Evidence			
The EPA assessed two (2) Hastings River Mouse (HRM) exclusion zones. One exclusion zone was found to be compliant with this condition, the second exclusion zone was managed by a process outside of the IFOA and therefore compliance was not applicable.			

HRM exclusion zone 1

The EPA assessed a HRM exclusion zone south of log dump 22, compartment 60. A boundary of 175m was assessed and no incursions were observed.

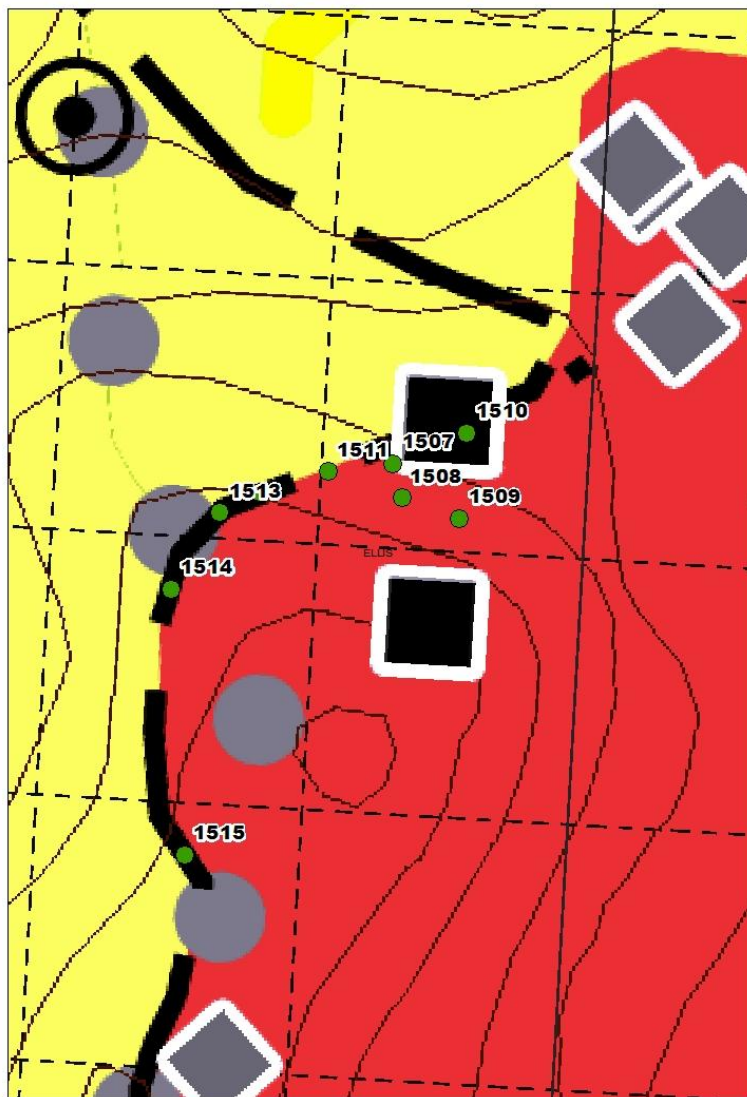
HRM exclusion zone 2

The EPA assessed a HRM exclusion zone north of log dump 16, compartment 202, along the east side of Benjibal Road for 350 metres. Compliance at this location was not applicable. A review of documents supplied to the NSW EPA by FCNSW as part of the audit process has highlighted that within the exclusion zone a stag, which was classed as 'dangerous' by Work Safety NSW, was cut. The removal of a dangerous tree is not classified as a 'specified forestry activity' under the IFOA and therefore a determination of compliance with this condition, in this circumstance cannot be applied.

The EPA was informed that Work Safety NSW deemed the large stag within the HRM exclusion zone as 'dangerous' and a directive given to remove the tree. It was recommended that the tree be burnt down for safety reasons due to another tree being hung-up in its canopy. A hazard reduction track was cleared within the HRM exclusion zone around the tree to prevent the fire spreading across the landscape. However, prior to burning the hung-up tree was pushed out and after another risk assessment it was decided to cut the dangerous tree instead of burning. The tree was cut and left in place within the exclusion zone.

The EPA documented the extent of works within the HRM exclusion zone as part of the audit process. The EPA noted the hazard reduction track (waypoints 1508 – 1510) caused over 300 square metres of disturbance and removal of understorey required as habitat by the HRM. The EPA is concerned that this track was cleared without a thorough risk assessment and therefore disturbed important habitat unnecessarily. The EPA understands the importance of the removal of hazards in the forest for the safety of all those on site, however, the EPA recommends that the removal of hazards be undertaken in a way that reduces the amount of disturbance within any exclusion zone.

The EPA notes no additional incursions were observed outside of the removal of the dangerous tree process in the area assessed.



Hastings River Mouse exclusion zone

Waypoint 1507 represents the stump of the harvested dangerous tree

Waypoints 1508- 1510 represent the cleared track around the dangerous tree.



Photo 1

Hastings River Mouse exclusion zone

Photo 1: cut dangerous tree within exclusion zone

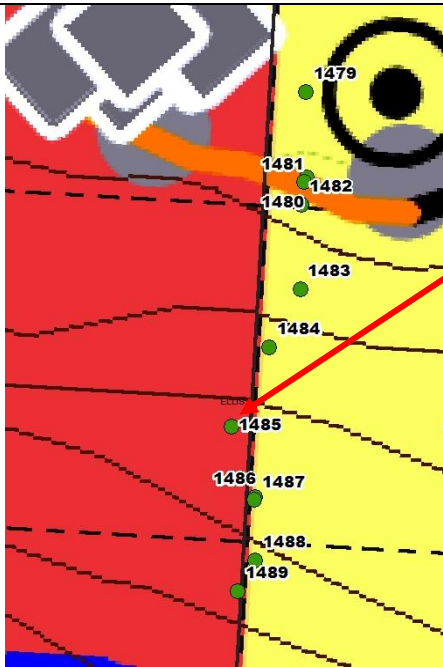
Photo 2: cleared track around dangerous tree within exclusion zone



Photo 2

CONDITIONS RELATED TO HASTINGS RIVER MOUSE EXCLUSION ZONE – MARKING

Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
<p>5.1 F</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>	No	1/2 (350m boundary)	Develop and implement an action plan to ensure exclusions zones are marked and protected as required by the Threatened species licence.
Comment and Evidence			
<p>The EPA assessed two (2) Hastings River Mouse (HRM) exclusion zones for mark-up. The EPA found FCNSW was non-compliant with this condition for one HRM exclusion zone.</p> <p><u>HRM exclusion zone 1</u> - The EPA assessed a HRM exclusion zone south of log dump 22, compartment 60. A boundary of 175m was assessed for mark-up. The EPA observed one tree marked 8 metres within (wp 1485) the exclusion zone boundary. The EPA notes that no harvesting was observed within the exclusion zone and up to a visual approximation of 20 metres from the marked, non-compliant, tree. The EPA does not consider this non-compliance can be explained by GPS accuracy as all other mark-up of this exclusion zone fell on the boundary as required and this mark-up was not in line with other marked trees in the when the boundary was walked in the field.</p>			



Hastings River Mouse exclusion zone
Waypoint 1485 represents the marked tree within the exclusion zone



HRM exclusion zone 2

The EPA assessed a HRM exclusion zone north of log dump 16, compartment 202, along the east side of Benjibal Road for 350 metres. The EPA observed mark-up as required in the area assessed.



Hastings River Mouse exclusion zone
Mark-up of HRM exclusion zone

Why is it important

The marking of hastings river mouse exclusion zone boundaries in the correct location is important to prevent incursions of specified forestry activities. Exclusion zones of the hasting river mouse aim to protect important habitat for the species in accordance with the TSL.

CONDITIONS RELATED TO ROAD CROSSINGS AND DRAINAGE FEATURES – 5 & 30 DRAINAGE

Condition No. and Detail					Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
Schedule 5 – Environment Protection Licence I. ROAD CROSSINGS WITHIN 30 METRES OF DRAINAGE FEATURES 37. Roads must be drained using a crossbank, relief pipe, spoon drain or mitre drain between 5 metres and 30 metres from a watercourse, drainage line, wetland or swamp crossing. This distance must be measured from the top of the bank of the incised channel, or where there is no defined bank, from the edge of the channel.					Yes	0/2 (2 crossings)	NA
Comment and Evidence							
EPA found FCNSW complied with this condition in the assessed area.							
EPA officers inspected road drainage crossings A and B. During the inspection EPA officers identified that:							
Crossing	EPA Waypoints	Distance from drainage feature & Structure Type (Southern Approach)	Distance from drainage feature & Structure Type (Northern Approach)	Effective/ Capacity Exceeded?	5/30 drainage Compliant?	Further comments regarding drainage	Photo
Crossing A	1518	26m	20m	Effective	Yes	n/a	526-528
Crossing B	1527	18m	24m	Effective	Yes	n/a	541-543

CONDITIONS RELATED TO PROTECTION OF THE ENVIRONMENT OPERATIONS ACT – SECTION 120(1)			
Condition No. and Detail	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance and (sample size)	Action required by licensee
Protection of the Environment Operations Act 1997 120 Prohibition of pollution of water (1) A person who pollutes any waters is guilty of an offence	Yes	0/2 (2 crossings)	NA
Comment and Evidence			
<p>EPA found FCNSW complied with this condition in the assessed areas.</p> <p>EPA officers inspected road drainage crossings A & B for evidence of the pollution of waters. The details of each road drainage crossing are contained above. During the inspection EPA officers identified that neither crossing was polluting waters.</p>			

CONDITIONS RELATED TO THREATENED AND PROTECTED FLORA				
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
6.26 Threatened and Protected Flora: protection of 90% of individuals - <i>Olearia floctoniae</i> a) A minimum of 90% of individuals must be protected from specified forestry activities. During harvesting operations, the potential for damage to these plants must be minimised by utilising techniques of directional felling.	Not-determined	NA	NA	NA
Comment and Evidence				
<p>The EPA did not determine compliance with this condition in protecting 90% of individuals of <i>Olearia floctoniae</i> within compartment 64.</p> <p>The EPA observed an area of 100 metres along 64/1 road in the South-east corner of compartment 64. This area had mapped records of <i>Olearia floctoniae</i> and the area was mapped as “<i>harvesting deferred pending further assessment</i>”. In the area assessed the EPA observed that no harvesting had occurred in this area and the road had not been opened up to indicate harvesting was planned. However, if this area is opened up to harvesting additional assessment is required to determine whether 90% of individuals within the compartment are protected.</p>				

FURTHER OBSERVATIONS TABLE


These are matters that were recorded during the field investigation but relate to conditions outside the audit scope

Relevant Condition	Number of non-compliances and sample	Risk Code	Details of matter	Recommendation
<p><u>EPL Schedule 4</u> Condition 17 -Trees located in a filter strip must not be felled, except for the purpose of constructing a road crossing, extraction track crossing or snig track crossing.</p> <p>Condition 20 - Machinery must not enter a filter strip, except for the purpose of constructing or using a road crossing, extraction track crossing or snig track crossing.</p> <p>Condition 20C - Trees in a protection zone must not be felled, except for the purpose of constructing a road crossing, extraction track crossing or snig track crossing.</p>	<p>1/1</p> <p>1/1</p> <p>1/1</p>	<p>Yellow</p> <p>Yellow</p> <p>Yellow</p>	<p>This harvesting operation was licenced by the EPL. FCNSW harvest plan indicated that no harvesting within unmapped drainage lines is permitted. The EPA observed an unmapped drainage line running east-west at crossing A. The unmapped drainage line was marked and protected east of crossing A and unmarked and not protected west of crossing A.</p> <p>The EPL requires that filter strips, protection zones and operational zones be retained along all drainage lines. For unmapped drainage lines, a 5 metre filter strip and 5 metre protection zone is required. A "drainage line" is defined by the EPL as a channel down which surface water naturally concentrates and flows. Drainage lines exhibit one or a combination of the following features which distinguish them from drainage depressions: a) evidence of active erosion or deposition - e.g., gravel, pebble, rock, sand bed, scour hole, nick points; or b) an incised channel of more than 30 centimetres depth with defined bed and banks.</p> <p>The EPA determined that approximately 15 metres of the drainage feature met the definition of a drainage line and therefore required protection in this area. Within this area (from crossing A WP 1518 to WP 1521) EPA measured an incised channel of 35cm depth with a width of 1 metre in this area.</p> <p>The EPA observed that within the 5 metre filter strip two trees were cut. An additional two tree was cut within the 5 metre protection zone.</p> <p>Evidence of machinery was observed in the filter strip and harvesting debris. EPA officers showed the FCNSW contractor coordinator the site in the field. The Coordinator did not offer comment on the marking up of the field technician team who had carried out the compartment marking up.</p> <p>See photos below.</p> <p><u>Why is it important?</u> The protection of drainage features is important for a number of environmental reasons. These include:</p> <ul style="list-style-type: none"> • reducing the potential for water pollution; • protection of habitat which may be used as riparian corridors for all species and protects the terrestrial ecosystem that supports the aquatic environment. 	<p>An action plan must be developed and implemented to ensure that drainage feature protection measures are being correctly identified and implemented in the field.</p>



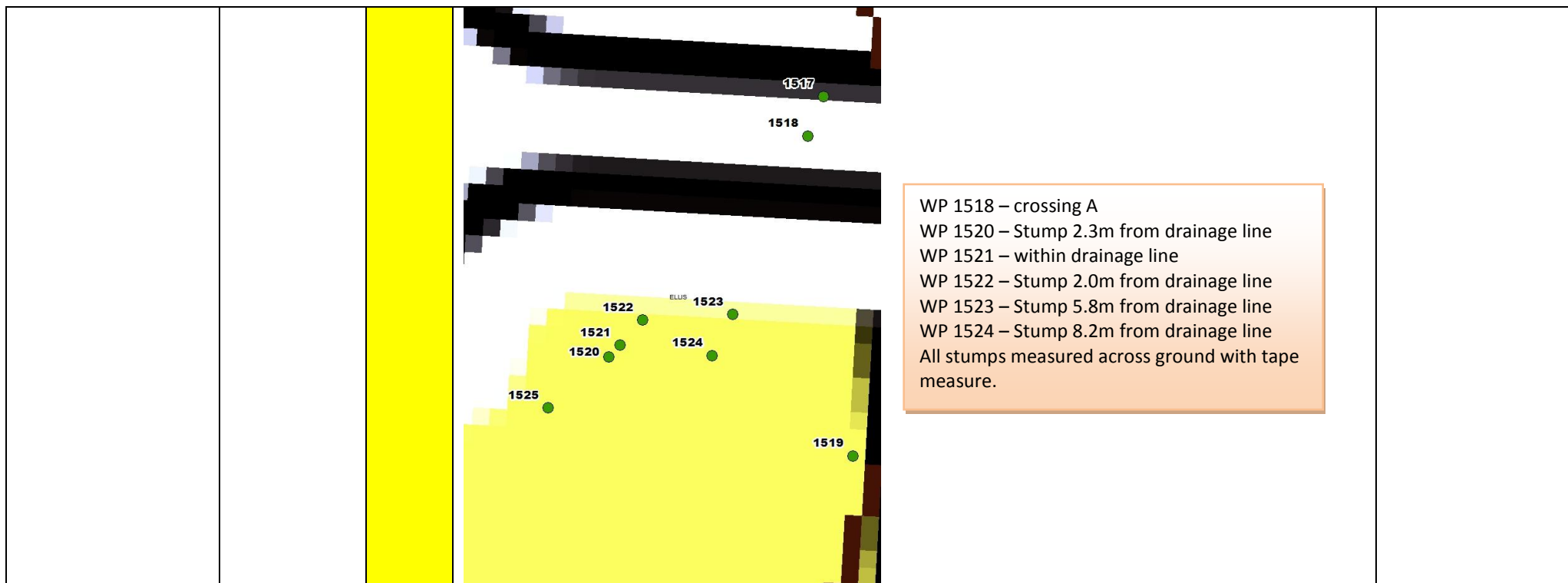
Cross indicates location of stump within filter strip

Arrow indicates incised channel running from crossing A.

			<div data-bbox="689 113 1283 908"></div> <div data-bbox="1256 129 1742 233"><p>Arrow indicates incised channel running from crossing A.</p></div> <div data-bbox="958 927 1442 999"><p>Cross indicates stump within filter strip</p></div>	
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Drainage line at WP 1521



ACTION PLAN – ELLIS STATE FOREST - COMPARTMENTS 60 61 63 64 202

Condition No.	Number of non-compliances (and sample)	Action Details	Non-compliance Code*	Target/Action Date
EPL Sch 4 Cond 17	1/1	<u>Drainage feature protection</u> An action plan must be developed and implemented to ensure that drainage feature protection measures are being correctly identified and implemented in the field.	Yellow	September 2015
EPL Sch 4 Cond 20	1/1		Yellow	September 2015
EPL Sch 4 Cond 20C	1/1		Yellow	September 2015
TSL 5.1F	1/5	<u>Hasting River-mouse mark-up</u> An action plan must be developed and implemented to ensure exclusion zones are correctly marked in the field.	Yellow	September 2015
Total	4			

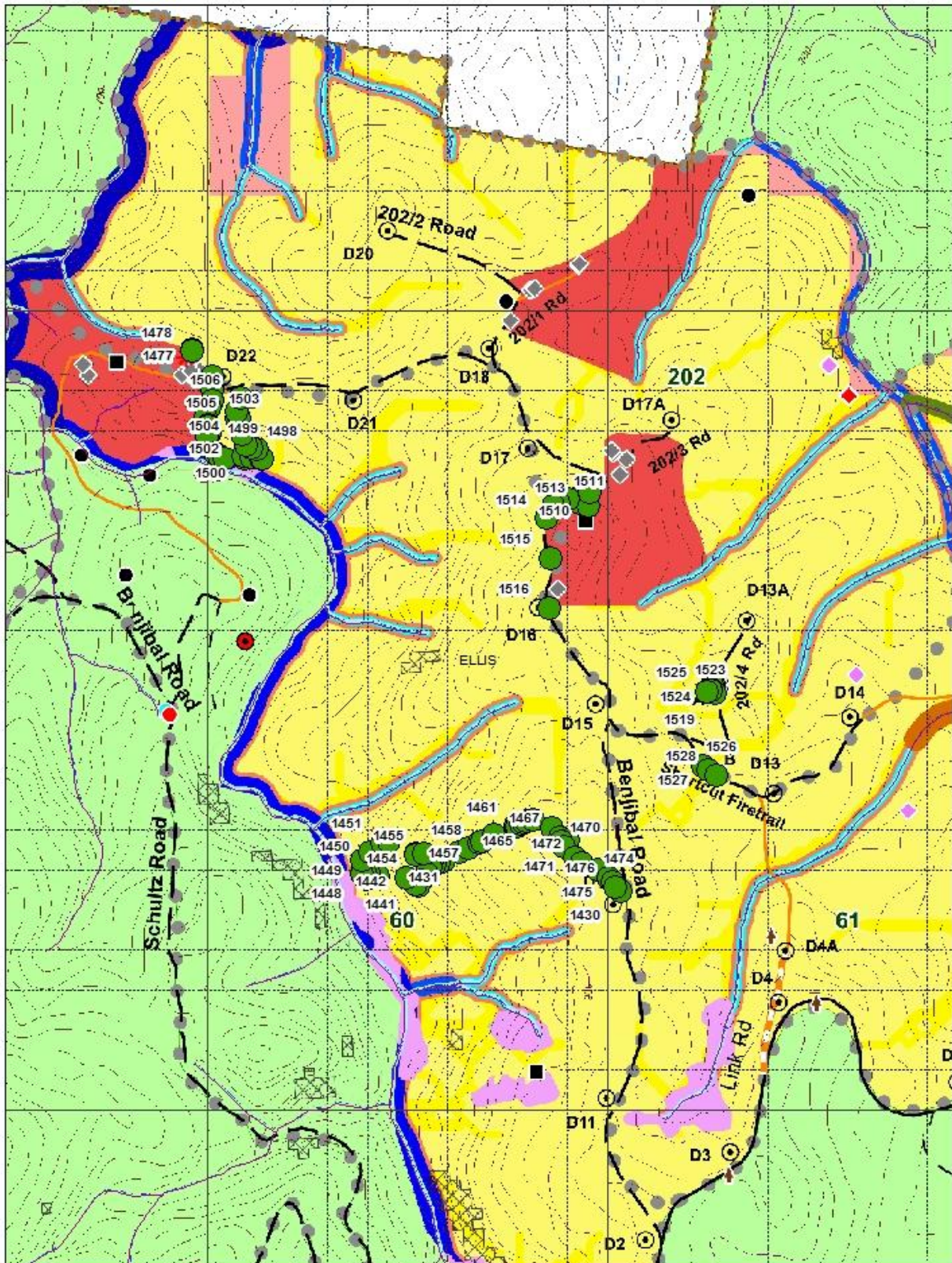
Ellis SF EPA Audit Locations

EPA Identifier	Easting	Northing	Description
<i>Olearia floctoniae</i>			
304	457308	6666162	On 64/1 road
Koala high use EZ			
305	460513	6667554	KHU mark-up
306	460516	6667577	KHU mark-up
307	460520	6667590	KHU mark-up
308	460516	6667641	No visible marking of EZ between 307 – 308
309	460534	6667651	Mark-up
310	460538	6667660	Snig track
Stream protection			
311	460531	6667672	Stream protection
312	460503	6667692	Stream protection
313	460534	6667627	Stream protection
314	460502	6667540	KHU mark-up on road
315	460456	6667454	KHU mark-up on road
316	460436	6667409	KHU mark-up on road
317	460328	6667296	No mark-up
300m ahead of forestry operations			
1431	456634	6667649	H tree markup
1432	456597	6667628	tallowwood, not marked, no evidence of scat search, no scats observed
1433	456581	6667620	H tree markup
1434	456570	6667618	H & R tree markup
1435	456566	6667625	tallowwood, not marked, no evidence of scat search, no scats observed
1436	456560	6667613	End of skid trail
1437	456560	6667610	H tree markup
1438	456552	6667594	tallowwood, not marked, no evidence of scat search, no scats observed
1439	456539	6667575	H tree markup (faded), tallowwood with marked ring, no evidence of scat search, no scats observed
1440	456530	6667564	R tree markup
1441	456524	6667567	H tree markup
1442	456502	6667585	Tallowwood, ring tree marked
1443	456431	6667586	tallowwood, not marked, no evidence of scat search, no scats observed
1444	456398	6667587	tallowwood, not marked, no evidence of scat search, no scats observed
1445	456406	6667596	tallowwood, not marked, no evidence of scat search, no scats observed
1446	456399	6667582	R tree markup
1447	456400	6667592	tallowwood, not marked, possible evidence of scat search, no scats observed
1448	456390	6667594	Marked exclusion zone – 4 bar
1449	456389	6667628	H-tree marked
1450	456410	6667648	H-tree marked
1451	456440	6667672	Mark-up ring tree
1452	456455	6667673	R- tree marked
1453	456525	6667646	R- tree marked
1454	456526	6667640	H-tree marked
1455	456546	6667643	tallowwood, not marked, no evidence of scat search, no scats observed
1456	456657	6667659	H-tree marked
H & R transect (within operational area)			
1457	456683	6667670	2 x H tree marked
1458	456688	6667674	H tree marked (20m from waypoint)
1459	456720	6667691	R tree marked
1460	456774	6667714	R tree marked
1461	456776	6667713	H tree marked
1462	456787	6667720	R tree marked
1463	456794	6667721	R tree marked
1464	456800	6667724	R tree marked
1465	456818	6667729	H tree marked

1466	456866	6667708	H tree marked
1467	456885	6667685	H tree marked
1468	456907	6667679	R tree marked
1469	456887	6667673	R tree marked
1470	456897	6667661	H tree marked
1471	456923	6667636	R tree marked
1472	456938	6667622	R tree marked
1473	456979	6667603	H tree marked
1474	457007	6667584	R tree marked
1475	457018	6667574	R tree marked
1476	457023	6667560	H tree marked
Rocky outcrop EZ			
1477	455966	6668906	Rocky outcrop mark-up
1478	455965	6668902	Rocky outcrop mark-up
HRM EZ 1			
1479	456014	6668837	HRM EZ mark-up
1480	456016	6668812	HRM EZ mark-up
1481	456015	6668810	Existing road through HRM
1482	456015	6668804	HRM EZ mark-up
1483	456016	6668779	HRM EZ mark-up
1484	456008	6668761	HRM EZ mark-up
1485	455998	6668736	HRM EZ mark-up (inside mapped EZ)
1486	456006	6668716	HRM EZ mark-up
1487	456006	6668715	Stump (outside mark-up)
1488	456007	6668697	HRM EZ mark-up
1489	456002	6668688	HRM EZ mark-up
Riparian protection zone			
1490	456021	6668644	Riparian protection mark-up
1491	456033	6668639	Riparian protection mark-up
1492	456045	6668631	Riparian protection mark-up
Rainforest EZ			
1493	456095	6668634	Rainforest EZ mark-up
1494	456093	6668639	Rainforest EZ mark-up
1495	456114	6668635	Rainforest EZ mark-up
1496	456138	6668634	Rainforest EZ mark-up
1497	456141	6668634	Rainforest EZ mark-up
H & R transect			
1498	456126	6668656	2 x H tree mark-up
1499	456113	6668660	H tree mark-up & R tree mark-up
1500	456099	6668667	H tree (candidate)
1501	456090	6668695	Tallowwood ring tree, candidate H tree
1502	456082	6668718	R tree mark-up
1503	456075	6668735	H tree mark-up
1504	456081	6668735	R tree mark-up & candidate R tree
1505	456075	6668752	H tree mark-up & R tree mark-up
1506	456086	6668784	H tree mark-up, 2 x R tree mark-up & 2 x ringed tallowwoods
HRM EZ 2			
1507	456931	6668535	At road in front of stag
1508	456935	6668523	At stump of stag
1509	456957	6668516	Track around stump of stag
1510	456958	6668548	Track around stump of stag
1511	456907	6668531	HRM mark-up
1512	456881	6668522	HRM mark-up
1513	456867	6668513	HRM mark-up
1514	456850	6668483	HRM mark-up
1515	456861	6668384	HRM mark-up
1516	456859	6668260	HRM mark-up
Crossing A			

1517	457269	6668070	Crossing drainage
1518	457268	6668067	Crossing
1519	457272	6668047	Crossing drainage
Unmapped drainage line			
1520	457256	6668053	Stump 2.3m from drainage feature
1521	457257	6668053	Within drainage feature
1522	457258	6668055	Stump 2m from drainage feature
1523	457264	6668056	Stump 5.8m from drainage feature
1524	457263	6668053	Stump 8.2m from drainage feature
1525	457252	6668049	Stump 8.8m from drainage feature
Crossing B			
1526	457241	6667864	Crossing drainage
1527	457257	6667853	Crossing
1528	457277	6667840	Crossing drainage

EPA audit waypoints



Legend

- Waypoints_25-MAR-15

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 SUBMISSIONS FORM – ELLIS STATE FOREST, COMPARTMENTS 60, 61, 63, 64, 202

Condition No.	EPA draft finding / risk categorisation	Location – description, GPS	FCNSW submission	EPA response to FCNSW submission	EPA final finding & risk categorisation
5.1a) Hastings River Mouse Exclusion zone protection	Not applicable	HRM exclusion zone north of log dump 16	<p>FCNSW requests the final EPA report records this condition as compliant & removes subjective language suggesting a thorough risk assessment was not undertaken.</p> <p>WorkCover NSW provided a directive to remove a dangerous stag located within a Hasting River Mouse exclusion. A risk assessment was undertaken and actions taken to reduce the risk of disturbance to the Hastings River Mouse exclusion. The removal of a dangerous tree is not classified as a 'specified forestry activity'. Therefore, as the "EPA notes no additional incursions were observed" the finding should be compliant.</p>	<p>The EPA considered Forestry Corporation's submissions.</p> <p>As the removal of a dangerous tree is not a specified forestry activity the EPA could not assess compliance with this condition. The removal of the dangerous tree was documented in the audit report, regardless, to ensure transparency in how and why the HRM exclusion zone was disturbed.</p> <p>No change to the EPAs findings.</p>	Not applicable
EPL Schedule 4, Condition 17, Condition 20 Drainage feature protection	Non-compliant / Code Yellow	EPA Identifier 1518 (457268 / 6668067) to 1521 (457257 / 6668053)	<p>FCNSW requests the final EPA report records this condition as compliant. FCNSW would welcome a joint site inspection to discuss the assessment of this drainage feature.</p> <p>FCNSW inspected the unmapped drainage line east of 'Crossing A' on the 9th June 2015. Evidence was collected that indicates FCNSW correctly assessed the drainage feature as a 'drainage depression' given the lack of (1) evidence of active erosion or deposition and (2) an incised channel of more than 30cm with defined bed and banks. Therefore, FCNSW believes mark up was compliant and an action plan is not required.</p>	<p>The EPA considered Forestry Corporation's submissions.</p> <p>This issue was discussed with the FCNSW harvesting supervisor on site and again at the field debrief. No clear evidence was provided in these instances regarding the classification of the feature as a drainage line or depression.</p> <p>As documented in the audit report, the EPA found 15m of the feature in question, east of crossing A, as a drainage line due to the defined bed and bank measured up by EPA officers.</p> <p>Due to the small scale of this incident a low level of environmental impact was determined resulting in a risk ranking of</p>	Non-compliant Code yellow

				yellow. For this reason there will be no change to the EPAs findings.	
5.1 F Hastings River Mouse exclusion zone mark-up	Non-compliant / Code Yellow	EPA Identifier 1485 (455998 / 6668736)	<p>FCNSW requests the final EPA report records this condition as compliant.</p> <p>FCNSW inspected the Hasting River Mouse Exclusion zone below log dump 22 on the 9th June 2015. FCNSW could not locate the specific tree which was allegedly marked 8 metres within the exclusion zone boundary. However, it was noted that the exclusion boundary was generally marked conservatively (within the net harvest area). This is demonstrated by the audit data supplied by the EPA (See Figure 1). The data also indicates the marking at EPA Identifier 1485 was only 2.5 metres inside the exclusion boundary, which can be explained by GPS variation. Therefore, given the EPA did not observe any boundary incursions, FCNSW believes the exclusion zone marking was compliant and an action plan is not required.</p>	<p>The EPA considered Forestry Corporation's submissions.</p> <p>The EPA included photographic evidence of the marked tree in question in the Final Audit report. The EPA measured the marked tree as 8m within the marked boundary zone.</p> <p>No change to EPAs findings.</p>	Non-compliant Code yellow

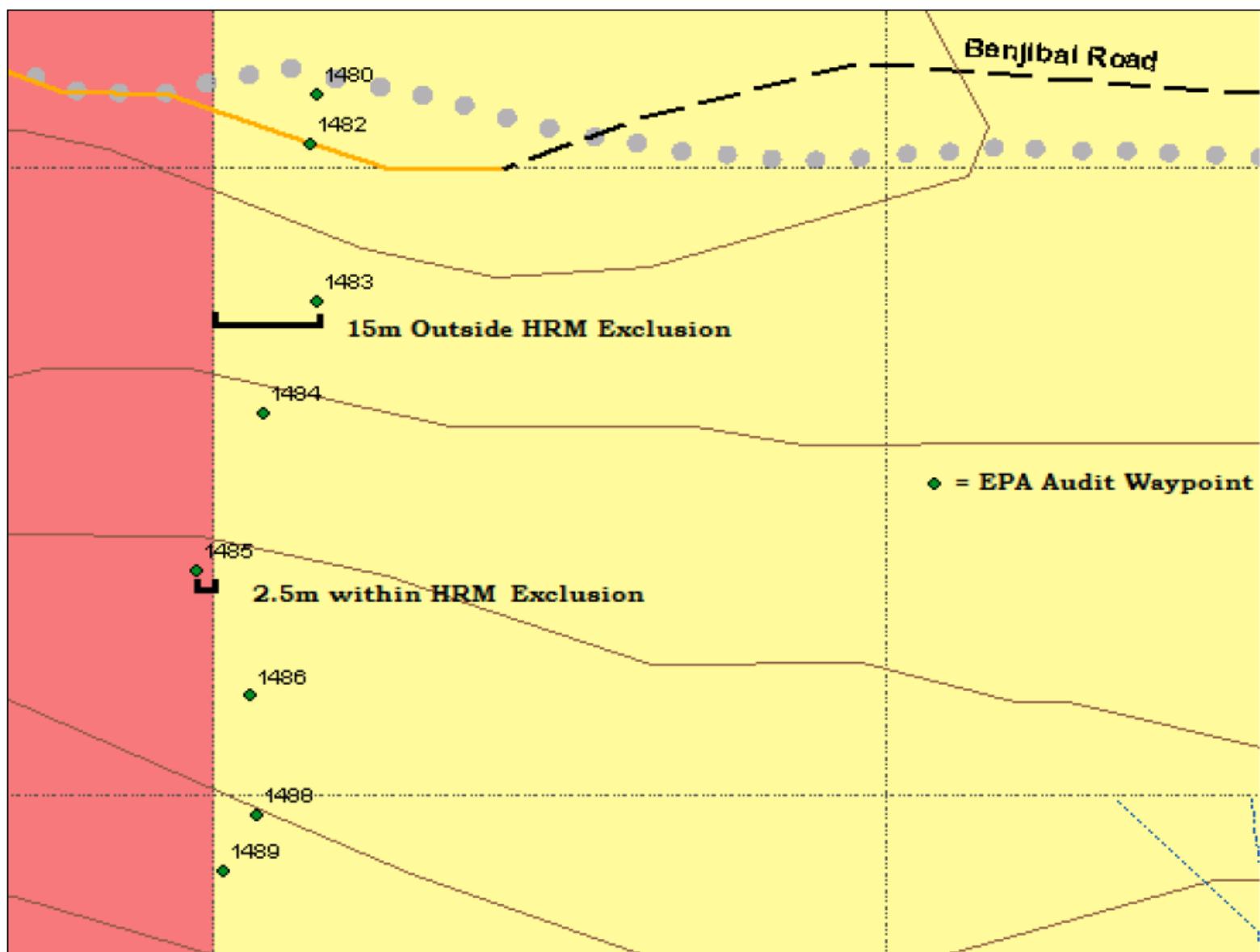


Figure 1. Map illustrating FCNSW marking of Hasting River Mouse exclusion (produced using EPA audit waypoint data)