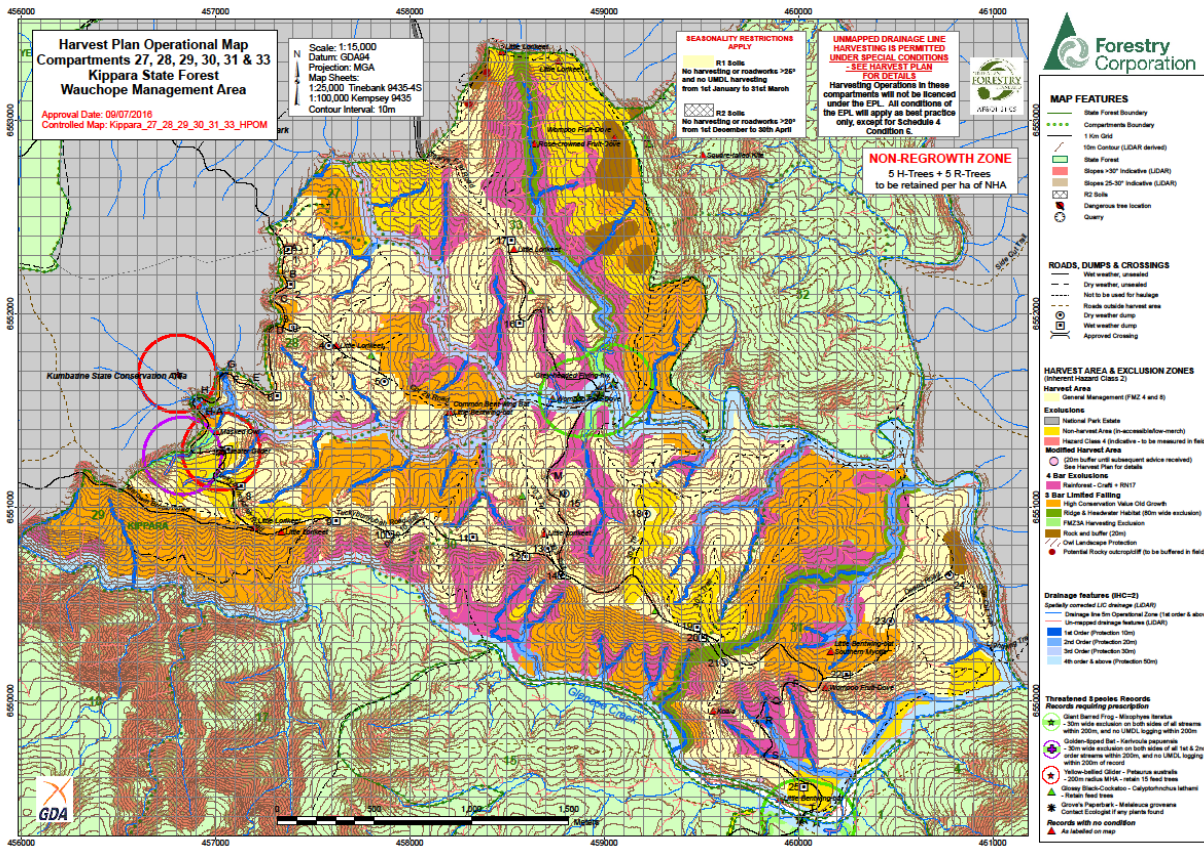


EPA AUDIT REPORT – CROWN FOREST KIPPARA STATE FOREST, COMPARTMENT(S) 27-33

Auditee:	Forestry Corporation NSW
Audit scope:	Kippara State Forest, compartment(s) 27-33 (see Map 1, below). The field audit took one day to complete.
Region:	Lower North East
Date/Audit timing:	12 December 2017
Lead EPA auditor:	John Forcier
Assisting EPA auditors:	Paul Campbell
Justification of audit:	High Risk
Audit objectives:	<p>Undertake an assessment of Threatened Species Licence (TSL) within a random sample of landscapes identified in Kippara State Forest Harvest Plan including the following;</p> <ul style="list-style-type: none"> • Hollow bearing and recruitment trees - selection and protection • Rainforest EEC boundaries
Audit criteria:	<ul style="list-style-type: none"> • Cond. 5.1 (f) Marking of EZ and buffer zones (rainforest) • Cond 5.4 Rainforest protection • Cond. 5.6 (d) (e) (h) Hollow bearing & Recruitment trees

AREAS ASSESSED:



Map 1: Areas inspected during the EPA audit on Kippara State Forest, compartments 27-31 and 33.

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AUDIT FINDINGS - OVERVIEW

A summary of EPAs findings are shown in the table below.

IFOA condition	Non-compliances	Compliances	Not Determined
5.1(f) Marking of EZ and buffer zones	1	0	0
5.4 Rainforest exclusion zone protection	3	1	0
5.6(h) Protection of Hollow bearing & Recruitment trees	4	0	0
TOTAL	8	1	0

AUDIT RECOMMENDATIONS

Action Details	Non-compliance Code*	Target/Action Date
5.1(f) Marking of EZ and buffer zones Action plan is required to be developed to address and consider an improved operational approach to physical marking in the field.	This non-compliance has a red risk category. The likelihood of environment harm is actual, because of tree felling occurred within rainforest exclusion zones. This may have been avoided if the exclusion zone was marked. The level of environmental impact is moderate (considering rate of incidence and sensitivity of environment receptor).	Action on this issue must start immediately and must continue until the EPA is satisfied that there is no further risk of non-compliance.
5.6(h) Hollow bearing & recruitment tree protection No action plan has been developed to date to ensure that retained trees are protected as per TSL condition 5.6h (i and ii). The EPA notes that the issue is recurring and any actions taken have not been sufficient. FCNSW must take more active measures to (1) educate its contractors about the need to protect retained trees; (2) supervise logging operations more vigorously to ensure compliance; (3) improve systems processes and undertake any other changes necessary to address the problem of tree protection.	This non-compliance has an orange risk category. The likelihood of environment harm is likely, because of large amounts of debris associated with modern logging operations. The EPA notes that there is an increased risk of fire damage due to the large amounts of debris. At present, the scale of harm is moderate (considering rate of incidence and sensitivity of environment receptor).	Action on this issue must start immediately and must continue until the EPA is satisfied that there is no further risk of non-compliance.

AUDIT FINDINGS

1. Protection of Retained Trees

Condition No.	Compliant? Yes/No/Not determined/Not applicable	Number of non- compliance per sample (sample size)	Risk Code	Action required by licensee
TSL 5.6 (h)	No	4/4 (H & R trees)	Likely to occur with moderate damage	An action plan must be developed and implemented to ensure H&R trees are protected at all times.

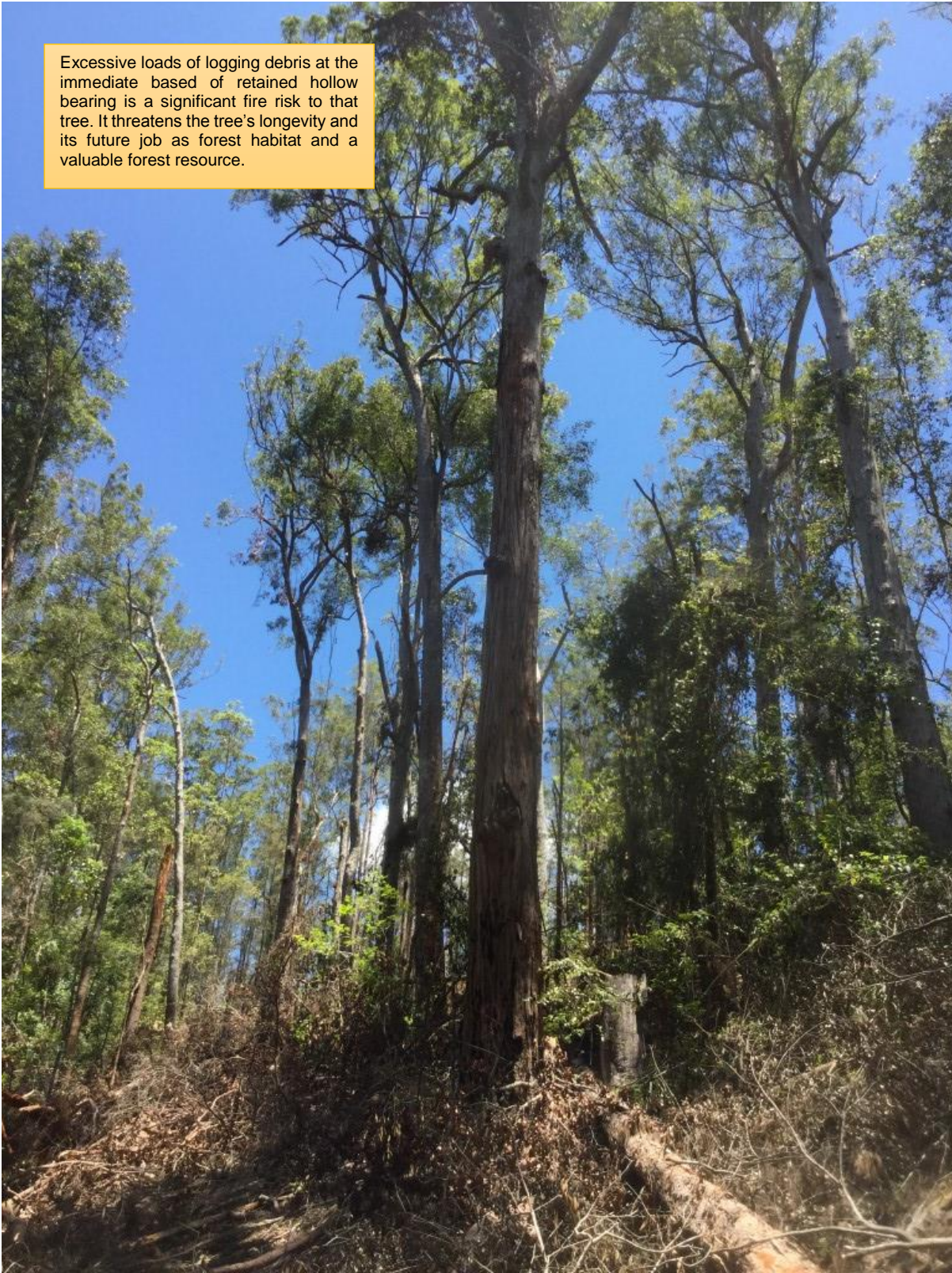
Comment and Evidence

The EPA located 4 marked and retained trees which had debris measured to be greater than 1 meter within 5 meters of the tree. The EPA assesses marked H & R trees across 2-hectare samples. Due to conditions on the day, a statistically significant are sample was not assessed, however EPA officers recorded 4 marked and retained trees which were clearly not compliant with BSL 5.6(h). The debris in each case could have been removed or flattened during the operation.





Excessive loads of logging debris at the immediate base of retained hollow bearing is a significant fire risk to that tree. It threatens the tree's longevity and its future job as forest habitat and a valuable forest resource.



2. Marking-up in field of Exclusion Zone boundaries

Condition No.	Compliant? Yes/No/Not determined/Not applicable	Number of non-compliance sample (sample size)	Risk Code	Action required by licensee
TSL 5.1F	Not Compliant	1/1	Highly likely to occur with moderate damage	Action plan required to be developed.

Comment and Evidence

This part of the audit focused on marking-up of boundaries requirements contained in Condition 5.1F of the Lower North Eastern Region TSL. This audit included:

- Rainforest;

EPA assessed boundary mark up of rainforest in one specific location. The EPA found that FCNSW was **not compliant** with the above conditions in the area assessed as this requires marking in the field.

The EPA records a single compliance finding in relation to compartment mark-up, for each compartment that is marked-up according to the TSL. If there are areas that have not been marked-up in the compartment, the EPA will record zero compliances, along with a single non-compliance for each unmarked area or feature.

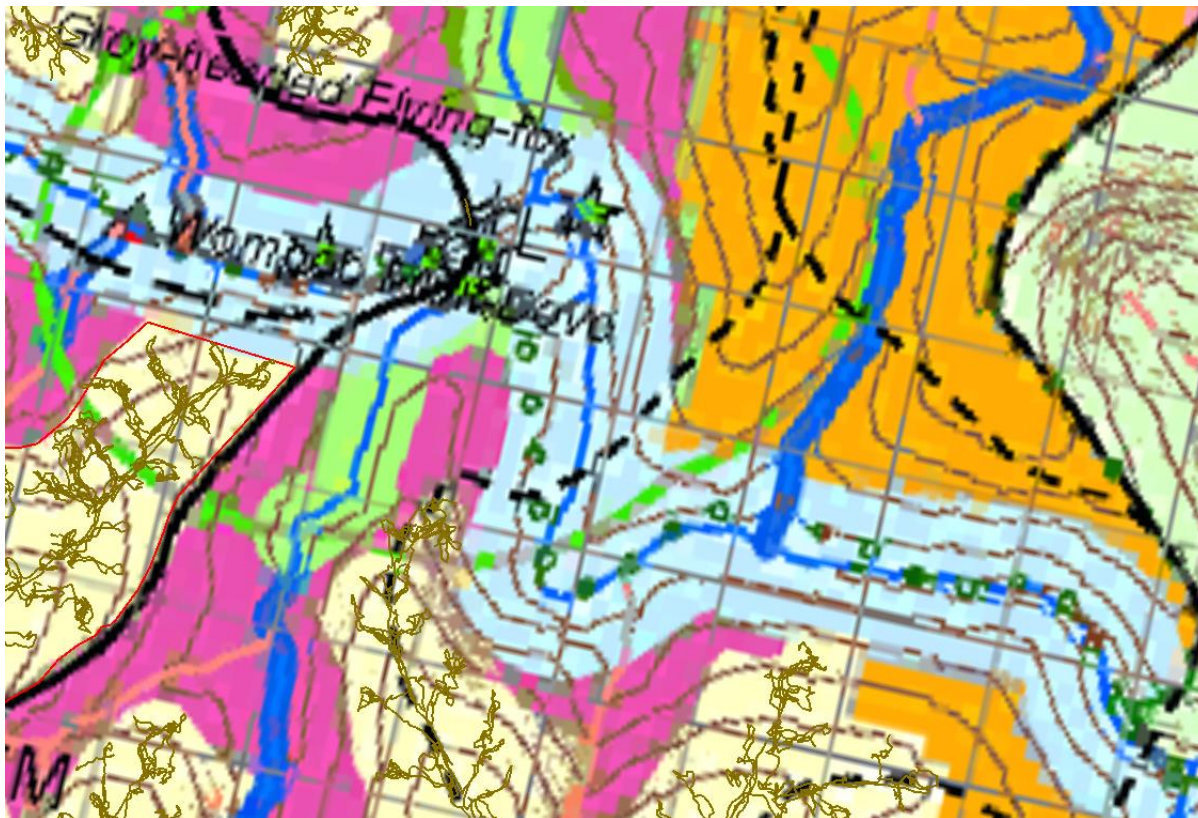
3. Rainforest Exclusion Zone

Condition No.	Compliant? Yes/No/Not determined/Not applicable	Number of non-compliance sample (sample size)	Risk Code	Action required by licensee
TSL 5.4	Not Compliant	3/4	Highly likely to occur with moderate damage	This matter will be investigated outside the audit process.

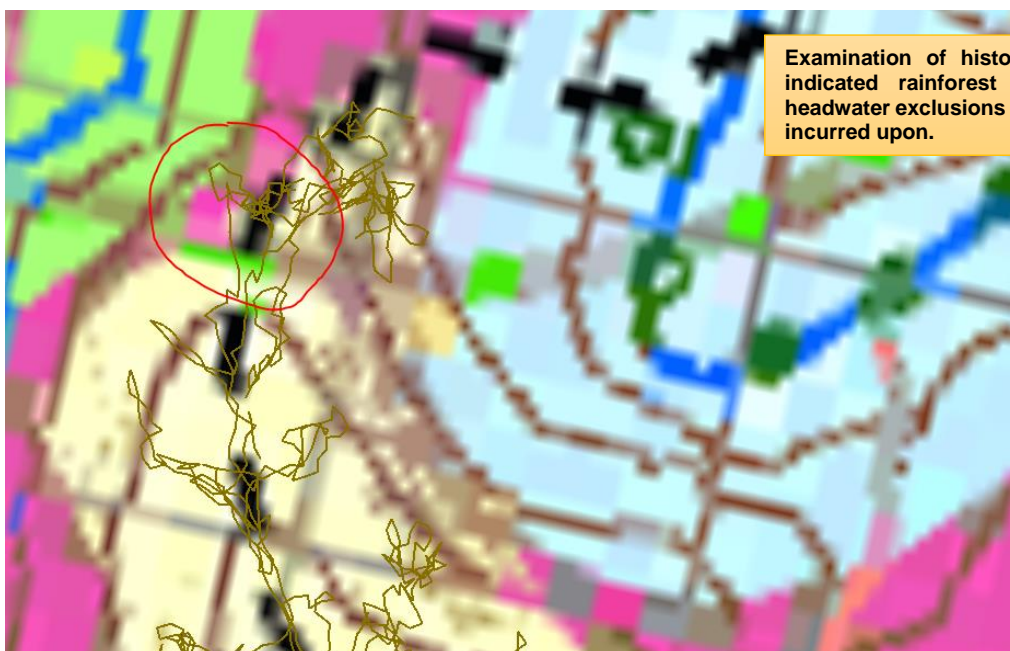
Comment and Evidence

The EPA assessed four rainforest exclusions within audit compartments. Three of the four locations examined in the field had boundaries crossed by harvesting machinery or SFA. The audit findings are that it was **not compliant**.

The EPA conducted an initial desktop analysis of Forestry Corporation of NSW's (FCNSW) digital mapping application. Several locations were identified that indicated a risk of incursion into mapped landscape exclusion zones. EPA utilised targeted field inspections to verify and ground truth the desktop audit.

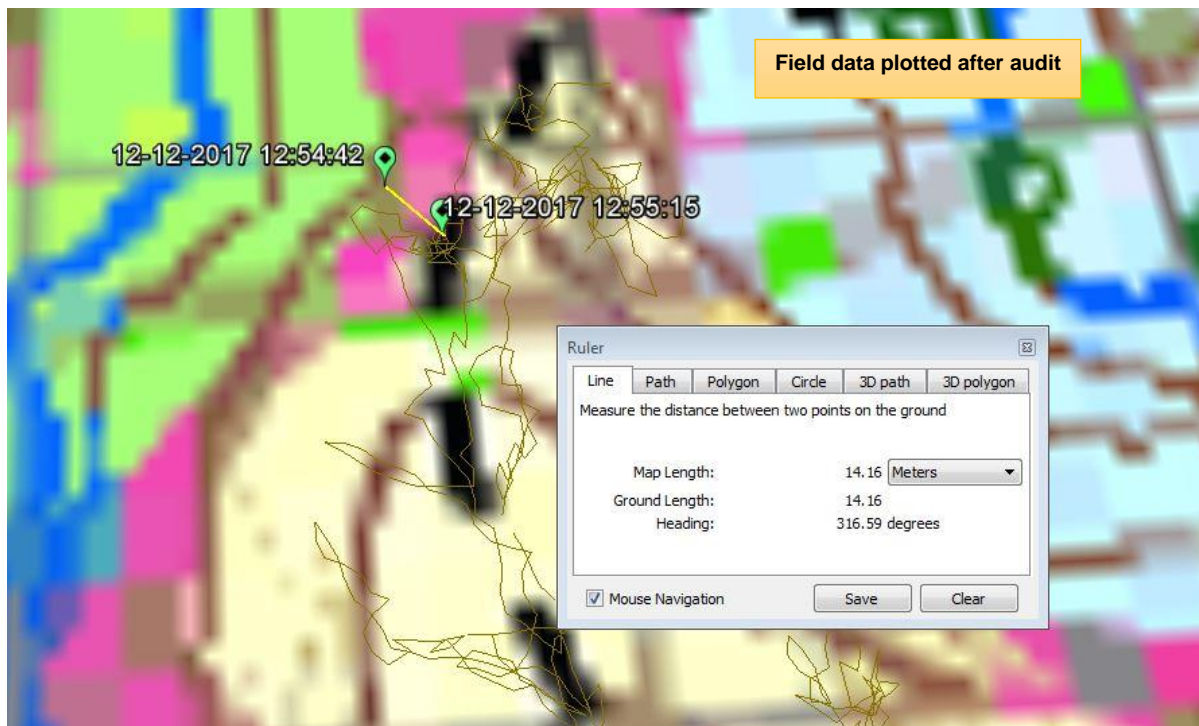


Track logs checked in locations containing multiple EZ landscape



Examination of historic track logs indicated rainforest and ridge & headwater exclusions may have been incurred upon.

Pre-field inspection desktop analysis



Post-field inspection data



Rainforest Exclusion Boundaries not marked up in field

Title	Date	Coordinate	Description
SFA Incursion 1	12 December 2017	458255/6550503	The incursion is 8 meters wide and progresses 22.5 meters into mapped rainforest. SFA incursion included machinery tracks and a large grey gum trunk and head. Rainforest boundary not marked in the field at this location.
SFA Incursion 2	12 December 2017	458962.52/6551393	The incursion is 8 meters wide and progresses 16.5 meters through mapped rainforest and into mapped ridge and headwater. No mark up of ridge and headwater or rainforest was located. SFA incursion included machine tracks, ground disturbance, tree heads and a single stump.
SFA Incursion 4	12 December 2017	460089.54/6549735	67cm stump cut at 85cm was located. No mark up of boundary was observed. SFA incursion included machinery tracks, tree heads and stumps.
Unprotected H - 1	12 December 2017	458471.35/6550818.92	Debris higher than 1 meter within 5 meters
Unprotected H - 2	12 December 2017	458984.83/6551373.18	Debris higher than 1 meter within 5 meters
Unprotected H - 3	12 December 2017	458986.23/6551374.18	Debris higher than 1 meter within 5 meters
Unprotected R	12 December 2017	458996/6551393	Debris higher than 1 meter within 5 meters

Note: The SFA incursions have been investigated outside of the audit process.

APPENDIX B: HOW TO ASSESS AND DETERMINE COMPLIANCE WITH HOLLOW BEARING AND RECRUITMENT TREES & PROTECTION OF EXCLUSION ZONES

Protection of Retained Trees

Calculating compliances / non-compliances: protection of retained trees

When assessing trees against the protection criteria, the EPA records a separate finding of compliance / non-compliance for each tree assessed. This is in line with the Condition 5.6(h) of the TSL, which requires each retained tree to be protected.

The EPA found that FCNSW was **not compliant** with the above conditions in the area assessed.

Why is it important?

The EPA considers it important that hollow-bearing and recruitment are adequately protected from both logging operations and post-logging risks, such as hazard reduction burns and wild fires. Excessive logging debris in the immediate proximity of hollow-bearing or recruitment trees increases the risk of damage to the retained trees – or tree death if the fire is very hot – in the occurrence of a fire. This has a flow on effect on the long-term availability of hollow-bearing and recruitment resources as key forestry structural values.

This part of the audit focuses on protection of hollow-bearing trees (H trees) and recruitment trees (R trees) that have been marked for retention. Condition 5.6(h) of the Lower North East Region Threatened Species Licence (TSL) requires damage to trees to be minimised using directional felling. Further to this:

- Logging debris 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.
- 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.

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 Environmental Impact	of	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.