NEFA AUDIT OF ROYAL CAMP STATE FOREST

Dailan Pugh, North East Forest Alliance, August 2012

This report details the results of NEFA's inspections of logging operations in Royal Camp State Forest, 14km south-west of Casino. NEFA has found numerous breaches of the Integrated Forestry Operations Approval, primarily:

1. Failure to thoroughly search for Koala scats, identify high use Koala feed trees, undertake star searches to identify Koala High Use Areas, and to appropriately protect Koala High Use Areas;
2. Failure to identify and protect a Yellow-bellied Glider Sap-feed tree and to retain and mark the required 15 feed trees around sap-feed trees and locality records;
3. Failure to mark and retain required numbers of hollow-bearing, recruitment, eucalypt feed and koala feed trees;
4. Wrongly identifying Hollow-bearing trees as recruitment trees so as to reduce retention requirements;
5. Failure to prepare an adequate Aquatic Habitat Assessment before undertaking in-stream works in potential habitat of the endangered Eastern Freshwater Cod and Oxleyan Pygmy Perch;
6. Using machinery in the Special Operational zone near streams when the soil was saturated, illegally constructing tracks across streams and failing to rehabilitate such areas; and
7. Failure to identify the two Key Threatening Processes of Lantana and Bell Miner Associated Dieback in their harvest planning and facilitating their expansion.

NEFA have documented what we consider to be breaches of 15 conditions of the Threatened Species Licence, 13 conditions of the Fisheries Licence and 2 IFOA conditions relating to ecologically sustainable forestry. Some of these are major breaches and many are serial offences. It is particularly disconcerting that after logging resumed in Compartment 16 tree marking improved but hollow-bearing trees were still being felled and a failure to thoroughly search for Koala scats prevented high use Koala feed trees and a Koala High Use Area being identified. An effective regulatory response is required.

NEFA's SPECIFIC FINDINGS

In their public statements on the 7th August 2012 Forests NSW mislead the public by failing to acknowledge that one of the Koala High Use Areas NEFA identified to them was actively being logged at the time of our complaint.

From our observations, it is evident that for Koalas Forests NSW have failed to meet the legal requirements of their Threatened Species Licence:

1. to identify, protect and mark 10 Koala feed trees per 2 hectares (TSL 6.14(c));
2. to thoroughly search for Koala scats 300m ahead of forestry operations when undertaking mark-up (TSL 5.2.1(b), 5.22 (a)(b));
3. to undertake "star searches" around high use Koala trees (TSL 5.22 (c)); and
4. to delineate and protect Koala High Use Areas (TSL 6.14(c)).

All high use Koala trees should be fully identified and protected as they are only a small proportion of the 10 Koala feed trees required to be retained per two hectares.

It is evident that Forests NSW have failed to meet the legal requirements of their Threatened Species Licence for Yellow-bellied Glider by:

1. failing to identify, mark, and retain an obvious Yellow-bellied Glider sap-feed tree and instead cutting it down (breaches TSL 5.2.1, 5.6 (f) iv, 6.17 (f));
2. failing to identify and mark 15 appropriate feed trees within 100m of the sap-feed tree (breaches TSL 6.17 (g)); and,
3. failing to identify and mark 15 appropriate feed trees within 200m of a call-detection record (breaches TSL 6.17 (g)).

In one 5 hectare area only one tree was marked for retention. In a 2.3ha sample to assess tree retention from a randomly chosen multi-aged part of the stand, only 4 out of the 11 required hollow-bearing trees were marked and only 5 out of the 11 required recruitment trees were marked, none were marked as eucalypt feed or Koala feed trees. Of the total of 16 trees removed that were over 40 cm dbhob and thus likely to have been mature, late-mature or senescent, at least 11 should have been retained as hollow-bearing, recruitment or eucalypt feed trees and should not have been logged.

Required retention and marking of hollow-bearing, recruitment and eucalypt feed trees is clearly deficient across the logging areas, with a variety of breaches identified:

1. inadequate numbers of trees have been retained and marked as hollow-bearing trees and recruitment trees meant to be retained for hollow-dependant animals throughout the forest; (breaches TSL 5.6(c)(d) and the site specific prescription for Brown Treecreeper);
2. trees required to be retained as hollow-bearing trees have been wrongly marked as recruitment trees to reduce retention of mature and late-mature recruitment trees (breaches TSL 5.6(c)(d));
3. trees with obvious hollows that should have been retained as hollow-bearing trees have been logged (breaches TSL 5.6(c));
4. some trees marked for retention as recruits do not have good crown development or have butt damage or are suppressed and are thus unlikely to develop into hollow-bearing trees (breaches TSL 5.6(d));
5. no attempt has apparently been made to specifically identify or mark or retain any of the required eucalypt feed trees for nectivorous birds. (breaches TSL 5.6.(f), 6.11 and the site specific prescription for Black-chinned Honeyeater); and,
6. some trees marked for retention have large amounts of debris left stacked around their bases which may result in their being killed in post-logging burns (breaches TSL 5.6.(g)).

Forests NSW seem determined to continue ignoring the existence of the Endangered Oxleyan Pygmy Perch, despite repeated assurances it would be considered, and to ignore it in their planning processes contrary to their legal obligations.

By conducting instream works in potential habitat for the Eastern Freshwater Cod in compartment 16 without having completed an adequate Aquatic Habitat Assessment, Forests NSW have failed to comply with requirements 9.3(a), 9.4 (a)(b), and 9.5(a) of their Fisheries Licence.

The use of harvesting machinery in the riparian special operational zone (10m around buffer zones) when the soil was saturated, and the failure to rehabilitate rutted areas over 5 months later, are clear breaches of clauses 7.8(a) and 7.9(c) of the Fisheries Licence,

The construction of the illegal stream crossings, and the failure to rehabilitate them, breaches numerous clauses (7.4(b), 7.4(d), 7.5(b), 7.5(d), 8.1(b), 8.4, 9.1, 9.3) of the Fisheries Licence and the Threatened Species Licence (5.1 (a), 5.7(d)). That the works were apparently carried out while the area was supposedly being audited by the EPA and Forests NSW is extremely concerning.

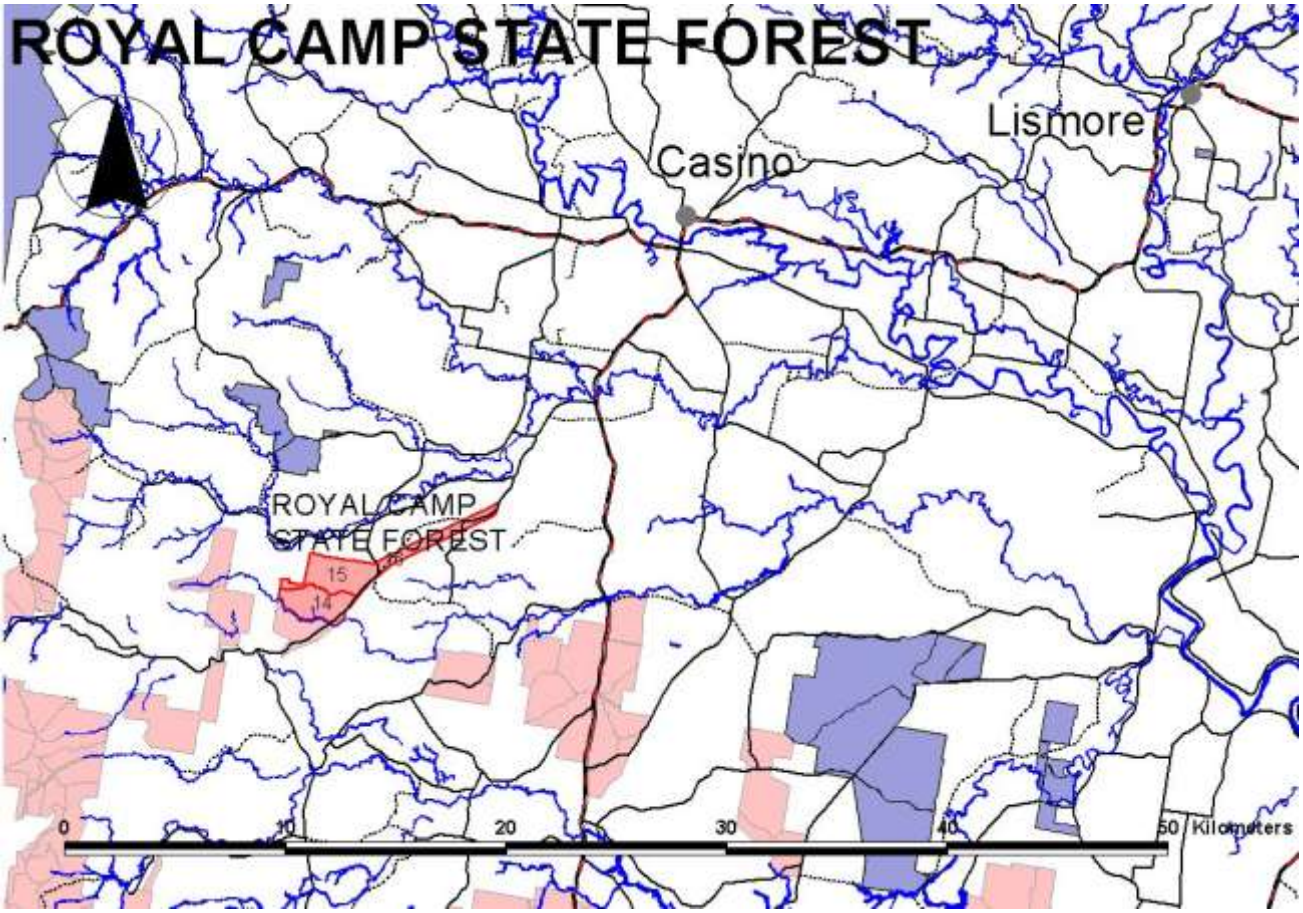
Both the forest ecosystems Wet Flooded Gum-Tallowwood and Lowlands Spotted Gum-Box are very poorly reserved and threatened by Bell Miner Associated Dieback. The Wet Flooded Gum-Tallowwood ecosystem is the most severely affected and requires rehabilitation works to control lantana. The severity of BMAD and its spread into Lowlands Spotted Gum-Box is being facilitated by the logging operations.

The logging of Bell Miner Associated Dieback affected and susceptible areas is clearly not in accord with any of the principles of ecologically sustainable forest management as defined in the IFOA, and is materially in breach of IFOA conditions 2.7.1 and 4.26. Such areas should be clearly identified in Harvesting Plans and targeted for rehabilitation, not increased degradation.

Contents

1. AUDIT FINDINGS

NEFA undertook brief assessments of compartments 14 and 15 of Royal Camp State Forests for 1-2 hours on 25 February 2012 and again on 22 and 25 July 2012. On the 4th and 5th of August 2012 NEFA undertook a weekend assessment of compartments 15 and 16 in Royal Camp State Forest in company with zoologist David Milledge, Georgia Beyer and botanist John Edwards. On the 9th August Dailan Pugh and David Milledge undertook a further assessment of compartment 15. On 19th August NEFA undertook a further assessment of logged areas in compartment 16. All compartments were in the process of being logged. Following our initial complaint logging was suspended on the 6th August, though soon resumed in compartment 16. A variety of species protection and tree retention issues were identified in these audits.



The weekend inspection of 4th and 5th of August documented 4 Koala high use areas in compartment 15, with one actively being logged, one about to be logged and two scheduled for logging in the near future. On 6 August 2012 NEFA wrote to the Ministers for Environment, Robyn Parker, and Primary Industries, Katrina Hodgkinson (copying it to the EPA and Forests NSW) asking them to stop work while an independent expert investigation is undertaken to identify Koala high use areas.

NEFA first presented photographic evidence of a variety of beaches in Royal Camp State Forest relating to tree marking and the cutting down of a Yellow-bellied Glider sap-feed tree to the Environment Protection Authority (EPA) at a meeting in Lismore on 31 July 2012 and raised our

concern that breaches were ongoing.

Following NEFA's complaint that the EPA had failed to honour an offered site inspection with experts of Styx River State Forest, on 3 August 2012 Mark Gifford, Acting Chief Regulator, EPA, wrote to me:

> *I acknowledge your concerns that EPA investigating officers did not meet with you in the Styx River State Forest. ...*
>
> *I can assure you that the EPA is committed to meeting with complainants in the field where further information is required and where such meetings can be organised at a mutually convenient time.*

Following our complaint to the Ministers, Steve Hartley, the Principal Manager Forestry, EPA, organised a site inspection of Royal Camp State Forest for the 9th August so that we could demonstrate breaches we had identified and to make sure these were properly identified, assessed and recorded. NEFA engaged wildlife ecologist David Milledge to attend to explain ecological aspects. The EPA's Tim O'Connell rang on the evening of the 8th of August to arrange to meet just outside the forest and then undertake a site inspection. When David Milledge and I had driven for one and a half hours to meet the EPA auditors Tim O'Connell and Susie Lamb, they said they never had any intent to accompany us on a site inspection and refused repeated requests to ring their superiors to clarify the agreement that had been made.

We were concerned that the EPA would not let us show them a variety of breaches we had not yet provided GPS locations for. We were also concerned that logging had resumed in compartment 16 without the EPA having bothered to assess our records (one of which was of a high use tree with >50 scats of a mother and young) which should have triggered the need for the retention and marking of 10 Koala feed trees per 2 ha, or the EPA checking for Koala High Use Areas where logging resumed.

When we later met EPA in the field they gave us 5 minutes to show them 4 high use Koala feed trees adjacent to logging that they had missed, they did not have time for us to show them the numerous other high use Koala trees we had located. When I later approached them to invite them to inspect a logged red gum that Mr. Milledge had found Koala scats under they refused.

It also appears that while operations were suspended, and the EPA were supposedly auditing the area, that Forests NSW constructed an illegal stream crossing within 200m of one of the Koala High Use Areas we had identified. If the EPA didn't see it, they must have heard it. The EPA also appear to have raised no objections when Forests NSW burnt a large part of compartment 15 thereby destroying any evidence of Koala scats.

NEFA made a complaint regarding the Fisheries Licence breaches identified herein to Fisheries NSW on the 13 August. Though they maintain they do not have the resources for a site inspection for at least 2 weeks.

There are three grossly inadequately reserved forest ecosystems that comprise most of the compartments:

- Wet Flooded Gum-Tallowwood (FT 48) 2% of original extent reserved in RFA, increases to 4% when informal reserves and prescriptions counted. The reservation of Wollumbin in 2003 improved this so that 36% of its CRA target is now achieved.
- Lowlands Spotted Gum-Box (FT 72/74) 7.5% of original extent reserved in RFA, increases to 9% when informal reserves and prescriptions counted. The reservation of Bungawalbyn in 2003 improved this so that 55% of its CRA target is now achieved.
- Richmond Range Spotted Gum-Box (FT 72/74) 5% of original extent reserved in RFA, increases to 6.3% when informal reserves and prescriptions counted. 34% of its CRA target is now achieved.

Two Key Threatening Processes occur in the compartments and are ignored in the Harvesting Plans. Both are being aggravated by the logging:

- Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners
- Invasion, establishment and spread of Lantana (*Lantana camara* L. *sens. lat*)

The Ecology Report identifies 8 records of the nationally vulnerable *Eucalyptus glaucina* in compartment 15, with six of these cited as being made by Robert Kooyman on 08/12/1998. Forester Robert Kooyman undertook 7 Flora Traverse Surveys in compartment 15 for Forests NSW on 7-9 of December 1998. His record sheets identify >128 records of *Eucalyptus glaucina* that are also mapped. This is Forests NSW's data and it should have been considered in harvest planning. Forests NSW have apparently made no attempt to avoid logging this species with a number of individuals logged.

1.1. KOALAS

The Harvesting Plans document 17 Koala records in compartments 15 and 14 and none in compartment 16. The compartments comprise "preferred forest types" for Koalas. Two primary browse trees occur in the compartments: Grey Gum *E.* spp. and Forest Red Gum *E. tereticornis.*

The NSW Recovery Plan for the Koala (DECCW 2008) identifies that the loss and degradation of habitat is the most significant threat facing NSW koala populations. Koalas have been found to have a preference for mature trees of specific species in the size range 30-80cm (DECCW 2008). In the Comprehensive Regional Assessment, undertaken jointly between the Commonwealth and NSW Governments in north-east NSW, a significant threat to Koalas was identified (Environment Australia 1999) as *"Logging that fails to retain stems in the 30-80 DBH size class".*

The Threatened Species Licence 5.2.2 requires that in compartments which contain preferred forest types, marking-up must be conducted at least 300 metres in advance of harvesting operations, with primary browse trees inspected at ten metre intervals with **thorough** searches around the base of trees for Koala scats (faecal pellets).

The identification of an "intermediate use area" for Koalas is, in part, defined as *"a single compartment where Koala scats have been detected under two of any ten consecutive trees searched within that single compartment"*. The Harvesting Plan for compartment 15 states *"Compartment 15 is an intermediate use area. 10 primary browse trees must retained per 2 hectares where available. These trees must marked for retention"*. This is as required by the Threatened Species Licence 6.14 (c)(ii) and is a legal obligation. A Koala sighting in compartment 14 in October 2011 led to the identification of a 1.4 ha high use area and the upgrading of the balance of the compartment to an intermediate use area. Compartment 16 was upgraded to an intermediate use area sometime after our evidence was provided.

The identification of a "Koala high use area" effectively requires the trigger of a high use Koala tree and then the location of three consecutive trees with Koala scats within 100 metres:

> *"Koala high use area" means an area where any of the following features are located:*
>
> *i. Three out of any ten consecutive trees inspected are found to have Koala scats beneath them; OR*
>
> *ii. a sighting of Koala; OR*
>
> *iii. a tree with more than 20 Koala scats beneath; OR*
>
> *iv. any trees with Koala scats of two distinctly different sizes beneath;*
>
> ***AND***
>
> *i. where the subsequent star search locates at least an additional three out of any ten consecutive trees inspected as having Koala scats beneath them.*

The Threatened Species Licence 6.14 (c)(i) states *"Specified forestry activities are prohibited from within all Koala high use areas. A 20 metres wide exclusion zone must be implemented around the boundary of Koala high use areas".*

On our initial inspection of logging between 4th and 5th August 2012, not one Koala feed tree was found to be marked specifically for retention within Compartment 15, and in most areas the marked hollow-bearing and recruitment trees (which can double as Koala feed trees) were far too few and of

the wrong species to satisfy this requirement. Forests NSW had apparently made no effort to comply with the requirement to mark 10 primary browse trees per 2 ha.

NEFA found abundant evidence of Koala use of feed trees in Compartment 15, such as distinctive scratch marks on the trunks of numerous trees, Koala faecal scats under many trees, and a sighting of a Koala when spotlighting. Forests NSW are required to thoroughly search for evidence of Koala use at least 300m in advance of logging in order to identify Koala High Use Areas. A high use tree is one with a Koala in it, or >20 Koala scats (faecal pellets) beneath it, or scats from a mother and baby.

The Threatened Species Licence requires that Forests NSW must conduct “star searches” for a 100 metre radius around high use trees to delineate Koala High Use Areas. A Koala High Use Area is defined by the presence of a high use tree and at least 3 sequential trees radiating out from it with one or more Koala scats beneath them. Koala High Use Areas must be excluded from logging.

In our brief inspection on the 4th and 5th August NEFA located 4 areas that meet the criteria for Koala High Use Area. One of these areas was in the process of being logged, another had been marked up for logging which was about to commence, and the two others were proposed for logging in the near future.

The fifteen Koala high use trees measured to date had diameters at breast height (dbh) of 22 to 80 cm, with 2 smaller than 30cm, 5 30-39 cm, 7 40-60cm dbh and one >60cm. In this area it indicates a preference for trees 30-60cm dbh. They were red gums, grey gums and grey box. In the 2.3 hectare area audited for retention of trees >40cm dbh it was found that the 30-60cm size class of preferred Koala feed trees is being targeted for removal (Results are at Appendix 3):

- The six trees 64 to 84 cm diameter were retained as hollow-bearing and recruitment trees (5 of these were grey gums or red gums),
- Of the 20 trees estimated to be 40-61cm dbh, 2 had been marked for retention as R trees, two had been otherwise retained (presumably to be removed when the operation is finished) and 16 had been logged. 13 grey gums and red gums had been removed and two (so far) retained.
- Another 5 grey gums and red gums estimated to have dbhs of 30-39cm were logged though retention rates were not assessed.

Most of compartment 15 has a higher dominance by Spotted Gum and thus retention of preferred feed trees averaged across the logging area will be substantially lower than this indicates.

One of the Koala High Use Areas NEFA found (east of log dump 20) was currently being logged. On the first visit on the 5th August, it was apparent that this area not been searched by Forests NSW for Koala scats, had no Koala feed trees marked for retention, and had abundant evidence of recent intensive Koala use, including by a mother and young. In a small area 6 high use Koala feed trees were identified. It was an obvious Koala High Use Area.

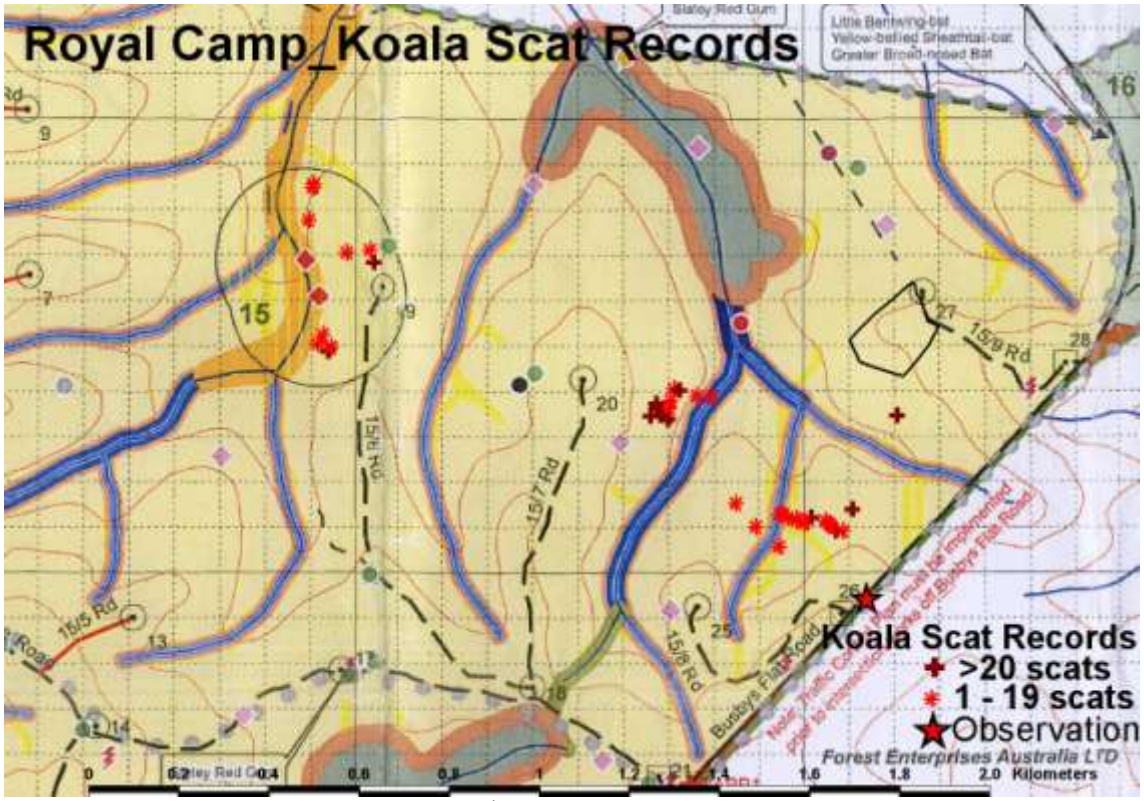
NEFA provided GPS co-ordinates for all Koala records obtained on the 4th and 5th August to both EPA and Forests NSW (in the early hours of the morning of the 6 August), along with a map clearly showing their location. Forests NSW must have known that this High Use Area was where current logging operations were being conducted and would probably have inspected the area on the 6 August.


Adult Koala observed spotlighting on the edge of Compartment 15 and sample of scats found under a Small-fruited Grey Gum feed tree in the centre of Compartment 15– note the variation in the size of scats, indicating the presence of a mother and young.


Edge of Koala High Use Area found on 5th August, the Forest Red Gums in the background had all been used by Koalas, many of them designated High Use Trees due to the presence of >20 scats about their bases and the obvious presence of scats from both mothers and young. GPS locations for these trees were provided to Forests NSW. Logging had extended into the High Use Area and not one Koala feed tree had been marked.

Undaunted Forests NSW's spokesperson Dean Kearney misrepresented our findings when, in relation to the High Use Areas we had identified, he told ABC Radio on the 7th August:

> *"When we've looked at where they were, they were well in front of where the harvesting was, so we're going to go out to those areas and start inspecting them now.*
>
> *"We probably would have got there prior to harvesting, but it's just we hadn't actually moved into those areas yet."*



Map provided early on the morning of 6 th August to Ministers, EPA and Forests NSW after NEFA visit on 4th and 5th August, , showing locations of Koala scats found at that time.

The Threatened Species Licence for logging in Royal Camp State Forest requires that at least 300m in advance of logging an adequately trained person must inspect potential feed trees at ten metres intervals and **thoroughly** search the ground for scats within at least one metre of the base of trees greater than 30 centimetres diameter at breast height. With logging extending into this High Use Area in three places, and almost the entire area being within 300m of log dump 20 and within 100m of active logging (see map below), it is evident that this claim was erroneous and that Forests NSW had no intention of undertaking any additional surveys until we made our complaint.

In their public statements on the 7th August 2012 Forests NSW mislead the public by failing to acknowledge that one of the Koala High Use Areas NEFA identified to them was being logged at the time of our complaint.

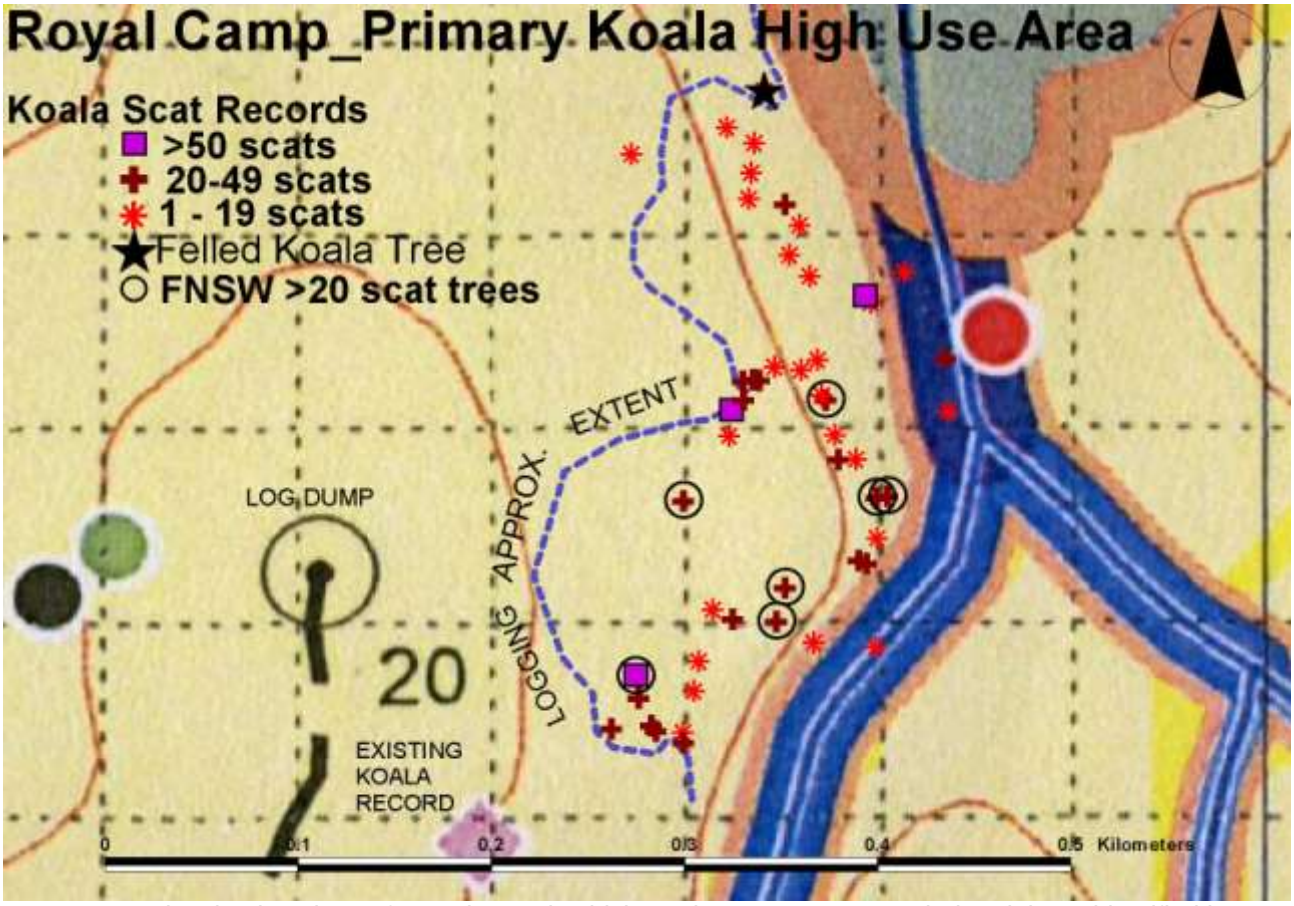
Following the EPA's refusal to undertake a site inspection with us on 9th August, David Milledge and I decided to use our time productively by inspecting the Koala High Use Area east of Log Dump 20 identified on the 5th August that was then being logged, to better define the High Use Area and incursions into it. Both Forests NSW and the EPA had spent several days auditing the area.

Combined with the results from our first inspection, within the nett logging area the two inspections yielded totals of 3 trees with greater than 50 Koala scats beneath them, 20 trees with 20-49 Koala scats beneath them and 22 additional trees with 1-19 Koala scats beneath them. Significantly, these totals do not represent full coverage of the High Use Area. On 9 th August we located the stump and head of one Forest Red Gum on the edge of this area that had been logged with the soil and litter around its base having been extensively disturbed by machinery. Despite the gross disturbance Mr. Milledge managed to locate 5 Koala scats around the tree's stump, though it is likely that more

would have existed prior to logging and that it could have been a high use tree. Some other red gums in the vicinity could not be searched because of logging debris.

In total we have so far located 23 trees within that part of this High Use Area proposed for logging with >20 scats beneath them, including three with large and small scats indicating the presence of at least one mother and young. The range of ages of scats show long-term usage until very recently. These are high use trees and of particular importance to the resident Koala population. Koalas were not observed and they may have taken refuge elsewhere because of the logging. On our first inspection Forests NSW had not apparently identified a single high use Koala feed tree or undertaken any “star searches”. No evidence of “thorough” searches for Koala scats was observed.

On our second inspection (9 th August following our complaint) Forests NSW had only marked the tree with >50 scats we documented on our first inspection and 6 other trees with >20 scats beneath them for “Star searches”. They had not delineated a single High Use Area. It was apparent that many trees with >20 scats beneath them, including trees reported to Forests NSW from our first inspection, had not been subjected to “star searches”. It was also apparent that numerous trees (with Koala scats) had not been “thoroughly” searched around the base by either Forests NSW nor EPA. Trees adjacent to obvious logging activity appeared to have been disproportionately ignored in this regard.



Map showing locations of trees beneath which Koala scats were recorded and those identified by Forests NSW for star searches (K >20) in the Koala High Use Area east of Log Dump 20.

High use Koala feed trees (>20 scats), the Forest Red Gum on the right was identified by Forests NSW and while the Small-fruited Grey Gum on the left had abundant Koala scratches on its trunk, there was no evidence that either Forests NSW or EPA had searched beneath it for scats.

The Forest Red Gum in the centre left of the photograph had >50 koala scats beneath it. After two days of auditing and searching, neither the EPA nor Forests NSW had apparently searched it or identified it as a Koala High Use Tree.

A group of 3 Koala High Use trees (marked with striped tape in background) found near the tree in the photograph above (seen here behind the tree head). None of these trees had been searched or identified by Forests NSW or EPA.

Searching in the disturbed soil and litter around the base of a recently felled Forest Red Gum revealed 5 Koala scats, showing that it had recently been used by at least one Koala and was considered likely to have been a high use tree. This matter has formed the basis for a separate report to the EPA by David Milledge. A number of nearby Forest Red Gums were buried in logging debris and could not be searched without the use of a chainsaw or machinery to remove logging slash.

According to our assessment, and assuming that the felled Forest Red Gum was a high use tree, we have calculated this Koala High Use Area to occupy approximately 3.7 hectares. NEFA considers that there has been enough damage to this area and that the whole area should be excluded from logging.

In Compartment 15 the Threatened Species Licence requires that the marking-up of trees requiring retention **must be** conducted at least 300 metres in advance of harvesting operations. All such trees **must be** marked for retention. Within, and adjacent to, the Koala High Use Area that we identified (i.e. an area of approximately 5ha) we observed a single tree marked for retention as an "R" tree or recruit hollow-bearing tree. No attempt had apparently been made to mark:

- any of the 10 koala feed trees required to be retained per 2 hectares,
- any of the 10 eucalypt feed trees required to be retained in every 2 hectares,
- any of the 10 largest trees required to be retained per two hectares as future hollow-bearing trees and
- any of the 10 trees required to be retained per 2 hectares (aside from the one mentioned) as recruitment hollow-bearing trees.

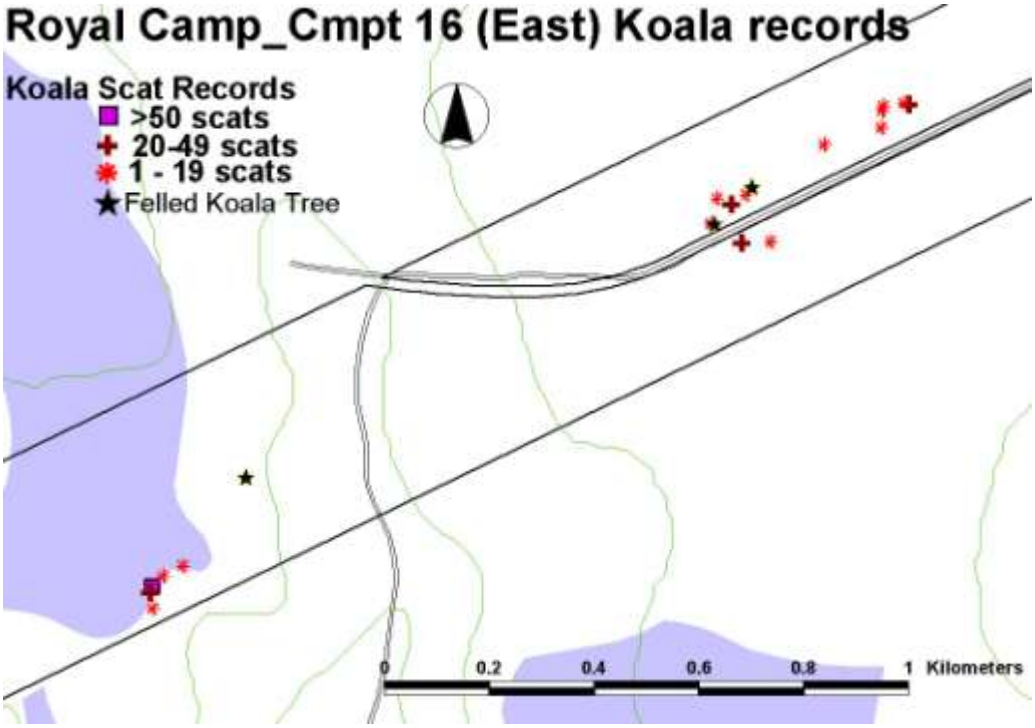
When we brought this issue to EPA's attention they displayed a distinct lack of interest.

Since our complaint, and while the EPA audit was supposedly underway, Forests NSW has burnt off substantial parts of the logged area of Compartment 15, thereby destroying the evidence of any remaining Koala scats in those areas and any further evidence of Licence breaches.

NEFA briefly inspected the western part of compartment 16 on 4 August and found abundant evidence of Koalas, with over 54 Koala scats, including from a mother and baby, beneath one Red Gum and a number of instances where 2 successive trees (including right next to the track) had koala scats beneath them. An "intermediate use area" is, in part, defined as *"a single compartment where Koala scats have been detected under two of any ten consecutive trees searched within that single compartment"*. Compartment 16 is an "intermediate use area" and should have been identified as such long before we did.

On the 19 August NEFA inspected the eastern part of compartment 16, checking areas recently logged. After being initially suspended logging had quickly resumed. We located Koala scats under 20 trees, with three of these reduced to stumps in recent logging. More than 20 Koala scats were found under four trees and more than 50 under another. Searching was limited by logging debris and ground disturbances.

In the older logged area no Koala feed trees had been marked. No trees were found that appeared to have been subject to thorough searching for Koala scats. Three high use Koala feed trees (>20 scats) were found, subsequent searches located numerous cases of 2 sequential trees with Koala scats, though we failed to achieve 3 such trees and thus did not identify any areas qualifying as high use. Many trees were not able to be searched due to logging debris and soil disturbance, so Koala High Use Areas are likely to have been detectable prior to logging. There is no evidence that Forests NSW located a single high use tree or undertook any star searches.



Koala high use feed tree (>20 scats) in compartment 16. Nobody had thoroughly searched this tree. Logging damage is severe around, with Koala feed trees felled.

In the most recently logged area a number of trees had been marked as Koala Feed Trees (K) due to our complaints that this wasn't being done. No trees were found that appeared to have been subject to thorough searching for Koala scats. Two high use Koala feed trees (one >50 scats) were found, neither of which had been previously searched. Three consecutive trees were found with Koala scats, thereby constituting a Koala High Use Area. Again searching was hampered by logging

debris and soil disturbance. There is no evidence that Forests NSW located a single high use tree or undertook any star searches.

Koala feed tree before and after thorough searching. Note the undisturbed bark, leaves and twigs in the photo on the left. >50 Koala scats were found under this tree.

Logging debris prevented many Koala feed trees from being searched. On the right is a marked Koala Feed Tree, note the lack of any evidence of scat searches around its base.

Given the obvious high usage of the identified Koala high-use trees it is evident that the Koalas place high reliance upon the quality of the browse and other attributes of specific individual grey gum, grey box and red gum trees. These trees can be widely spaced where these species are in low densities, in some places these high use Koala feed trees are in stands of spotted gum without three sequential potential feed trees within 100m. In such cases it can not be classed as a being part of a Koala High Use Area. Within stands of red gum and grey gum the Koalas are mostly active in particular individual trees. It is clear that it is the high use Koala trees should be the focus of protection in these forests, including where they occur outside Koala High Use Areas. It is evident that if every high use Koala feed tree within these compartments was protected it would average only a small fraction of the average of 10 koala feed trees per 2 ha required to be retained.

The nett harvest area of compartment 15 is 409 hectares. This means that 2,045 koala feed trees should have been identified and marked for retention. From our observations we expect there will be far fewer than 300 high use Koala feed trees in the whole compartment. None of the Koala high use feed trees we located on our first inspection had been marked for retention. We did not see one tree marked specifically for retention as a Koala feed tree anywhere in compartment 15 and most areas, such as the Koala High Use Area we investigated, have grossly inadequate tree marking.

It is extremely disturbing that since our original complaint Forests NSW have been marking Koala feed trees for retention (which vindicates one of our complaints) but are still not bothering to undertake thorough scat searches, to identify high use trees or undertake the required star searches to identify Koala High Use Areas.

From our observations, it is evident that Forests NSW have failed to meet the legal requirements of their Threatened Species Licence:

5. **to identify, protect and mark 10 Koala feed trees per 2 hectares (TSL 6.14(c));**
6. **to thoroughly search for Koala scats 300m ahead of forestry operations when undertaking mark-up (TSL 5.2.1(b), 5.22 (a)(b));**
7. **to undertake “star searches” around high use Koala trees (TSL 5.22 (c)); and**
8. **to delineate and protect Koala High Use Areas (TSL 6.14(c)).**

All high use Koala trees should be fully identified and protected as they are only a small proportion of the 10 Koala feed trees required to be retained per two hectares.

1.2. YELLOW-BELLIED GLIDER

No attempt appears to have been made to manage Yellow-bellied Gliders in accordance with the Threatened Species Licence.

Sap-feed trees are those chosen by Yellow-bellied Gliders to tap for sap by chewing, often V shaped, channels into the bark to concentrate sap for feeding. Only very specific trees are chosen, with only a felled one observed in this assessment. An adequately trained person must conduct a thorough search for, record and appropriately mark all Yellow-bellied Glider sap feed trees prior to logging (TSL 5.2.1), and all such trees must be retained and marked (5.6 f iv, 6.17 f). Within a 100 metres radius 15 feed trees must be retained.

The felling of an obvious Yellow-bellied sap-feed tree occurred in the vicinity of log dump 24. NEFA previously found that Forests NSW failed to identify numerous Yellow-bellied Glider sap feed trees at Yabbra and Doubleduke. It is obvious that they do not bother to look. Due to their abundance, sap-feed trees are very likely to have been felled at Yabbra, though the severe post-logging burn destroyed any evidence.

At Yabbra EPA issued Forests NSW a Penalty Infringement Notice and $300 fine for failing to mark over a dozen Yellow-bellied Glider sap feed trees and over a hundred other feed trees. At Wedding Bells the EPA issued a warning to Forests NSW for not properly marking a Yellow-bellied Glider sap-feed tree, damaging it by dropping trees on it and leaving debris around its base. This tree had been identified by Forests NSW's fauna surveyors by a "YBG" and arrow pointing to it sprayed onto a tree alongside the track. The EPA are still refusing to take any action over two Yellow-bellied glider sap-feed trees that went unidentified at Doubleduke. Forests NSW treat the legal requirements to protect feed trees for the Yellow-bellied Glider with contempt because the EPA do to.

The Yellow-bellied Glider sap-feed tree at Royal Camp had been logged for timber with its trunk removed and only the tree head remaining. In Royal Camp no other sap-feed trees were observed in the vicinity of this tree, indicating that it would have been of exceptional importance to the family group that tapped it. The feed marks were large and obvious, and are likely to have extended down the trunk that was removed. It is apparent that Forests NSW did not adequately look for sap-feed trees of Yellow-bellied Gliders.

The cutting down of this sap feed- tree should be treated as a serious offence. It is the latest in a sucession of failures by Forests NSW to identify and protect Yellow-bellied Glider feed trees. They should be prosecuted as serial offenders. The first prosecution of Forests NSW by the NPWS in the mid 1990s was for cutting down a sap feed- tree, and Forests NSW were then fined $2,000.

Below logging dump 22 there is a 2011 call detection site for Yellow-bellied Glider. Within 200m of Yellow-bellied Glider call detection sites 15 feed trees (trees that shed their bark in long strips) must be retained. Retained feed trees must be mature and late mature trees with good crown development, and must be marked for retention. Within this area not a single tree was marked as a feed tree. It is unlikely that the required feed trees were retained as the exclusion area is suffering from dieback (BMAD) and the bark shedding eucalypts within it do not have good crown development, and retained trees in the logging area are mostly spotted gum and therefore do not satisfy criteria.

Yellow-bellied Glider sap-feed tree felled for timber. As well as being illegally logged, the required 15 mature and late mature feed trees were not retained within 100m. Vicinity of log dump 24 (-29.0192590 152.8881660).

Forest flattened in the vicinity of a Yellow-bellied Glider call detection record. Given the dieback in the retained area and the dominance of the site by Spotted Gum it is unlikely that all the required 15 mature to over-mature bark-shedding gums would have been retained as feed trees.

It is evident that Forests NSW have failed to meet the legal requirements of their Threatened Species Licence for Yellow-bellied Glider by:

4. **failing to identify, mark, and retain an obvious Yellow-bellied Glider sap-feed tree and instead cutting it down (breaches TSL 5.2.1, 5.6 (f) iv, 6.17 (f));**
5. **failing to identify and mark 15 feed trees within 100m of the sap-feed tree (breaches TSL 6.17 (g)); and,**
6. **failing to identify and mark 15 feed trees within 200m of a call-detection record (breaches TSL 6.17 (g)).**

1.3. TREE RETENTION

There are a variety of tree-retention requirements aimed at maintaining tree hollows for hollow-dependent fauna and critical feed trees for nectivores, Koalas, Yellow-bellied Gliders and Glossy Black Cockatoos.

For the nectivorous Swift Parrot and Regent Honeyeater the Harvesting Plans adopt the default prescription (TSL 6.11) of retaining *"10 eucalypt feed trees (which may include habitat and recruitment feed tree species) within every 2ha of NLA"*. This is also the prescription applied for the Black-chinned Honeyeater that was recorded in Compartment 15. "Eucalypt feed tree" means mature or late mature trees of a variety of specified species. It is the older trees that provide the most nectar and seed. These trees must be marked for retention (TSL 6.11, 5.6(g)). This requirement cannot be misinterpreted and applies to **every** area of 2 hectares.

These compartments occur in the "regrowth zone" which means that (TSL 5.6(c)):

> *A minimum of ten-hollow bearing trees must be retained per two hectares of net logging area. Where this density is not available then those hollow-bearing trees present within the net logging area must be retained.*

Hollow-bearing trees provide essential den and nest sites for a large variety of forest animals. The retained hollow-bearing trees are supposed to be the largest trees in the stand "*and should have good crown development and minimal butt damage*". .For each of these, one mature and late mature healthy recruitment tree must be retained (5.6(d)). Logging debris has to be removed or flattened within 5 metres of retained trees and they must be marked for retention (5.6(g)).

There are increased tree retention requirements in compartment 15. The Harvesting Plan identifies that because of the presence of the Brown Treecreeper that:

> *"Within the regrowth zone a minimum 10 hollow-bearing trees must be retained per two hectares of NLA in cpts. Where this density is not available, the existing hollow-bearing trees must be retained plus additional trees must be retained to meet the requirements of the ten per two hectares. The additional trees retained must be those with the largest dbhob".*

10 mature and late mature recruitment trees per 2 hectares are required to be retained as recruitments for future hollow-bearing trees.

In summary for Compartment 15 the Threatened Species Licence requires that the marking-up of trees requiring retention **must be** conducted at least 300 metres in advance of harvesting operations and must retain.

- 10 koala grey gum and Forest Red Gum feed trees per 2 hectares,
- 10 eucalypt feed trees in every 2 hectares,
- 10 of the largest trees per two hectares as current or future hollow-bearing trees and
- 10 trees per 2 hectares as recruitment hollow-bearing trees.

All such trees **must be** marked for retention.

In these compartments it is apparent that there are extremely low numbers of older trees across large areas, with remnant large trees mostly clustered near riparian areas. As EPA maintain that

retention requirements expressed as “per 2 ha” mean that this is the average retention required across the net logging area, then tree retention needs to be significantly increased in those limited areas with a diverse range of age classes to compensate for the large areas with few hollow-bearing trees, late mature trees or mature trees.

NEFA has traversed around a quarter of the logging area of compartment 15, and undertaken thorough searches for Koala scats in only a small part of this area. We undertook a detailed assessment of tree retention in a randomly chosen area of 2.3 ha within a multi-aged stand. A visual assessment of a nearby area of similar size revealed no hollow-bearing trees at all.

Forests NSW Forests Practices Circular 2003/1 is for Monitoring and Measuring Compliance of Operations. It identifies standard auditing procedures to assess compliance. The “Compliance check sheet - Tree retention” involves undertaking 2 transects 250mx40m to assess compliance with tree retention prescriptions. This is two areas of 1 hectare. We have exceeded this audit requirement. We have repeatedly asked EPA to implement this audit methodology or a similar one.

Within, and adjacent to, the Koala High Use Area that we identified (i.e. an area of approximately 5ha) we observed a single tree marked for retention as an “R” tree or recruit hollow-bearing tree. No attempt had apparently been made to mark any of the other required trees. We take this to be a representative sample of retention in stands with low numbers of large hollow-bearing trees.

A randomly chosen area of 2.3 hectares to the south west of log dump 27 was chosen for an assessment of tree retention in a multi-aged stand. In this area all stumps were measured and all retained trees over 40 cm diameter at breast height over bark (dbhob) documented (see Appendix 4). Diameters of retained trees were measured. Stumps were adjusted to take into account taper assessed from retained trees to derive an estimated diameter at breast height. Trunk diameter at breast height (130cm) was found to be 67-97%, with an average of 84%, less than at average stump height (30cm). Tree heads were briefly assessed for obvious feeding marks or the presence of hollows. Tree species were identified as ironbark, spotted gum or as a group comprising grey box, grey gum and various red gums. Part of the assessed area, along with adjacent areas down slope, had not yet been logged and it is assumed that the two trees over 40cm dbhob that were not marked for retention are intended to be logged when the down slope area is. It appears that the ridge was logged when the downslope areas were too wet. No smaller trees had been marked for retention. Results are at Appendix 4.

In the 2.3 hectares assessed 11 hollow-bearing trees, or the next largest trees in the stand, should have been retained and 11 recruitment trees should have been retained. If not covered by these, then 11 eucalypt feed trees and 11 Koala feed trees should have been retained. All retained trees are required to be marked for retention. It was found that:

- Of the 9 trees marked for retention some are likely to have been redgums other than *E. tereticornis* and some were senescent trees, the requirement for marking and retention of 11 mature or late mature individuals of the listed eucalypt feed trees has not been satisfied.
- Of the 9 trees marked for retention, 2 (Spotted Gum and Ironbark) were not suitable as Koala feed trees, and, as some of the other marked retained trees were Grey Box and Red Gums other than *E.tetrecornis* and so did not qualify as Koala feed trees, clearly insufficient trees were marked as Koala feed trees. Koala feed trees have no size limit so it is likely that retention requirements were met from smaller trees.

- 4 Hollow-bearing trees had been marked for retention, this is 7 less than required. 2 trees marked as “R” (Recruitments) had hollows and 4 trees with hollows were cut down. To satisfy hollow-bearing tree requirements all these trees should have been retained and marked as such. The next largest tree should also have been retained. Only 11 trees over 40 cm dbhob remain and all need to be retained to satisfy the hollow-bearing tree requirements.
- Of the 5 tress marked as recruits only three were not required to be retained as hollow-bearing trees. The two unmarked trees over 40cm dbhob are presumed to be proposed for removal though are clearly required to be retained. Of the total of 16 trees removed that were over 40 cm dbhob and thus likely to have been mature or late-mature, 11 should have been retained as recruitment or hollow-bearing trees.

It needs to be emphasised that this area represented one of those areas with a reasonable range of age classes and a relatively high dominance by grey and red gums. Extensive areas of compartment 15 has very few mature, late mature or senescent trees (they appear to have been cleared) and few grey and red gums. If retention requirements are averaged across the nett logging area then it is most probable that few trees greater than 40cm dbhob would be allowed to be logged anywhere in compartment 15. It was last logged only 13 years ago and it is being logged too soon.

In one 5 hectare area only one tree was marked for retention. In a 2.3ha sample to assess tree retention from a randomly chosen multi-aged part of the stand, only 4 out of the 11 required hollow-bearing trees were marked and only 5 out of the 11 required recruitment trees were marked, none were marked as eucalypt feed or Koala feed trees. Of the total of 16 trees removed that were over 40 cm dbhob and thus likely to have been mature, late-mature or senescent, at least 11 should have been retained as hollow-bearing, recruitment or eucalypt feed trees and should not have been logged.

A bigger sample will refine tree-retention estimates, and, based on our findings we have requested EPA to do an independent audit of tree retention in the area.

It was found that numerous hollow-bearing trees (H) were marked as recruitment trees (R) or were not marked and had no corresponding recruitment tree identified, particularly in compartment 14. In this area all hollow-bearing trees are effectively required to be retained as the average of existing hollow-bearing trees would be substantially less than 10 per 2ha across the net logging area. A recruit tree is required to be retained for each hollow-bearing tree.

Hollow-bearing tree, with obvious large hollows, marked as a recruitment tree in vicinity of log dump 22 (-29.0218490 152.8866980).

Hollow-bearing tree, with obvious large hollows, marked as a recruitment tree in vicinity of log dump 22 (near above).

Hollow-bearing tree, with obvious large hollows, marked as a recruitment tree in vicinity of log dump 22 (-29.0221800 152.8858230).

Hollow-bearing trees marked as recruits had hollows clearly and readily visible from ground level. The effect of marking hollow-bearing trees as recruitment trees is to significantly reduce the numbers of mature and late-mature trees required to be retained as genuine recruitment trees.

Hollow-bearing tree, with obvious large hollows, marked as a recruitment tree in vicinity of log dump 23 (-29.0215240 152.8825440).

Hollow-bearing tree, with obvious large hollows, marked as a recruitment tree in vicinity of log dump 23. (-29.0218100 152.8852080)

Grey gum initially marked as a H tree then changed to a R. It had a DBH of 80cm and obvious hollows while the corresponding H tree was a Spotted Gum with a DBH of 70cm (latlong 29.0014800 152.8882610). Slaty Red Gum with a DBH of 90 cm and hollows marked as recruitment tree (-29.00454, 152.886266)


Stand of three hollow-bearing trees (all with clearly visible large hollows), the one in the background is marked H as a hollow-bearing tree, the one in the middle as a R (recruitment) tree and the one in the foreground is not marked at all and no recruitment tree is retained for it. Vicinity of log dump 24 (-290189150 152.8891120).


Despite a clear deficiency some hollow-bearing trees remain unmarked so they can be logged. These gums have obvious Koala scratches and hollows yet remain available for logging (29.008999 152.885493 29.004353 152.886369)

Obvious hollow-bearing trees were found to have been felled in many areas. Given that the requirements in compartments 14 and 16 are only to retain the remaining hollow-bearing trees when less than 10 per 2 ha, the loss of such trees greatly reduces tree retention requirements in this and future logging. In the 2.3 hectares assessed in compartment 15, 10 trees were found to have hollows and 4 of these were logged.

This Spotted Gum stump in compartment 16 had a diameter of 84 cm across the top and contained hollows, it is one of many felled trees in this vicinity that should have been retained as hollow-bearing trees, along with suitable recruits (-28.9836800 152.9429300, -28.9863920 152.9398000, -28.9869290 152.9394760).

Debris left stacked around a hollow-bearing tree in the vicinity of log dump 27

Some trees retained were observed to have large quantities of debris left around their bases, which will act as funeral pyres in post-logging burns and likely cause severe damage or death to such retained trees.

Debris left stacked around an unmarked hollow-bearing tree and a marked recruitment tree in vicinity of log dump 22 (-29.0215260, 152.8865870, -29.0215510 152.8865870).

Some of those trees retained as recruitment trees are suppressed, deformed or damaged. Some are unlikely to survive long enough to replace existing hollow-bearing trees as they die out and thus do not satisfy legal requirements and are not appropriate trees to retain as the hollow-bearing trees of the future.

Required retention and marking of hollow-bearing, recruitment and eucalypt feed trees is clearly deficient across the logging areas, with a variety of breaches identified:

1. **inadequate numbers of trees have been retained and marked as hollow-bearing trees and recruitment trees throughout the forest (breaches TSL 5.6(c)(d) and the site specific prescription for Brown Treecreeper);**
2. **trees required to be retained as hollow-bearing trees have been wrongly marked as recruitment trees to reduce retention of mature and late-mature recruitment trees (breaches TSL 5.6(c)(d));**
3. **trees with obvious hollows that should have been retained as hollow-bearing trees have been logged (breaches TSL 5.6(c));**
4. **Some trees marked for retention as recruits do not have good crown development or minimal but damage or are suppressed (breaches TSL 5.6(d));**

5. **No attempt has apparently been made to specifically identify or mark or retain any of the required eucalypt feed trees. (breaches TSL 5.6.(f), 6.11 and the site specific prescription for Black-chinned Honeyeater); and,**
6. **Some trees marked for retention have large amounts of debris left stacked around their bases which may result in their being killed in post-logging burns (breaches TSL 5.6.(g)).**


Retention of damaged R (recruitment) trees is common because they have no timber value, but also limited chance of long-term survival (29.001929 152.886027, 29.001309 152.886433)

1.4. ENDANGERED FISH

It is apparent that current logging operations in compartment 16 of Royal Camp State Forest that involve the undertaking of instream works in the identified potential habitat for the Eastern Freshwater Cod, are illegal in that an Aquatic Habitat Assessment that satisfies requirements has not been prepared. This has been compounded by the undertaking of apparently unapproved stream crossings without any attempt at preparing an Aquatic Habitat Assessment (see 1.6).

The Fisheries Licence is "*Terms of Licence under section 220ZW of the Fisheries Management Act, 1994 to harm threatened fish species during undertaking of forestry related activities. Upper North East Region".*

There is one "IFOA approved" crossings in compartment 14, two in compartment 15 and three in compartment 16. One of those in compartment 16 is a third order stream within identified potential habitat for the Endangered Eastern Freshwater Cod. All others are upstream from potential habitat for the Eastern Freshwater Cod. This is acknowledged in the purported Aquatic Habitat Assessments (AHAs).

There are records of the Endangered Oxleyan Pygmy Perch within 100km downstream of all compartments in Royal Camp State Forest though this is ignored in the Aquatic Habitat Assessments. The Oxleyan Pygmy Perch is identified as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the NSW *Fisheries Management Act 1994*. Actual and Potential habitat for this species has been identified downstream of the compartments. Threats to this species include runoff and sediment from stream crossings, logging operations and post-logging burns.

In November 2010 NEFA prepared the report "Preliminary Audit of Doubleduke State Forest Compartments 144, 145 and 146, Supplementary Report" that identified that the *"Assessment of Proposal for In-stream Works in Aquatic Habitats"* for compartment 144 was approved by Fisheries NSW, and it did not even recognize the existence of Oxleyan Pygmy Perch despite the compartments encompassing potential habitat and the presence of known habitat downstream. Similarly in July 2011 in the report "Wedding Bells State Forest Supporting Report", NEFA identified that Forests NSW had failed to consider the Oxleyan Pygmy Perch despite there being actual, potential and critical habitat downstream, and had been logging unmapped drainage lines in contravention of the Fisheries Licence.

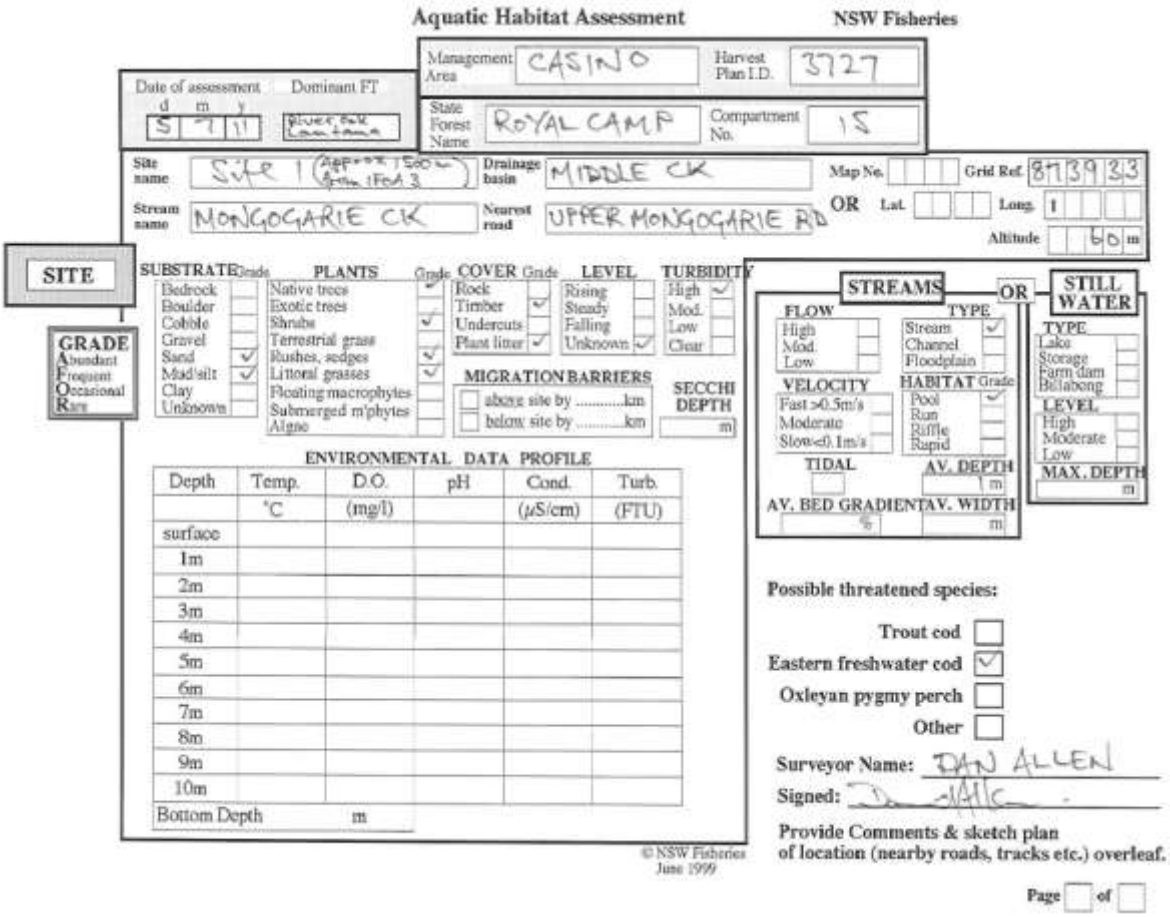
Forests NSW seem determined to continue ignoring the existence of the Endangered Oxleyan Pygmy Perch, despite repeated assurances it would be considered, and to ignore it in their planning processes contrary to their legal obligations.

For the two crossings in Compartment 15 there is one "AHA site" some 2.3 km downstream (on Mongogarie Creek) from the two proposed crossings of drainage lines. There is one "AHA site" over 2 km downstream (on Sandy Creek) from the one proposed crossing of a drainage line in compartment 14. Both "assessments" are partially (environmental data is omitted) and wrongly (ticks are used rather than a 4 level grading) completed simplistic proformas. They are not site specific assessments. They provide no meaningful or useful data and could have been filled in by a 9 year old in a few minutes. They are meaningless assessments.

The Aquatic Habitat Assessment is prepared by a harvest planner with no claimed expertise in aquatic ecosystems or species, it appends a list of records of Eastern Freshwater Cod (without specific localities), an assessment of the AHA sites, and for compartments 14 and 15 simply states:

> *The results of the desk top review resolved that within 2km upstream or 100km downstream of the relevant planning area known habitat or potential habitat occurs. Watercourses, wetlands and other water bodies within these compartments comprise Class 1 aquatic habitat as defined in condition 7 of the Fisheries Licence.*

It is assumed that this is a mistake as if it was Class 1 habitat it would trigger the need for fish surveys and more detailed assessments – none of which were done. What it shows is that Forests have no idea about what they are doing and have no checking processes able to pick up such a fundamental error. Apparently Fisheries NSW do not have any checking process either.



Representative Example of "Aquatic Habitat Assessment" prepared by Forests NSW. Note the failure to record any meaningful information on streams, most notably *water quality and flow characteristics,* and the use of ticks rather than grades.

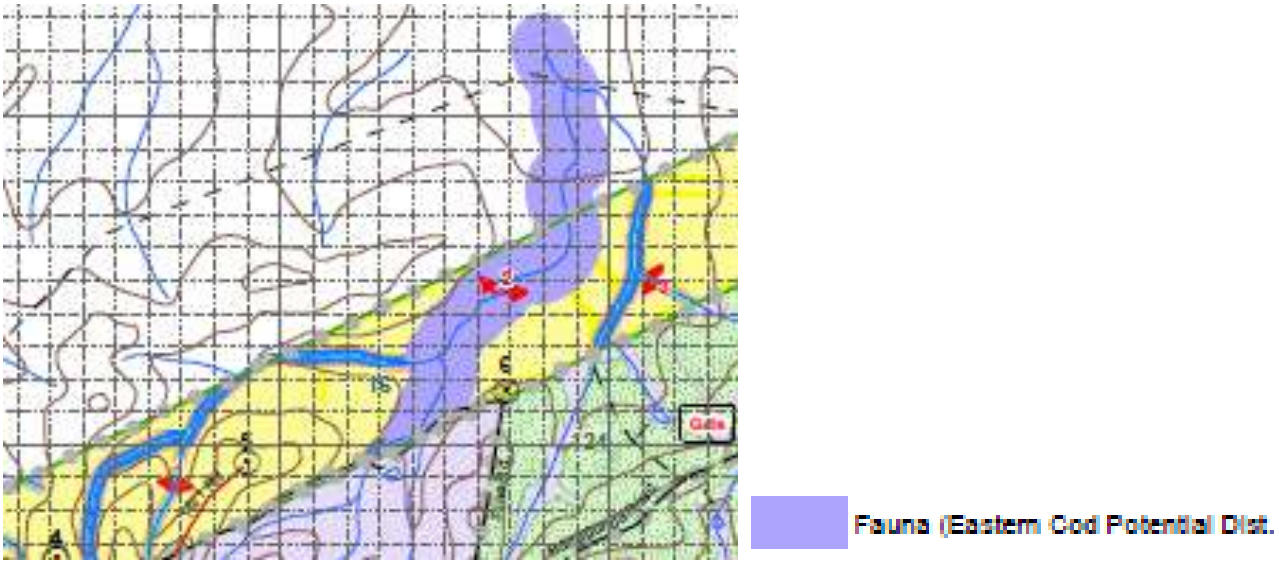
For compartment 16 it is over 3km downstream from the drainage line crossings to Mongogarie Creek, then 5.7km upstream to a bridge crossing and the one "AHA site". The "assessment" is a partially (environmental data is omitted) and wrongly (ticks are used rather than a 4 level grading) completed simplistic proforma filled in for a site in farmland some 9 km away that states *"Note: Creek substrate not suitable for EFC habitat"*. Similarly no useful or meaningful information is provided.

For compartment 16 it is stated:

> *The results of the desk top review resolved that within 2km upstream or 100km downstream of the relevant planning area known habitat or potential habitat occurs. However, field assessment has identified that suitable Eastern Freshwater Cod habitat <u>does not</u> occur within 5km of the harvest area. Wetlands and other water bodies within this compartment comprise Class 2 aquatic habitat as defined in condition 7 of the Fisheries Licence*

It is amazing that the Forester was able to ascertain this given that no assessment was undertaken within 5km of any of the crossings. Site specific work should have been undertaken given that potential habitat for Eastern Freshwater Cod has been identified where one of the crossings was to be created and not far downstream of the other two. The Fisheries Licence 9.3(a) clearly states:

> *Pre-logging/pre-roading aquatic habitat assessments **<u>must be conducted in the vicinity</u>** of any location where specified forestry activities are to be conducted within an exclusion zone that is known or potential habitat of species listed in schedules 4 or 5 of the FM Act.*



Extract from FNSW map for Compartment 16 showing three proposed crossings (red arrows) and potential habitat for the Eastern Freshwater Cod.

Forests NSW have clearly not undertaken their AHAs in the vicinity of the works in compartment 16 and any instream works will be contrary to legal requirements. Again it proves that the AHA process as implemented by Forests NSW is a sham and that Forests NSW have contempt for fish and fish habitat.

The Fisheries Licence 9.4 (a)(b), details the data to be recorded in AHAs, most of which was not complied with in the checklist, most notably:.

> *Habitat description, eg. stream morphology, in-stream and riparian vegetation, water quality and flow characteristics.*

Similarly 9.5(a) requires a minimal level of expertise for those undertaking AHAs;

> *In order to conduct efficient and effective pre-logging and pre-roading aquatic habitat assessments the surveyor must be suitably experienced and trained in the appropriate field. Suitable experience and training is defined as:*
>
> > *i. Experience with aquatic habitat survey work and also familiarity with the types of habitat in which locally occurring threatened fish species occur.*

> *ii. Tertiary biological or ecological qualifications are preferable but not essential if the above criterion is met.*

This was clearly not the case with the person preparing the checklist AHAs for Royal Camp. This ongoing refusal by Forests NSW to employ anybody with expertise in freshwater fish to advise them or undertake Aquatic Habitat Assessments is an obvious problem that must be addressed.

By conducting instream works in potential habitat for the Eastern Freshwater Cod in compartment 16 without having completed an adequate Aquatic Habitat Assessment, Forests NSW have failed to comply with requirements 9.3(a), 9.4 (a)(b), and 9.5(a) of their Fisheries Licence.

1.5. ILLEGAL OPERATIONS AROUND STREAMS

Incidental observations of breaches of Forests NSW's Fisheries Licence in Royal Camp State Forest were reported to Fisheries NSW on 13th August.

When inspected in February there was extensive machinery damage to waterlogged soils within the operational zone that still had not been remediated 5 months later (-29.0008290 152.8824580, -29.0008290 152.8824580)

Streams were briefly assessed on 25 February 2012 and incidentally on the 9 August 2012. On the first inspection it was noted that machinery was causing deep rutting in saturated soils in operational zones near streams, with frequent felling, often deliberate, of trees into riparian buffers. When these areas were subsequently checked on the 9th of August it was apparent that no rehabilitation of operational zones had been attempted in the past 5 months.

The Fisheries Licence (7.8a) prohibits the use of harvesting machinery in any part of a special operational zone (10m around buffer zones) where the soil is saturated, and 7.9(c) requires the reinstatement of disturbed areas.

2 Spotted Gum and 1 ironbark had been dropped into Buffer Strip and a tree marked to delineate riparian buffers knocked over (-29.0007000 152.8827940) Grey Gum felled into Buffer Strip (-29.0013660 152.8801890). Such intrusions were common. Judging by scarp cuts some trees were deliberately felled into streams.

The use of harvesting machinery in the riparian special operational zone (10m around buffer zones) when the soil was saturated, and the failure to rehabilitate rutted areas over 5 months later, are clear breaches of clauses 7.8(a) and 7.9(c) of the Fisheries Licence,

1.6. ILLEGAL STREAM CROSSINGS

During a brief inspection on 9th August it was observed that an illegal crossing of a first order stream had been made and that no attempt had been made to rehabilitate it (-29.0030210, 152.8840950). No aquatic habitat assessment for this crossing was made. This appeared quite recent and it is likely that other illegal crossings have been made.

An illegal stream crossing, apparently constructed while forestry operations were meant to be suspended and while both EPA and Forests NSW were supposedly auditing two identified Koala High Use Areas, one 200m away and another 1km away.

It appeared that the crossing may have been made as part of establishing a containment line for a proposed post logging burn. Part of an adjacent area was recently burnt. It appears that both the burning and the illegal stream crossings occurred while logging operations were suspended and the EPA and Forests NSW were supposedly auditing logging operations in the same area. As well being present while Forests NSW burnt off substantial parts of the logged area of Compartment 15, thereby destroying the evidence of any remaining Koala scats in those areas and any further evidence of Licence breaches, it appears the EPA would have been nearby when the illegal stream crossing works were undertaken.. One of the Koala High Use Areas identified by NEFA is 200m away and the logged Koala High Use Area is 1km away.

The Fisheries Licence establishes that no specified forestry activities (7.4(b), 7.5(b)) or earthworks (7.4(d), 7.5(d)) are to be carried out in stream exclusion or buffer zones. This is also identified Class 2 aquatic habitat within which in-stream works are prohibited (8.1(b)) unless stream crossings are constructed in accordance with General Conditions for In-Stream Works (8.4) which this crossing clearly is not. Neither was there apparently any Aquatic Habitat Assessment prepared as required (9.1, 9.3).

The Threatened Species Licence generally prohibits such works in exclusion zones (5.1 (a)) and also prohibits specified forestry activities in both hard and soft riparian protection zones (5.7(d) (5.7 (d)(j)), except where *"the SFNSW Regional Manager that is responsible for managing the land on which the construction is proposed to be carried out (or a more senior officer), has prepared a report addressing the matters in Schedule 6 of this licence and has authorised the construction in writing"*. It is doubted that the works in this case could have been justified by anybody.

At two localities snig tracks were observed to have been constructed across marked (two bars) unmapped drainage lines (-29.0016280 152.8847670, -29.0016810 152.8791420), though due to other priorities at the time these were not investigated.

The construction of the illegal stream crossings, and the failure to rehabilitate them, breaches numerous clauses (7.4(b), 7.4(d), 7.5(b), 7.5(d), 8.1(b), 8.4, 9.1, 9.3) of the Fisheries Licence and the Threatened Species Licence (5.1 (a), 5.7(d)). That the works were apparently carried out while the area was supposedly being audited by the EPA and Forests NSW is extremely concerning.

1.7. PROMOTING THREATENING PROCESSES

Two Key Threatening Processes occur in Royal Camp State Forest and are ignored in the Harvesting Plans. Both are being aggravated by the logging:

- Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners
- Invasion, establishment and spread of Lantana (*Lantana camara* L. *sens. lat*)

Both these processes are inter-related in that lantana facilitates the spread of Bell Miner Associated Dieback and the opening of the canopy caused by BMAD facilitates the spread of lantana. The NSW Scientific Committee's (2008) final determination for listing 'Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners' as a Key Threatening Process states:

> *"Over-abundant psyllid populations and Bell Miner colonies tend to be initiated in sites with high soil moisture and suitable tree species where tree canopy cover has been reduced by 35 – 65 % and which contain a dense understorey, often of Lantana camara"*

In 2004 Forests NSW identified almost 20,000 hectares of the approximately 100,000 hectares of apparently susceptible forest types in the upper Clarence River were affected by BMAD, approximately one third (6511 ha) has been assessed as 'severe', with '*many dead trees, severe thinning of crowns, low stocking rate of susceptible species and greatly increased mesophyllic ground story vegetation including weeds such as lantana'*. Over 2.5 million hectares of NSW's forests are considered potentially vulnerable.


Bell Miner Associated Dieback is prevalent in Forest type 48 near log dump 22. Bell miners are thriving on the degraded understorey and opened overstorey resultant from logging and are actively chasing other birds away. The dieback and the lantana understorey can be expected to spread into the logged area of the spotted gum forests around log dump 22.

In Royal Camp State Forest both lantana and Bell Miner Associated Dieback (BMAD) have principally affected the moister riparian areas within the compartments. In the worst affected areas there are numerous sick and dead trees. The degraded nature of the riparian areas can be largely attributed to past logging and burning regimes removing a natural moist understorey of predominantly rainforest species and promoting lantana and thus Bell Miners (which exclude other birds and facilitate lerp predation on retained trees and regrowth, often leading to tree death). The extensive soil disturbance, destruction of understorey shrubs and opening of the canopy resultant from these operations will facilitate the expansion of lantana. This will facilitate an expansion and dominance by Bell Miners and the spread of BMAD. The aggressive expansion of Bell Miners into logged areas is already apparent.

Prior to logging the area around log dump 22 had all the appropriate triggers for BMAD; high soil moisture, affected tree species, reduced canopy cover due to past logging, extensive dense understorey areas of lantana, an established Bell Miner colony and dieback of eucalypts. Increased disturbance will obviously result in a spread of BMAD on such a site. It should have been identified in the Harvesting Plan and targeted for restorative management.

The IFOA (2.7.1) requires that in carrying our forestry operations "SFNSW must give effect to the principles of ecologically sustainable forest management as set out in Chapter 3 of the document entitled, "ESFM Group Technical Framework".

Principle 1 is: *Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate.* Relevant specific criteria are:

3.2.1.2 The productive capacity and sustainability of forest ecosystems

- maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions);
- maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles;
- ensure the rate of removal of any forest products is consistent with ecologically sustainable levels;
- ensure the effects of activities/disturbances which threaten forests, forest health or forest values are without impact, or limited.

3.2.1.3 Forest ecosystem health and vitality

- …
- ensure the effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are controlled and are benign;
- restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

The IFO (4.26) also requires:

SFNSW must ensure that the scale and intensity at which it carries out, or authorises the carrying out of, forest products operations in any part of the Upper North East Region, does not hinder the sustained ecological viability of the relevant species of tree, shrub or other vegetation within the part.

Both the forest ecosystems Wet Flooded Gum-Tallowwood and Lowlands Spotted Gum-Box are very poorly reserved and threatened by Bell Miner Associated Dieback. The Wet Flooded Gum-Tallowwood ecosystem is the most severely affected and requires rehabilitation works to control lantana. The severity of BMAD and its spread into Lowlands Spotted Gum-Box is being facilitated by the logging operations.

The gross understorey disturbance associated with logging does promote lantana and this combined with the reduced overstorey does facilitate increased dominance by Bell Miners and thus BMAD. Such logging can not be considered to be maintaining ecological processes, conducive to biomass production, to be ecologically sustainable, without (limited) impact, benign, restorative of forest health, or not to hinder the ecological viability of the natural vegetation. This is destroying the forest ecosystems and forest productivity. Both Forests NSW and the EPA need to drop their pretence that there is no causative link between logging and BMAD. This is an untenable position.

The logging of Bell Miner Associated Dieback affected and susceptible areas is clearly not in accord with any of the principles of ecologically sustainable forest management as defined in the IFOA, and is materially in breach of IFOA conditions 2.7.1 and 4.26. Such areas should be clearly identified in Harvesting Plans and targeted for rehabilitation not increased degradation.

2. APPENDICIES

1. RESULTS OF KOALA SCAT SEARCHES 4&5 AUGUST

COMPARTMENT 15

NAME	LAT	LON	SPECIES	DIAMETER (cm)	SCATS	COMMENTS
RCKT47	29.0013540	152.8861830	Grey Gum	40	2	
RCKT48	29.0014190	152.8861700	Grey Gum	14	1	
RCKT51	29.0020710	152.8860690	Spotted Gum	23	1	
NCKT52	29.0027210	152.8869250	Grey Gum	40	1	
RCKT53	29.0029170	152.8875380	Grey Gum	44	>25	
RCKT54	29.0026730	152.8874660	Grey Gum	60	4	
RCHT55	29.0043530	152.8863750	Red Gum	56	2	marked H
RCHT57	29.0045400	152.8862660	Red Gum	90	1	marked R
RCKT58	29.0046870	152.8865030	Red Gum	39	>30	mother and baby
RCKT59	29.0046130	152.8865780	Red Gum	33	>10	
RCKT051	29.0082860	152.8980530	Grey Gum	60	>20	
RCKT052	29.0081830	152.8979660	Grey Gum	40	4	
RCKT03	29.0081330	152.8979100	Grey Gum	65	5	
RCKT054	29.0082840	152.8982300	Grey Gum	13	1	
RCKT055	29.0080830	152.8978280	Grey Gum	42	1	
RCKT056	29.0080110	152.8974920	Grey Gum	24	>20	mother and baby
RCKT057	29.0081370	152.8973420	Grey Gum	42	3	
RCKT058	29.0081020	152.8973630	Grey Gum	27	1	
RCKT059	29.0081000	152.8973600	Grey Gum	22	2	
RCKT0510	29.0080400	152.8971800	Grey Gum	34	1	
RCKT0511	29.0080690	152.8971650	Red Gum	38	1	
RCKT0512	29.0080180	152.8969600	Grey Gum	44	2	
RCKT0513	29.0079470	152.8968660	Grey Gum	38	2	
RCKT0514	29.0079500	152.8968000	Red Gum	33	2	
RCKT0515	29.0077250	152.8957930	Grey Gum	47	2	
RCKT0516	29.0060100	152.8942240	Red Gum	33	1	
RCKT0517	29.0059770	152.8940530	Grey Gum	39	>20	
RCKT0518	29.0059910	152.8938420	Grey Gum	42	>20	
RCKT0519	29.0057460	152.8939700	Red Gum	-	>50	
RCKT0520	29.0058470	152.8939860	Grey Gum	32	>20	
RCKT0521	-29.0060560	152.8942260	Grey Gum	32	>20	mother and baby
RDKT0522	29.0056770	152.8943070	Grey Gum	24	3	mother and baby
RCKT0523	29.0058160	152.8942810	Red Gum	31	3	
RCKT0524	29.0054360	152.8943820	Grey Gum	16	4	
RCKT0525	29.0054780	152.8944880	Grey Gum	22	>20	
RCKT0526	29.0055880	152.8949180	Red Gum	38	5	
RCKT0527	29.0056110	152.8952490	Grey Gum	40	1	

COMPARTMENT 16

NAME	LAT	LON	SPECIES	DIAMETER (cm)	SCATS	COMMENTS
RCKT61	28.9975020	152.9105970	Red Gum	43	2	
RCKT62	28.9971230	152.9108860	Red Gum	40	1	
RCKT63	28.9966770	152.9119390	Red Gum	39	2	
RCKT64	28.9965570	152.9117880	Red Gum	50	4	
RCKT65	28.9975140	152.9123150	Grey Gum	73	8	
RCKT66	28.9975120	152.9122290	Red Gum	56	>50	mother and baby

NOTES: Some tress were inadvertently not recorded: two trees were recorded as RCKT66 – the missing one a Grey Box with 3 scats, two trees were recorded as RCKT0521 – the missing one a Grey Gum with >8 scats. A number o f other trees were found with scats by other people, some with >20, and records for these will be provided when available. A Koala was observed spotlighting on the night of the 4th, near proposed log dump 26. Time was not necessarily spent confirming tree species – some red gums may have been listed as Grey Gums. There were also 3 Red Gum species. Diameters at breast height are only approximates.

2. **Koala Scat trees recorded on the 9th August.** Note that trees were only searched as far as necessary to determine its category (ie counts were discontinued when further searching was unlikely to alter the allocation to the categories 1-19, >20 and >50).

NAME	**SCATS**	**LAT**	**LON**	NAME	**SCATS**	**LAT**	**LON**
RCK111	>50	-29.0045080	152.8944790	RCK107	5	-29.0043030	152.8947110
RCK122	>50	-29.0039730	152.8951910	RCK113	5	-29.0046230	152.8944720
RCK102	>20	-29.0047340	152.8950510	044	5	-29.0030110	152.8946550
RCK20-1	>20	-29.0049050	152.8953120	RCK105	4	-29.0042710	152.8949430
RCK20-2	>20	-29.0044560	152.8949820	RCK121	4	-29.0040030	152.8952250
RCK108	>20	-29.0043640	152.8946300	RCK101	2	-29.0047340	152.8951440
RCK109	>20	-29.0043620	152.8945960	RCK103	2	-29.0046200	152.8950320
RCK110	>20	-29.0043680	152.8945410	RCK106	2	-29.0043180	152.8948530
RCK112	>20	-29.0044560	152.8945470	RCK124	2	-29.0037790	152.8947920
RCK20-3	>20	-29.0049260	152.8942250	RCK130	2	-29.0032580	152.8946050
RCK114	>20	-29.0060020	152.8940800	RCK131	2	-29.0033960	152.8945870
RCK20-4	>20	-29.0054920	152.8947210	RCK104	1	-29.0044350	152.8949640
RCK20-5	>20	-29.0053350	152.8947660	RCK116	1	-29.0051040	152.8952570
RGK116	>20	-29.0052060	152.8951550	RCK118	1	-29.0045100	152.8956340
RCK117	>20	-29.0052210	152.8952000	RCK120	1	-29.0038610	152.8954050
RCK20-4	>20	-29.0049120	152.8952530	RCK123	1	-29.0038770	152.8949010
RCK119	>20	-29.0042610	152.8956200	RCK128	1	-29.0035150	152.8945780
RCK126	>20	-29.0035420	152.8947680	RCK129	1	-29.0033060	152.8939530
RCK127	9	-29.0036420	152.8948470	RCK132	1	-29.0031840	152.8944590

3. Koala Scat trees recorded on the 19th August.

NAME	LAT	LON	SPECIES	DIAMETER	SCATS
RK14	-28.9873420	152.9391820	Grey Gum	45	>50
RK04	-28.9790800	152.9539820	Grey Box	40	>20
RK09	-28.9807950	152.9505220	Red Gum	34	>20
RK10	-28.9814600	152.9507110	Red Gum	54	>20
RK15	-28.9874490	152.9391420	Grey Box	80	>20
RK05	-28.9790590	152.9538920	Grey Box	26	11
RK19	-28.9814190	152.9512770	Grey Box	40	7
RK06	-28.9797640	152.9523420	Grey Box	33	5
RK18	-28.9854760	152.9410200	Grey Gum	58 stump	4
RK07	-28.9806230	152.9508150	Red Gum	30	3
RK20	-28.9811170	152.9501040	Red Gum	28	3
RK01	-28.9794780	152.9534500	Red Gum	54	2
RK11	-28.9811270	152.9501790	Red Gum	60 stump	2
RK16	-28.9876960	152.9391980	Grey Box	35	2
RK02	-28.9791880	152.9534810	Grey Box	65	1
RK03	-28.9791030	152.9534860	Red Gum	33	1
RK08	-28.9805030	152.9509170	Grey Box	55 stump	1
RK12	-28.9869760	152.9397760	Grey Box	27	1
RK17	-28.9871530	152.9393930	Grey Box	16	1
RK22	-28.9806820	152.9502480	Red Gum	78	1

4. **Results of count of logged trees and retained trees (over 40cm dbhob) in randomly selected 2.3ha area of compartment 15 (south-west from log dump 27). Species of Grey Gum, Grey Box and various red gums were not differentiated and are grouped herein. H= marked hollow-bearing tree, R=marked recruitment tree. Diameters (diameter at breast height over bark) of cut trees were estimated by extrapolation from retained trees.**

SPECIES	TYPE	Estimated Diameter (dbhob) cm	COMMENTS
Grey-Red Gum-Box	H	80	hollows
Spotted Gum	H	74	hollows
Grey-Red Gum-Box	H	68	hollows
Grey-Red Gum-Box	H	66	hollows
Grey-Red Gum-Box	R	66	
Grey-Red Gum-Box	R	64	obvious hollows
Grey-Red Gum-Box	R	64	hollows
Spotted Gum	stump	61	small hollow
Ironbark	stump	61	hollows
Grey-Red Gum-Box	stump	59	
Grey-Red Gum-Box	not yet logged	58	
Grey-Red Gum-Box	stump	56	
Spotted Gum	not yet logged	53	
Grey-Red Gum-Box	stump	52	
Grey-Red Gum-Box	stump	50	
Spotted Gum	stump	50	
Ironbark	R	49	
Grey-Red Gum-Box	R	48	
Grey-Red Gum-Box	stump	47	
Grey-Red Gum-Box	stump	47	
Grey-Red Gum-Box	stump	47	hollows
Spotted Gum	stump	46	
Grey-Red Gum-Box	stump	45	
Spotted Gum	stump	45	numerous hollows
Grey-Red Gum-Box	stump	42	
Grey-Red Gum-Box	stump	42	
Grey-Red Gum-Box	stump	41	
Grey-Red Gum-Box	stump	39	
Grey-Red Gum-Box	stump	39	
Spotted Gum	stump	38	
Grey-Red Gum-Box	stump	38	
Spotted Gum	stump	37	
Spotted Gum	stump	37	
Spotted Gum	stump	36	
Grey-Red Gum-Box	stump	34	
Spotted Gum	stump	34	
Spotted Gum	stump	34	
Grey-Red Gum-Box	stump	34	
Spotted Gum	stump	30	
Spotted Gum	stump	29	
Grey-Red Gum-Box	stump	26	

5. Threatened and significant vertebrate records, Compartments 14, 15 and 16, Royal Camp State Forest, 4-5 August 2012. Recorded by David Milledge (note that some Koala records coincide with previous table)

species	date, Aug.	Cmpt.	Easting GDA94	Northing GDA94	notes
Little Lorikeet *Glossopsitta pusilla*	4-5	15	490179	6791702	6+ pairs over, calling, taking nectar from flowering *Eucalyptus siderophloia*
Brown Treecreeper *Climacteris picumnus*	5	15	490179	6791702	1 pair foraging through on stags and logs, calling
Little Lorikeet *Glossopsitta pusilla*	4	15	489073	6791705	1 pair in canopy, calling
Koala *Phascolarctos cinereus*	4	15	489043	6791682	25+ scats at base of *Eucalyptus propinqua*
Koala *Phascolarctos cinereus*	4	15	488946	6791497	50+ scats at base of *Eucalyptus tereticornis*
Koala *Phascolarctos cinereus*	4	16	491276	6792364	3+ scats at base of *Eucalyptus tereticornis*
Greater Glider *Petauroides volans*	4	15	490250	6791624	1 in *Eucalyptus moluccana*, 100m to south
Greater Glider *Petauroides volans*	4	15	489023	6791163	1 in *Acacia* sp.,on track
Greater Glider *Petauroides volans*	4	15	489077	6791714	1 in *Corymbia henryi* 30m to west
Greater Glider *Petauroides volans*	4	15	489501	6791430	1 in *Corymbia henryi,* 10m to west
Koala *Phascolarctos cinereus*	4	edge of 15	490139	6790943	1 large adult male in small *Eucalyptus tereticornis* on roadside
Greater Glider *Petauroides volans*	4	15	490577	6791432	1 in *Corymbia henryi,* 10m to west
Greater Glider *Petauroides volans*	4	15	491066	6792001	1 in *Corymbia henryi,* 10m to north west
Brown Treecreeper *Climacteris picumnus*	5	15	490143	6791512	pair foraging on stag, about logs, calling
Koala *Phascolarctos cinereus*	5	15	490107	6791391	20 scats at base of *Eucalyptus seeana*, tree marked as R-tree
Koala *Phascolarctos cinereus*	5	15	490209	6791348	20+ scats at base of *Eucalyptus propinqua*
Little Lorikeet *Glossopsitta pusilla*	5	15	490197	6791337	2 pairs feeding on nectar from flowering *Eucalyptus siderophloia*
Glossy Black-cockatoo *Calyptorhynchus lathami*	5	15	490401	6791541	pair foraging in *Allocasuarina littoralis*, calling, some of stand destroyed by logging
Glossy Black-cockatoo *Calyptorhynchus lathami*	5	15	490455	6791580	pair foraging in *Allocasuarina littoralis*, calling, chewed cones under tree, some of stand destroyed by logging
Koala *Phascolarctos cinereus*	5	15	489947	6791056	4 scats at base of *Eucalyptus tereticornis*
Koala *Phascolarctos cinereus*	5	15	489896	6791102	1 scat at base of *Eucalyptus tereticornis*
Koala *Phascolarctos cinereus*	5	15	489678	6791376	50+ scats at base of *Eucalyptus tereticornis*
Koala *Phascolarctos cinereus*	5	15	489715	6791368	21+ scats at base of *Eucalyptus tereticornis*, size difference in scat sizes indicates adult female with young