

EPA AUDIT REPORT – TALLAGANDA STATE FOREST, COMPARTMENT 2445

Auditee:	FORESTRY CORPORATION OF NSW (FCNSW)
Audited State Forest & Cpts:	TALLAGANDA STATE FOREST, COMPARTMENT 2445
Region:	Southern Region Integrated Forestry Operations Approval (IFOA)
Date/Audit timing:	18 November 2014. Audit debrief with FCNSW staff held on 13 February 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:	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:	• Hollow bearing and recruitment trees • Basal Area Retention • Riparian Protection Zones – Mark-up and protection • Roads and Crossings Physical scope: This audit was limited to the physical boundaries of compartment 106. Temporal scope: The audit period adopted for assessment of compliance with operational conditions was on the day of the audit inspection (18 November 2014).
Audit criteria:	5.6 (d)(e)(h) Hollow bearing and recruitment tree retention, selection and protection 5.7 Riparian habitat protection Schedule 5 EPL – Roads and crossings maintenance Condition 5 of the Southern Region IFOA – Basal Area Retention
Summary of Operations	Operation commencement date: 2 October 2014 Silvicultural practice: Brown Barrel / Silvertop Ash and Mountain Gum stands – Heavy Single tree selection (STS) over 80% of harvest area, STS Light over 20%. Stand age: Non-Regrowth Zone

1. Audit Findings – Overview

The EPA identified 5 non-compliances and 49 compliances with the IFOA and POEO Act, including determinations of further observations.

A summary of EPA's 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
Riparian protection	Riparian zone mark-up	3	0	0	0
	Riparian zone protection	2	1	0	0
Roads and crossings	POEO s.120	7	0	0	0
	Clause 37, Schedule 5 EPL	7	0	0	0
Hollow bearing and recruitment trees	H Retention	1	0	0	0
	H Selection	15	0	0	0
	R Retention	1	0	0	0
	R Selection	0	0	1	0
	H&R Protection	13	3	0	0
Basal Area	Basal Area Retention	0	0	1	0
	TOTAL	49	4	2	0

2. Audit Recommendations

Condition No.	Number of non-compliance s	Action Details	Non-compliance Code*	Target/Action Date
5.6(h)	3	Hollow Bearing & Recruitment Tree protection An action plan must be developed and implemented to ensure that hollow-bearing and recruitment trees are protected from forestry activities, accumulated debris and post logging burning according to TSL Condition 5.6(h).	Code: Yellow	End of October 2015
5.7.1	1	Stream Protection An action plan must be developed and implemented to ensure that hard stream exclusion zones are protected from forestry activities.	Code: Yellow	End of October 2015
Total	4			

* Further observation of audit

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 FINAL AUDIT FINDINGS TABLE – TALLAGANDA STATE FOREST, COMPARTMENT 2445

CONDITION RELATED TO HOLLOW-BEARING TREES – NON-REGROWTH ZONE - RETENTION							
Condition No. and detail			Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee	
5.6(b) Tree Retention Threatened Species Licence, Southern Region 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 (sample size = 1 for retention, where “1” refers to the net harvest area)	Hollow-bearing trees provide habitat for many species and are a key component of ecologically sustainable forest management.	No further action required	
Comment and Evidence							
The EPA found that FCNSW complied with this condition in the areas assessed. The EPA assessed retention rates using circular plots of a 25m radius, scattered randomly inside the net harvest area. Five plots equalled 1ha, enabling an assessment to be made. A total of fifteen plots were used during the audit. The EPA recorded 15 Hollow-bearing trees across the area surveyed, equating to a retention rate of 5 per hectare. Location 1 (5 plots): 3 Hollow-bearing trees and 6 Recruitment Trees. Location 2 (5 plots): 5 Hollow-bearing trees and 5 Recruitment Trees. Location 3 (5 plots): 7 Hollow-bearing trees and 5 Recruitment Trees.							
Location number	Waypoints (1 for each plot) - for E / N see Attachment 1	Area assessed (ha)	Number of hollow bearing trees recorded	Number of recruitment trees recorded	Trees marked	No of trees that were damaged	No of trees with debris within 5m, over 1m height
1	864, 865, 868, 869	1 ha	3	6	9	0	0
2	873, 874, 877, 878, 879	1 ha	5	5	10	0	0
3	890, 891, 892, 893, 894	1 ha	7	5	12	1	3

CONDITION RELATED TO HOLLOW-BEARING TREES – NON-REGROWTH ZONE – SELECTION

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
5.6(b) Tree Selection Threatened Species Licence, Southern Region Within the Non-Regrowth Zone the following requirements for retention of Hollow-bearing trees apply: ii. In selecting hollow-bearing trees for retention, priority must be given to any hollow-bearing trees which exhibit evidence of occupancy by hollow dependent fauna and trees which contain multiple hollows or hollows of various sizes iii. 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: i. Belonging to a cohort of trees with the largest dbhob ii. Good crown development iii. Minimal butt damage iv. Represent the range of hollow-bearing species that occur in the area v. Located such that they result in retained trees being evenly scattered throughout the net logging area	Yes	0 / 15 (sample size = the number of hollow-bearing trees assessed)	Hollow-bearing trees provide habitat for many species and are a key component of ecologically sustainable forest management.	No further action required
Comment and Evidence				
The EPA found that FCNSW complied with this condition in the areas assessed apart for the size of the trees, which was not measured. EPA officers recorded visible hollows, burls and protuberances on all of the hollow-bearing trees marked in the field. Most of the H trees were dominant or co-dominant.				



Marked H trees



CONDITION RELATED TO RECRUITMENT TREES – NON-REGROWTH ZONE - RETENTION

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
5.6(b) Tree Retention Threatened Species Licence, Southern Region Within the Non-Regrowth Zone the following requirements for retention of Recruitment trees apply: a) A minimum of five recruitment trees must be retained per hectare of net logging area.	Yes	0 / 1 (sample size = 1 for retention, where “1” refers to the entire net harvest area)	Hollow-bearing trees provide habitat for many species and are a key component of ecologically sustainable forest management.	No further action required

Comment and Evidence

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

The EPA assessed retention rates using circular plots of a 25m radius, scattered randomly inside the net harvest area. Five plots equalled 1ha, enabling an assessment to be made. A total of fifteen plots were used during the audit. The EPA recorded 16 Hollow-bearing trees across the area surveyed, equating to a retention rate of more than 5 per hectare. Location 1 (5 plots): 3 Hollow-bearing trees and 6 Recruitment Trees. Location 2 (5 plots): 5 Hollow-bearing trees and 5 Recruitment Trees. Location 3 (5 plots): 7 Hollow-bearing trees and 5 Recruitment Trees.

Location number	Waypoints (1 for each plot) - for E / N see Attachment 1	Area assessed (ha)	Number of hollow bearing trees recorded	Number of recruitment trees recorded	Trees marked	No of trees that were damaged	No of trees with debris within 5m, over 1m height
1	864, 865, 866, 868, 869	1 ha	3	6	9	0	0
2	873, 874, 877, 878, 879	1 ha	5	5	10	0	0
3	890, 891, 892, 893, 894	1 ha	7	5	12	1	3

CONDITION RELATED TO RECRUITMENT TREES – NON-REGROWTH ZONE – SELECTION

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
5.6(b) Tree Selection Threatened Species Licence, Southern Region Within the Non-Regrowth Zone the following requirements for retention of recruitment trees apply: b) Recruitment trees must be selected with the objective of retaining trees having as many of the following characteristics as possible: 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	0 / 16 (sample size = the number of marked recruitment trees assessed)	Recruitment trees are future Hollow bearing trees, which provide habitat for many species and are a key component of ecologically sustainable forest management.	No further action required

Comment and Evidence

The EPA did not make a finding in regard to Recruitment tree selection, due to insufficient data being collected at the time of the audit. Stumps size was not collected in the field thus not able to make a finding on whether trees were selected from the cohort of trees with the largest DBHOB.



CONDITION RELATED TO HOLLOW-BEARING AND RECRUITMENT TREES – PROTECTION

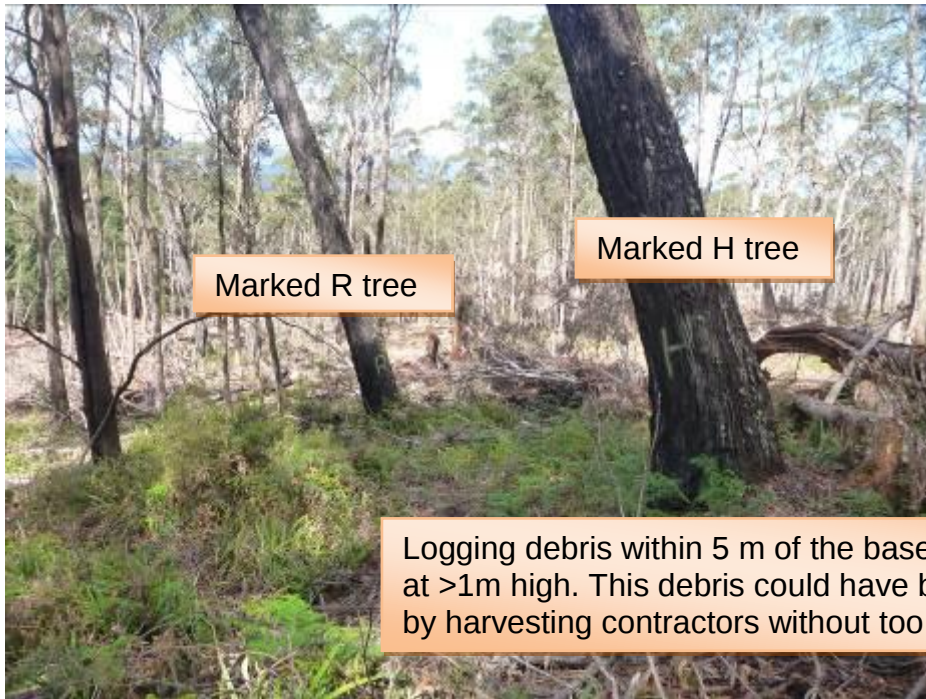
Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
5.6(h) Protection of retained trees Threatened Species Licence, Southern Region i. When conducting 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. 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, <i>Allocasuarina</i> 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 metre radius of retained trees must be removed or flattened to a height of less than one metre. Mechanical disturbance to ground and understorey must be minimised to the greatest extent practicable within this five metre radius. Habitat and recruitment trees must not be used as bumper trees during harvesting operations.	(ii) No Code Yellow	3 / 16 (sample size = 16, being the number of marked trees retained)	A detailed description of importance is contained at the bottom of this criterion. This non compliance was assigned a yellow risk category as the likelihood of environment harm is likely and the scale of harm / environmental sensitivity are low to moderate.	An action plan must be developed and implemented to ensure that debris >1m in height is not accumulated within 5m of Hollow-bearing and Recruitment trees.

Comment and Evidence

The EPA found that FCNSW did not comply with this condition in the areas assessed.

The EPA found two hollow-bearing trees and one recruitment trees with debris >1m in height accumulated around the tree base, at the location indicated below.

Trees	Waypoint	Easting	Northing
Silvertop Ash: 2 marked H trees, 1 marked R tree	893	728387	6050134



CONDITION RELATED TO FOREST STRUCTURE – BASAL AREA RETENTION				
Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
Southern IFOA Condition 5 – “Single Tree Selection” Single Tree Selection refers to a silvicultural practice that, in relation to a tract of forested land, has the following elements: a) In the South Coast Sub-Region, trees are selected for logging or culling with the objective of ensuring that: (i). The sum of the basal areas of trees removed or destroyed comprises no more than 45% of the sum of the basal area of all trees existing immediately prior to logging or culling within the net harvestable area of the tract, and (ii). The sum of the basal area of trees remaining after logging or culling as a proportion of the net harvestable area of the tract existing immediately prior to logging or culling is at least 10m² per hectare.	Not determined	0 / 1	Retaining trees in compliance with this condition is important for maintaining a diverse forest structure and form. Maintaining diverse form and structure are keys to effective ecological sustainable forest management.	
Comment and Evidence				
EPA did not determined compliance in the areas assessed, because insufficient data was collected to enable an assessment across the whole of the harvesting tract. The EPA used basal area sweeps to record the basal area of a stand at eleven plot points (being the plots used to assess H & R tree retention). The harvesting plan for compartment 2445 specifies an average basal area of 31m²/ha, with a range of 26 – 36m²/ha. The EPA recorded a range of basal areas from 8 – 22m²/ha, with an average of 15m²/ha. Using the FCNSW figure of 31m²/ha as a starting point, the data indicates that the harvesting operation removed on average, 51% of the initial basal area. This may not be the case in some areas where the basal area recorded was higher.				

The basal area measurements taken by the EPA were as follows:

Plot Number	Basal Area (m ² /ha)	Waypoint	Easting	Northing
1	18	869	728535	6049880
2	22	873	728272	6049902
3	14	874	728221	6049879
4	16	877	728338	6049859
5	14	878	728402	6049849
6	12	879	728420	6049740
7	16	890	728505	6050169
8	14	891	728461	6050188
9	20	892	728404	6050189
10	18	893	728387	6050134
11	8	894	728462	6050088

CONDITION RELATED TO ROADS AND CROSSINGS
(SECTION 120 OF THE PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997)

Condition No. and detail	Compliant? Yes/No/ Not determined/N ot Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
Section 120 POEO Act: Prohibition of pollution of waters (1) A person who pollutes any waters is guilty of an offence. (2) In this section: pollute waters includes cause or permit any waters to be polluted.	Yes	0 / 7 (7 = number of crossings audited for drainage)		No action required
Comment and Evidence				
The EPA found that FCNSW complied with this condition in the areas assessed. In the seven crossings inspected, EPA officers observed no pollution of waters. In addition to the drainage structures installed along the road, EPA officers observed significant natural vegetation that had been left undisturbed. Natural vegetation acts as a filter and aids in protecting the watercourse from pollution.				

Condition related to the construction and maintenance of ROADS AND CROSSINGS
(Schedule 5 of the Environment Protection Licence for the Southern Region)

Condition No. and detail	Compliant? Yes/No/ Not determined/N ot Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee
Clause 37, Schedule 5 of the EPL: Road crossings within 30 metres of drainage features 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 / 7 (7 = number of crossings audited)		No action required

Comment and Evidence

The EPA found that this condition was complied with in the areas assessed.

The EPA inspected a total of seven (7) road crossings in compartment 2445, for both pollution of waters and drainage. All of the crossings were located on South Forest Way. Some of these crossings were not marked on the harvest plan operational map. The locations of the crossings are shown on the map below (next page). At each of the crossings inspected, EPA officers found appropriate drainage structures at the required distances of between 5 and 30m from the crossing. The drainage structures appeared stable and were effective at preventing pollution from entering the crossing.



Road surfaces
approaching crossing



Above: The first crossing inspected (un-named) was a causeway over a second order stream. The crossing was drained using mitre drains and table drains, with natural vegetation acting as a filter. The road surface on both approaches appeared stable, with no erosion evident. Note: the road sloped downhill from the crossing on approach 2, so no drainage was required on that approach.



Stream bed downstream
of crossing

EPA officers observed no sediment in areas likely to cause pollution of water at any point approaching the crossing, or in the crossing itself.

Left: The second crossing inspected was another un-named crossing, over an un-mapped drainage feature. This crossing was a culvert, approximately 130m from the first crossing. The road surface on both approaches appeared stable, with no erosion evident. Table drains were used on both approaches, with no other drainage structures installed on the road.



Road surface
approaching crossing



Half pipe drainage onto
straw bale

Above and below: Crossing “C1”, over a second order stream. This crossing was a causeway and the approach drainage comprised of Mitre Drains at 5m, on both approaches. Table drains ran alongside the road on approaches and on one approach, there was also a half pipe with a straw bale, for sediment control. The maintenance of pollution control appeared adequate and the crossing appeared stable with no erosion. Stream banks were well vegetated, acting as a natural filter.



Mitre Drain with water
pooling against a straw bale

EPA officers
observed no
sediment in areas
likely to cause
pollution of water at
any point
approaching the
crossing, or in the
crossing itself.

Mitre Drains with straw
bales as filters



Road surfaces
approaching crossing



Mitre drain with straw
bale acting as filter



Mitre drain with straw
bale acting as filter

Above and right: Crossing “C2”, over a first order stream. The crossing comprised of a culvert, with mitre drains and straw bales used on both approaches as pollution control (at 5 and 7m, respectively). Some of the mitre drains showed signs of erosion, but still functioning. The road surface appeared stable on both approaches and over the crossing, with no signs of erosion.

EPA officers observed no sediment in areas likely to cause pollution of water at any point approaching the crossing, or in the crossing itself.



Road surfaces
approaching crossing



Mitre drain with natural
vegetation acting as a filter,
approx. 20m from crossing

Above and right: Crossing “C3”, over a first order stream. This crossing comprised of a culvert, with mitre drains and straw bales used on one approach, at 5m. The second approach sloped downhill from the crossing. The crossing was vegetated and stable (photo on the right shows the stream bed, which is well vegetated and clear of pollution). One of the mitre drains was eroded (photo top right), but appeared otherwise stable. The road surface appeared stable and there was no erosion evident at the time of inspection.

EPA officers observed no sediment in areas likely to cause pollution of water at any point approaching the crossing, or in the crossing itself.



Drainage line downstream
from the crossing

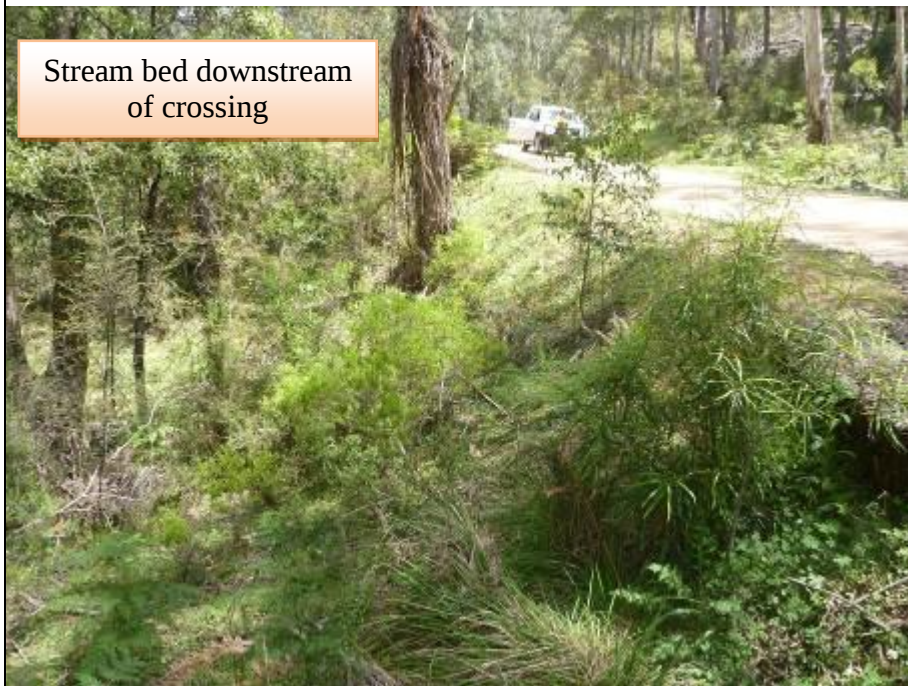


Road surfaces
approaching crossing



Mitre drain with natural
vegetation acting as a filter

Photos this page: Crossing “C4” over a first order stream. This crossing comprised of a culvert and mitre drains with straw bales on both approaches (at 5m and 5m). The drainage appeared to be adequately maintained and was supplemented by table drains and natural vegetation. One of the mitre drains had water pooling in it (photo bottom, right), but its capacity was not exceeded. EPA officers observed no sediment in areas likely to cause pollution of water at any point approaching the crossing, or in the crossing itself.



Stream bed downstream
of crossing



Mitre drain with water
pooling inside it

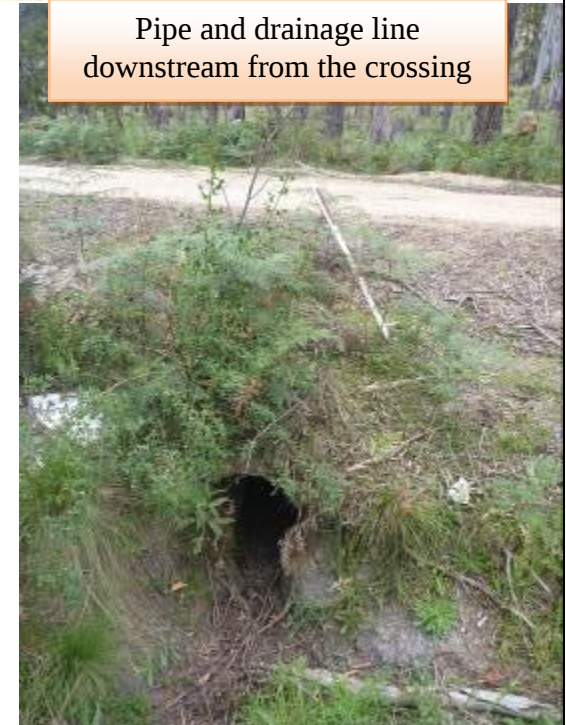
Road surfaces
approaching crossing



Mitre drain with natural
vegetation acting as a filter



Pipe and drainage line
downstream from the crossing



Above and right: Crossing “C5” over a second order stream. This crossing comprised of a culvert, with approach drainage on one approach consisting of mitre drains with straw bales (photo above right), at 5m and 25m. On the second approach the ground sloped downhill, so no drainage structures were required. As seen in the photo above, left, table drains were also installed and were vegetated on both approaches. There was no pollution evident in the stream or around the exit of the culvert. The road surface appeared stable with no evidence of erosion.



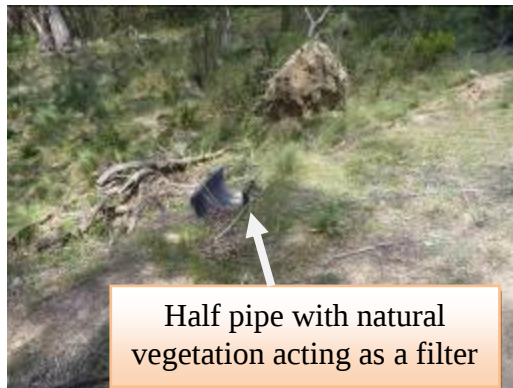
Road surfaces approaching crossing



Rill erosion on road

Earth wall with water pooling inside it.

Photos this page: Crossing “C6” over a second order stream. This crossing comprised of a culvert. On approach one, the approach drainage included mitre drains with straw bales, table drains and a half-pipe (photo, bottom left) at 10m. On the second approach the road surface was slightly eroded – rill erosion was noted for approximately 70m) and the slope of the road was 6 degrees. The drainage on the second approach comprised of an earth wall with a pool of water, 5m from the crossing.



Half pipe with natural vegetation acting as a filter



Mitre drain with straw bale as a filter

CONDITION RELATED TO STREAM EXCLUSION ZONES – MARK UP

Condition No. and detail	Compliant? Yes/No/ Not determined/Not Applicable	Number of non- compliance (sample size & unit)	Why it is important and Risk Ranking Code Explanation	Action required by licensee															
5.7 Riparian Habitat Protection – protection zones (Threatened Species Licence, Southern Region) a) A protection zone (hard) must be established along either side of a stream for its entire length. A protection zone (soft) must be established along the entire length of each protection zone (hard). b) Each protection zone is to have at least the width shown in Table 1 set out below. The width of each zone is to be measured as follows: i. the width of a protection zone (hard) is to 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; and ii. the width of a protection zone (soft) is to be measured from its boundary with the adjoining protection zone (hard); and iii. the width is to be measured along the ground surface. Minimum widths of protection zones for streams (metres) <table><tr><th>Stream Order</th><th>Protection zone (hard)</th><th>Protection zone (soft)</th></tr><tr><td>1st</td><td>5</td><td>5</td></tr><tr><td>2nd</td><td>5</td><td>15</td></tr><tr><td>3rd</td><td>5</td><td>25</td></tr><tr><td>4th or greater</td><td>5</td><td>45</td></tr></table>	Stream Order	Protection zone (hard)	Protection zone (soft)	1 st	5	5	2 nd	5	15	3 rd	5	25	4 th or greater	5	45	Not applicable – further observation	0 / 3 (total sample size = number of streams assessed)	The marking up of stream protection zones is the principal way of establishing the zones and ensuring compliance with the IFOA. Alternate methods, such as using GPS devices to estimate the boundary, are not reliable or accurate enough and should not be used.	
Stream Order	Protection zone (hard)	Protection zone (soft)																	
1 st	5	5																	
2 nd	5	15																	
3 rd	5	25																	
4 th or greater	5	45																	

Comment and Evidence

Further observation

EPA officers inspected a first order stream and a second order stream in a harvested area and used a range finder to measure the distance from the edge of a drainage line to the marked boundary. EPA officers repeated this process at regular intervals along the distance walked, over a total distance of 910 metres.

Location	Stream Order	Length of boundary assessed by EPA	Field Marking Present	Field marking correct to drainage feature	EPA Assessment Waypoints - for E / N see Attachment 1
South of Dump 1	1 st	370m	Yes (pink tape)	Yes >10m	857 - 863
NW of Dump 1 (S3 is located on this drainage line)	1 st	240m	Yes (pink tape)	Yes = 10m	871 - 872
North of Dump 1	2 nd	300m	Yes (pink tape)	Yes > 20m	870, 867



CONDITIONS RELATED TO STREAM 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
5.7.1 Specified forestry activities restricted within protection zones (hard) a) The following rules apply to a protection zone (hard), except as varied by this condition (being condition 5.7.1), condition 5.7.3 and condition 5.20 (relating to beekeeping): i. specified forestry activities are prohibited in a protection zone (hard); ii. no tree is to be felled into a protection zone (hard). If a tree falls into a protection zone (hard), then no part of the tree can be removed; iii. harvesting machinery is not to be used in a protection zone (hard). 5.7.2 Restricted operations in protection zones (soft) a) The following rules apply to a protection zone (soft), except as varied by this condition (being condition 5.7.2), condition 5.7.3 or condition 5.20 (relating to beekeeping): i. specified forestry activities are prohibited in a protection zone (soft); ii. harvesting machinery is not to be used in a protection zone (soft).	No Code: Yellow	1 / 3 (total sample size = number of streams assessed)	This non-compliance has a yellow risk category. The likelihood of environment harm is less likely and the scale of harm, in this instance is low and the sensitivity of the environmental receptor is low to moderate.	An action plan must be developed and implemented to ensure that forestry activities are excluded from stream exclusion zones.
Comment and Evidence				
The EPA found that FCNSW was not compliant with this condition in one (1) of the three (3) areas assessed. Soft and hard protection zones were all implemented correctly in the three areas assessed which consisted of 1st and 2nd order streams. However, specified forestry activities were observed within a hard protection zone of a 1st order stream, south of Log Dump 1. Why it is important to protect first order streams? Protections of areas immediate to first order streams are important for two reasons. They are important habitat corridors that promote biodiversity in the forest, a key element of ecological sustainable. They protect the structure of streams including banks and beds. They also govern water quality, load and the aquatic environment by controlling pollution and run off loads.				

Location	Stream Order	Length of boundary assessed by EPA	Field Marking Present	Field marking correct to drainage feature	EPA Assessment Waypoint - for E / N see Attachment 1	Specified Forestry Activities within Assessed area
NW of Dump 1 (S3 is located on this drainage line)	1 st	240m	Yes (pink tape)	Yes = 10m	871 - 872	EPA officers observed no forestry activities along a length of 240m assessed.
North of Dump 1	2 nd	300m	Yes (pink tape)	Yes > 20m	870, 867	EPA officers observed no forestry activities along a length of 300m assessed.
South of Dump 1	1st	370m	Yes	Yes	862	EPA officers observed specified forestry activities inside a stream protection zone (hard) at waypoint 862.

Pink tape marking the stream exclusion boundary



Attachment 1-A

Co-ordinates referred to in stream exclusion zone protection and mark up, recruitment tree retention, and hollow-bearing tree retention tables (GDA 1994 MGA Zone 56):

Waypoint	Easting	Northing
857	185663	6047002
858	185604	6047042
859	185545	6047038
860	185481	6047047
861	185465	6047027
862	185485	6047062
863	185451	6047147
864	185454	6047171
865	185492	6047217
866	185522	6047273
867	185491	6047296
868	185449	6047284
869	185429	6047250
870	185367	6047340
871	185263	6047289
872	185171	6047262
873	185165	6047256
874	185116	6047231
877	185234	6047218

Waypoint	Easting	Northing
878	185298	6047212
879	185323	6047103
890	185381	6047537
891	185337	6047554
892	185280	6047551
893	185266	6047495
894	185344	6047454

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			
		Certain	Likely	Less Likely
Level of Environmental Impact	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: FCNSW SUBMISSION ON DRAFT AUDIT FINDINGS and EPA RESPONSE

Condition / Audit finding reference / page No.	EPA draft finding / risk category	Location – description GPS	FCNSW evidence submission	EPA final finding / risk category	EPA response to FCNSW submission
TSL 5.6(h) / Pg 7	Protection of retained trees / Not compliant Yellow	West of log dump 2	FCNSW has reviewed the draft audit findings. While technically the EPA findings are correct FCNSW would not record the EPA findings as non compliant. Firstly FCNSW audit methodology requires >25% of the 5m zone be impacted by debris and secondly, assess whether the tree will be adversely impacted by fire and cause the retained tree to die. FCNSW believes the intent of the TSL condition has been applied in that these trees will persist in the landscape over time and aren't adversely impacted by debris. FCNSW requests that the EPA amend this audit finding to "not determined".	Not compliant Yellow	The EPA considered FCNSW submissions and field evidence gathered. EPA assesses compliance (Yes/No) against the audit criteria, the TSL condition. Condition 5.6(h)(ii) states that logging debris <i>"must not 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."</i> The TSL condition does not mention >25%. Less than 25% is not part of the audit criteria, therefore should not be assessed to determine compliance. FCNSW "audit methodology" of introducing elements into audit criteria that don't exist is not in line with standard auditing practice, including ISO 14001:2004. To determine compliance EPA assesses against the elements of audit criteria. EPA did this and field audit evidence found non compliances against the audit criteria. The extent of debris will inform risk

					categorisation of a non compliance. It will not be used to determine whether compliance has been met or not. The EPA upholds its draft audit finding and requirement for action plan.
IFOA clause 11(D)(a) / Pg 9	Single Tree Selection / Not compliant Orange	West of log dump 1 & west of log dump 2	During the course of timber harvesting the Harvest Coordinator (HC) conducted pre-harvest and post harvest basal area assessments at random locations within the compartment. The HC assessed 12 locations and found an average removal of 44.75%, this included 2 areas that weren't harvested. Please find attached basal area assessment sheet – "HC_BA_sweeps_2445.pdf". The harvesting operation also retained large areas of this compartment due to accessibility and viability issues. As the EPA only assessed harvested areas the results in the draft audit findings may be potentially biased. FCNSW information shows that it is compliant with IFOA clause 11(D)(a). FCNSW requests that the EPA amend the draft audit finding to "not determined".	Not determined	The EPA considered FCNSW submissions and field evidence gathered. The EPA has changed its finding to "not determined" in response to the data provided.
TSL 5.7.1 / Pg 23	SFA restricted in protection zone (hard) Not compliant	South of log dump 1	FCNSW has reviewed the audit finding. FCNSW was unable to field inspect this site as coordinates provided in attachment 1 of the draft audit findings are incorrect. Furthermore, TSL condition 5.7.1(b) states that the condition is not breached where a tree is accidentally felled into a protection zone (hard). The EPA draft audit findings don't provide any evidence of what type of	Not compliant Yellow	The EPA considered FCNSW submissions and field evidence gathered. The EPA audit report included a photo of the site, showing machinery tracks and debris inside the marked riparian protection zone. The area was intensively harvested and the topography was not difficult or steep. Based on the audit evidence gathered from the site, it is likely that the tree be felled along the

	Yellow		specified forestry activities were conducted or evidence that tree felling was deliberate or negligent. FCNSW requests that the EPA review this draft finding and amend it to “not determined” or provide additional information and GPS coordinates to enable FCNSW to make a full assessment.		boundary without the need for machinery to enter the protection zone. The EPA upholds its draft audit finding and requirement for action plan.
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