PRELIMINARY AUDIT OF YABBRA STATE FOREST COMPARTMENTS 162 and 163

Dailan Pugh, December 2009
For North East Forest Alliance

INTRODUCTION

This report is the result of 3 half day assessments of logging operations in compartments 162 and 163 Yabbra State Forest undertaken on behalf of the North East Forest Alliance (NEFA). These operations took place next to a property owned by the principal author and thus the condition of these forests prior to logging is well known. The first half day inspection was undertaken by Dailan Pugh and John Corkill. Based on the observation of numerous breaches a further assessment was undertaken by Dailan Pugh in company with zoologists David Milledge and Georgia Beyer and botanists Annette McKinley, Nan Nicholson and Andrew Murray.

These inspections were only of a preliminary nature as in the time available it was only possible to inspect limited areas and it was not possible to quantitively audit canopy retention prescriptions and feed/habitat tree retention prescriptions (the later because of lack of marking up). Further inspections will be made as time permits.

This brief audit has revealed that there has been a systematic failure by Forests NSW to identify and protect from logging the required areas around unmapped streams, and trees required to be retained as critical food resources and den sites for threatened species. The application of a hot post-harvest burn has resulted in the destruction of much of the remaining fauna habitat that should have been retained. In total 54 statutory licence conditions, variously applied under four acts of parliament, were found to have been breached, many on multiple occasions and some consistently.

There has been excessive canopy removal in contravention of Ecologically Sustainable Forest Management principles and a failure to appropriately assess and protect unmapped streams in contravention of the regional Ecologically Sustainable Forest Management Plan. In particular, the application of maximum utilization logging in dieback areas contradicts the fundamental basis of ecological sustainability and will aggravate the severe problems resultant from previous logging.

As far back as 1980 the then Forestry Commissioner identified that logging prescriptions were being routinely breached. Nearly 20 years ago, in 1990, Justice Hemmings granted John Corkill an injunction against Forests NSW (then known as the Forestry Commission) in the nearby Ewingar State Forest, stating:

Regretably, there is conceded to be a history of departure by the Commission from not only its own approvals on the logging of this area, but apparently a continuous avoidance of the obligations imposed by the Environmental Planning and Assessment Act. In such circumstances, it is difficult to have confidence that, unless restrained, the Commission will observe its statutory duties.

Forests NSW thereafter continued to go on breaching its legal requirements, even when it was briefly governed by the North East State Forests Harvesting Advisory Board (HAB). The HAB was established in 1996 to oversee logging operations in this region, particularly of Interim Deferred Forest Areas (IDFAs), in the period leading up to the completion of the Regional Forest Agreement. Georgia Beyer and I were members of the HAB.

The first IDFA compartment logged was compartment 68 in the then Whian Whian State Forest (SF), despite assurances by Forests NSW (then State Forests) that it would be a model operation, a subsequent inspection by the HAB in 1997 found a variety of breaches, including that:

- 20m buffers around rainforest were not implemented and were logged;
- habitat and recruitment trees had not been marked;
- logging debris had not been removed from around the base of habitat trees; and
- a 20 m stream exclusion zone was not marked and was logged.

In only the second prosecution of Forests NSW by DECCW (then NPWS), Forests NSW were found guilty and fined over $6,000 for felling a tree into rainforest and failing to apply a 20 metre buffer on a stream.

In the interim they had logged two other IDFA compartments. In compartment 77 of the then Whian Whian SF DECCW found *"failure to remove debris from around habitat trees, failure to mark habitat trees and, failure to mark habitat recruitment trees"*. After NEFA complaints about logging operations in the third IDFA compartment, Forests NSW undertook an audit which confirmed 6 breaches of harvesting plan conditions in compartment 286 of Yabbra SF, most significantly relating to marking and retention of Koala food trees and habitat trees.

While this was going on, NEFA (principally Georgia Beyer) found other breaches of requirements in non-IDFA compartments, which were subsequently admitted by Forests NSW, including

- logging of 11 compartments without undertaking flora and fauna surveys as required by the Conservation Protocols and NPWS licence requirements;
- logging in fauna and riparian exclusion areas, and breaches of habitat tree prescriptions, in compartment 671 of Ewingar SF;
- logging of a Yellow-bellied Glider Feed Tree, breaches of habitat tree retention requirements and logging of an unmarked filter strip in compartment 661 of Ewingar SF; and,
- roading through a threatened plant exclusion area (and threatened plants) in Gibberagee SF.

NEFA was only able to audit a sample of Forests NSW's operations over the less than 2 years the HAB operated for, indicating that a culture of non-compliance was widespread and entrenched in Forests NSW's management processes.

Aside from compartment 68 in Whian Whian SF, Forests NSW were never prosecuted for the other breaches. Since then the Regional Forest Agreement process was completed and the Integrated Forestry Operations Approval was implemented. Over the past decade, across the whole of NSW, DECCW have only prosecuted Forests NSW for a single breach under their Environment Protection Licence, and have never prosecuted them under their Threatened Species Licence.

This year is the North East Forest Alliance's 20th anniversary. For NEFA's first decade I audited numerous forestry operations. Legal constraints have significantly increased since I started, though many licence conditions are tokenistic. Harvest planning has significantly improved from the mess it was in a decade ago. Unfortunately this audit reveals that the poor application by Forests NSW of its legal obligations continues unabated. Due to Forest NSW's apparent refusal to apply suites of licence conditions, compliance has deteriorated.

Due to its lax enforcement of water pollution and fauna and flora licence conditions, the Department of Environment, Climate Change and Water (DECCW) has allowed Forests NSW's culture of non-compliance to grow and flourish.

In preparing this report I attempted to gain guidance from DECCW as to the application of current marking up requirements for exclusion areas, particularly along streams. After three phone calls, and much persistence, I called the Environment Line (as directed) and was told that DECCW officers *"will not discuss the requirements of logging operations near a water way with you"*.

It has now become almost impossible for a member of the general public to pursue breaches of licence conditions because they simply meet obfuscation from Government authorities and have been denied any avenues for legal redress.

Dailan Pugh OAM,
December 2009

OUTCOMES OF PRELIMINARY AUDIT

Documents relied upon, their legal authority, and breaches identified:

HP: Yabbra State Forest – Compartments 162 & 163, Operational Harvest Plan No.3069. Breaches observed of conditions 2.1, 4.2, 7.1, 9.3, and 10.

IFOA: Integrated Forestry Operations Approval for Upper North East Region, under the Forestry and National Park Estate Act 1998. Breaches observed of conditions 1.5, 2.7.1, and 4.26

TSL: Threatened Species Licence, under the Threatened Species Conservation Act 1995. Breaches observed of conditions 1.2 (d), 5.1 (f), 5.2.1, 5.2.2, 5.4(e), 5.6(c), 5.6(d), 5.6(g)i, 5.6(g)ii, 5.6(g)iii, 5.8(a)ii, 5.8(j), 5.9(a), 5.9(c), 5.9(g), 5.9(h), 5.15, 5.16 (a), 5.16 (b), 5.17 (a), 6.12(d), 6.14(c)ii, 6.17(f), and 6.17(g)iv.

EPL: Environmental Protection Licence, Appendix A, Schedule 4, under Environment Operations Act 1997. Breaches observed of conditions D6, D15,D17, D19B, D20, D20C, D20J, D20R, D20S, D20T, D21, D22, D23, G34, G35, H38, H39, H45, and H70. EPL Appendix A, Schedule 5; Breaches observed of condition I37.

FL: Fisheries Licence, under the Fisheries Management Act, 1994. Breaches observed of conditions 6.1(c), 7, 7.2(b)i, 7.2(c), 7.4(b), 7.5(b), and 7.5(m)ii.

1. Excessive canopy was removed and large clearings (gaps) were created, including in Koala and Black-striped Wallaby habitat, contrary to statutory silvicultural prescriptions and threatened species requirements (breaches of IFOA 1.5, TSL 1.2(d), 6.14(c)ii, HP 2.1, 4.2, and 10). Other Threatened fauna species adversely affected by these gaps included the Glossy Black-cockatoo and Yellow-bellied Glider.

2. Most remaining healthy trees were removed from forests affected by Bell Miner Associated Dieback (resultant from previous logging operations), having significant degrading impacts on forest health, ecosystem functioning and viability and forest productivity. Many retained affected trees had then succumbed to the hot post-harvest burn. This logging and “management” is clearly not in accord with any of the principles of ecologically sustainable forest management as defined in the IFOA (breaches IFOA conditions 2.7.1 and 4.26).

3. A portion of the claimed plantation area in compartment 162 is rainforest replanted with Flooded Gum in a previous logging operation, within this part it was a rainforest logging operation.

4. The post-logging burn was extensive and extremely hot, resulting in the incineration of many retained trees (including rarely marked habitat trees), the loss of most understorey vegetation and the loss of important fauna habitat attributes such as stags, large logs and the litter layer throughout the majority of the compartments. There was no apparent attempt in these areas to comply with the requirement to maintain an understorey mosaic with significant areas of dense understorey vegetation and to minimise impact on large fallen logs, despite this being identified as a specific requirement for the Black-striped Wallaby (breaches HP 9.3, 10 and TSL 5.16(a), (b), 5.17 (a)).

5. There was also no apparent attempt to avoid burning of filter strips and protection zones (breaches EPL G34) or to implement erosion control measures in burnt areas (breaches EPL G35), with numerous examples of fire incursion into protected vegetation and drainage lines.

6. Approximately half of the Dunn's White Gum Endangered Ecological Community was burnt during the post-logging burn, which also intruded into rainforest boundaries in many places, killing a number of rainforest trees. This practice is likely to cause regression of the rainforest edge, including loss of rainforest trees and other vegetation due to desiccation and wind-throw, and facilitate weed invasion. The subsequent loss of rainforest habitat can be expected to impact severely on rainforest-dependent Threatened species, including the Richmond Range Frog, Marbled Frogmouth, Wompoo Fruit-dove and Black-striped Wallaby, which have significant populations in the area.

7. Forest Management Zone exclusion boundaries were generally accurately applied, although at a number of localities trees were felled into protection zones and burning trees had collapsed into them. Unjustified machinery incursions were made at several sites (breaches TSL 5.4e, 5.8j.

8. There was a systematic failure to mark the boundaries of exclusion areas, except adjacent to roads (breaches TSL 5.1 f). This "drive-by" compartment mark-up makes a farce of protection requirements, resulting in exclusion boundaries marked 100m away from the actual exclusion area, such as along Section E Road. Much of the marking-up was also observed to have taken place **after** the logging and post-logging burn operations, which is clearly a breach of requirements.

9. Ridge and Headwater habitat exclusion areas were not designed to connect 3rd order streams (breaches TSL 5.8(a)ii)

10. With few exceptions Forests NSW has failed to mark hollow bearing trees and recruitment trees, except near roads (breaches TSL 5.6 (g) iii). There is thus no evidence that Forests NSW have complied with retention requirements, and in some areas it appeared that trees required to be retained were felled (breaches TSL 5.6 c). In some cases where recruit trees were marked, these had little prospect of functioning adequately as they were too young, suppressed, had poor crowns and/or were located within a few metres of mature retained trees (breaches TSL 5.6 d).There has been a widespread failure to remove or flatten logging debris from within 5m of the base of retained trees, resulting in funeral pyres and the death and collapse of many large hollow-bearing trees (breaches TSL 5.6 g i, ii).

11. There has been a systematic failure to identify and mark the required: eucalypt feed trees; Koala feed trees and high use areas; Yellow-bellied Glider feed and den trees; the den sites of Brush-tailed Phascogale; and the nest sites of Glossy Black Cockatoo, Sooty Owl, and Powerful Owl (breaches TSL 5.2.1, 5.2.2, 5.6(g), 6.14(c)ii, 6.17(f), 6.17(g)iv). This failure is exemplified by Forests NSW's failure to identify and mark a single Yellow-bellied Glider sap-feed tree, with 11 being observed and documented during the current brief audit and a number of others observed. It is evident that an adequately trained person did not conduct a thorough search for, record and appropriately mark the required habitat trees, feed, den and nest trees (breaches TSL 5.2.1). As a result many of the trees required to be retained have most likely been felled and many animals wrongly killed.

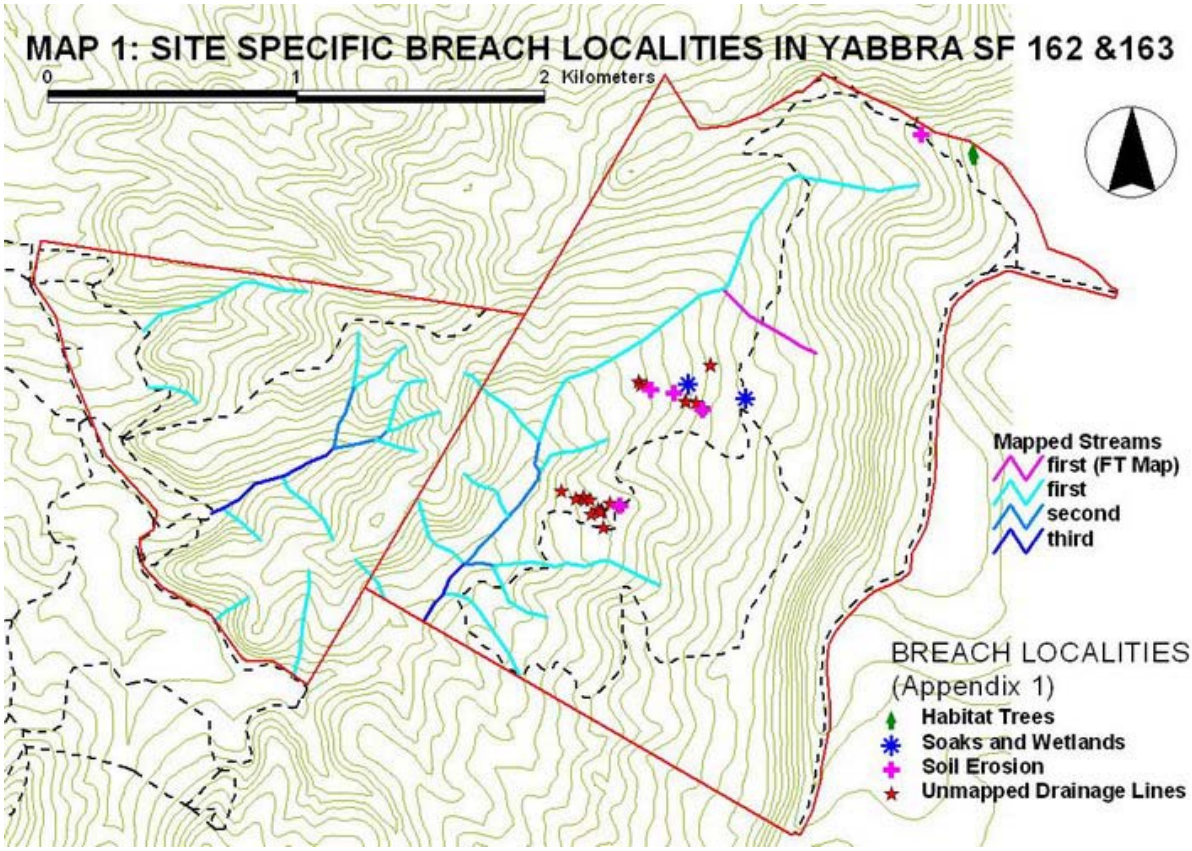
12. The endangered Black-striped Wallaby was recorded by Forests NSW at two sites in the logging area, and is likely to be more widespread. Forests NSW failed to abide by the species-specific requirements to retain 50% of canopy and comply with existing conditions relating to minimizing understorey and ground disturbances (breaches TSL conditions 1.2 (d), as well as requirements 5.9(h),5.16 (a), 5.16 (b), and 5.17 (a)).

13. Bell Miner colony establishment was noted to be widespread throughout Compartments 162 and 163 and appeared to have been favoured by the logging and burning operations. It can be expected that the threatening process associated with colonies of this species (BMAD) will cause further deaths of trees, severely retard forest recovery and result in the loss of substantial areas of threatened species' habitat in the mid to long-term.

14. A large number of modelled streams, delineated as Forest Management Zone 8, are mapped in the compartments. Forests NSW's Ecologically Sustainable Forest Management (ESFM) Plan for this region requires that the modelled streams be assessed in the field and any found to be unmapped streams appropriately protected. However, it appears that Forests NSW failed to identify or protect any unmapped streams (breaches ESFM Plan and HP 7.1)

15. No apparent attempts were made to delineate or implement the required protection zones along unmapped drainage lines (breaches EPL D6, and FL 7).

16. This limited audit documented 22 tree stumps within areas adjacent to unmapped drainage lines which should have been excluded from logging to protect water quality (Map 1). This sample indicates that there could be in the magnitude of a hundred trees illegally felled across the area of Compartments 162 and 163 (breaches EPL17, 20C and FL 7.4b, 7.5b).



17. This limited audit documented 3 sites where snig tracks had caused extensive soil disturbance to areas adjacent to and across unmapped drainage lines (Map 1), without any attempt to restore ground cover to limit stream pollution (breaches EPL D19B, D20J and FL 7.5 m (ii)). At one site cross banks drain directly into the centre of the drainage line.

18. Buffers (operational zones) to areas adjacent to streams that are supposed to be protected from soil disturbance were extensively damaged by machinery (breaches

EPL 20R), with no apparent attempt to undertake the required rehabilitation (breaches EPL 20T). It is unlikely that these were documented (breaches EPL 20S).

19. Similarly no apparent attempt was made to delineate or protect drainage depressions from significant machinery disturbance (breaches EPL D15, 20, 20C, 21, 22 and 23)

20. *Philoria richmondensis* has been recorded in the adjacent catchment (DECCW Atlas of NSW Wildlife, pers. obs.) and potential habitat occurs in Compartments 162 and 163. There appeared to be no targeted survey for this species (*Philoria loveridgei* was wrongly identified as requiring survey in the pre-logging survey report), recording of, or appropriate marking of, permanent soaks and seepages that are core habitat for this species (breaches TSL condition 5.2.1)

21. In relation to 20 above, two sites (providing potentially suitable habitat for *Philoria* frogs) were located during the audit which met the definition of wetlands (Map 1). Forests NSW failed to mark these sites (and probably others) in the field, include them on harvesting plans, or exclude harvesting activities from within 10 metres of either site. Instead they were heavily impacted by machinery, logged, burnt and consequently severely degraded (breaches FL 7.2.b (i) and c, TSL 5.9 a, c, and g).

22. At one site a snig track has been constructed across a drainage line, with crossbanks directing water directly into the centre of the stream, another snig track was observed to be channelling water for 96m down a steep slope, and drainage off a road is being diverted directly into a stream (Map 1, variously breach EPL 38, 39. 70, and EPL Schedule 5 l 37)

23. Despite there being no grazing occupational permits, and no fencing to exclude cattle from vulnerable streams, wetlands, sensitive vegetation, key fauna habitats or adjacent private properties, the compartments are being used to fatten cattle (breaches TSL 5.9(h), FL 6.1c).

RECOMMENDATIONS

1. To overcome an apparent culture of non-compliance the respective Agencies whose requirements have been breached must investigate and prosecute all breaches of legal requirements.

2. Forests NSW need to prepare a rehabilitation plan, approved by DECCW, for the Bell Miner dieback areas The regeneration of the bellbird dieback areas needs to be annually monitored, with active control of lantana regeneration and restoration of a prescribed stocking of appropriate local native species, using plantings where required.

3. The rainforest within the plantation area needs to be retyped as rainforest and excluded from the net harvest area.

4. Forests NSW need to urgently review and dramatically improve their compliance with pre-logging compartment mark-up requirements and the ability of their staff to identify the required features.

5. DECCW need to urgently audit the effectiveness of pre-logging surveys and compartment mark ups in identifying key fauna habitats, nest sites, den sites and other features of significance for fauna and, if, as suspected, they are found to be grossly ineffective, DECCW need to identify specific measures to rectify this.

6. DECCW need to belatedly apply the principles of adaptive management by undertaking pre and post logging monitoring of key species, such as Yellow-bellied Glider, Black-striped Wallaby, Koala and Marbled Frogmouth, to determined the efficacy of current prescriptions and changes required to make them achieve specific goals.

7. Forests NSW need to employ an expert appointed by DECCW to undertake a species-specific survey for Black-striped Wallabies in the vicinity, ascertain the local viability of the species, and identify appropriate ameliorative measures to rehabilitate their habitat to a healthy condition.

8. Forests NSW need to prepare and implement a rehabilitation plan approved by DECCW and NSW Fisheries for all wetlands, wetland buffers, riparian filter strips, riparian protection zones and riparian operational zones illegally subjected to forestry activities or where restoration works have not yet been implemented.

9. In future Forests NSW should be required to map all unmapped drainage lines when preparing harvesting plans and apply these to identify stream orders for planning purposes, including application of prescriptions.

10. Forests NSW must be required to urgently audit erosion control measures applied to roads and snig tracks throughout the compartments and implement remedial erosion control measures without further delay.

11. Grazing should be excluded from the area.

1. SILVICULTURAL REQUIREMENTS

The silvicultural prescription identified in the Harvesting Plan is Single Tree Selection, meaning that no more than 40% of the basal area of trees 20cm or more may be removed (IFOA 1.5, HP 2.1.). The IFOA (1.5.10) identifies that "Single Tree Selection" refers to a silvicultural practice, which in relation to a tract of forested land has the following elements:

> (a) trees selected for logging have trunks, that in cross-section, measured 1.3 metres above ground level, have a diameter (including bark) of 20 cm or more (that is, a diameter at breast height over bark of 20 cm or more); and
> (b) trees are selected for logging with the objective of ensuring that the sum of the basal areas of trees removed comprises no more than 40% of the sum of the basal areas of all trees existing immediately prior to logging within the net harvestable area of the tract.

The HP (4.3) identifies the expected BA removal to be 35%, acknowledging that *"BA removal will exceed 40% in some localised areas, but will be balanced by non harvest areas and tree retention across the tract"*. It is clearly identified that averaging must be limited to the net harvest area and trees less than 20cm must not be selected for removal. The STS Management objective is given as (HP 4.3):

> *…removing trees that have reached their most economic end use and harvest poorer quality and less vigorous trees to concentrate growth on the more vigorous trees while promoting low level site disturbance for regeneration.*

This prescription is given greater weight by the DECCW species-specific requirement for the Black-striped Wallaby (as identified in the Harvesting Plan 10) for *"Removal of no more than 50% canopy cover in the net harvest area"*. The Black-striped Wallaby was identified at 2 localities in compartments 162 and 163.

The IFOA (1.5.3) notes that the approval only applies to logging operations where trees are selected for harvesting using Single Tree Selection or Australian Group Selection (AGS). The IFOA (1.5.10) notes that "Australian Group Selection" refers to a silvicultural practice, which in relation to a tract of forested land has the following elements:

(A) in any one harvesting operation:

> (a) one or more groups of trees are selected for logging on a part or (where more than one group of trees is selected) parts of the tract, and
> (b) the area of each group of trees selected for logging, as measured from the outermost crown edges of trees standing on the outer boundary of the group prior to logging, is no more than 0.25 hectares, and
> (c) the total area selected for logging within the tract, being the sum of each area of each group of trees selected for logging on the tract (measured in accordance with paragraph (b)), is no more than 22.5% of the net harvestable area of the tract;

The Harvesting Plan (HP 10) identifies that "*The compartment (Ur_162) is an intermediate use compartment"* for Koalas, and thus that in accordance with TSL condition 6.14 that *"No AGS permitted in preferred Koala Forest Types"*.

It is apparent that throughout large tracts of the net harvest area that significantly more than 40% of the canopy has been removed in contravention of the HP 2.1 and 4.3 and IFOA 1.5. Because this is averaged across the net harvest area this was unable to be quantified in the time available. However it is evident that numerous large gaps have been created throughout compartments 162 and 163. Examples of these are documented below. Thus it is apparent that the silvicultural prescriptions of the HP 2.1 and 4.3, along with the TSL condition 6.14, have been breached in that AGS has been applied.

Photos of gaps created in Koala habitat in compartment 162, near Koala and Black-striped Wallaby records (note that the green growth on the ground is weeds:

Photos of gaps created in Koala habitat in compartment 162, near Black-striped Wallaby record in 163:

Gap in compartment 163. the tree to the right in the midground is a Yellow-bellied Glider sap-feed tree and the bush behind is the Brush-tailed Phascogale exclusion area.

Bell Miner Associated Dieback (BMAD) has affected expansive areas at lower elevations within the compartments, affecting most of compartment 163. In these areas here are numerous sick and dead trees. Contrary to allowed silvicultural methods, Forests NSW have concentrated on removing the healthy large trees, with the added stress of logging and post-logging burning killing many of the retained trees.

The HP (4.2) states:

> *Lantana & shrubby understorey is providing conditions suitable for occurrence of Bell Minor* (sic) *Associated Dieback (BMAD). A significant section of the harvest area has been adversely affected. There are many dead stems and the crowns of some of the remaining trees are thin and appear unhealthy. BMAD affected areas will have unhealthy merchantable trees removed during this operation*.

The degraded nature of these stands can be largely attributed to past logging and burning regimes promoting lantana and Bell Miners (which facilitate lerp predation on retained trees and regrowth). The removal of most of the healthiest trees surviving and the likely promotion of lantana due to extensive understorey removal, is likely to severely degrade what is left. These impacts will be compounded by increasing severity of droughts due to climate change (which is likely to already be a factor in the spread of this problem).

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.*

By no stretch of anyone's imagination can logging of these dieback areas be considered "ecologically sustainable". As is particularly obvious in compartment 163, logging is being undertaken in dieback areas in contravention of silvicultural requirements to apply single tree selection, retain 60% of basal area of trees above 20cm dbh, and concentrate growth on the more vigorous trees while promoting low level site disturbance for regeneration. Rather logging is based on a maximum economic utilization basis. Thus it is apparent that the logging is in contravention of the silvicultural prescriptions of the HP 2.1 and 4.3, and the limits to silvicultural prescriptions specified in the IFOA (1.5.3).

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. This logging is clearly not in accord with any of the principles of ecologically sustainable forest management as defined in the IFOA, and is clearly in breach of IFOA conditions 2.7.1 and 4.26.

Photos: examples of logging in Bell Miner Associated Dieback areas in Compartment 163. Note the size of the gaps and the small stature and crowns of retained trees. In such areas most of the larger trees have been removed, leaving mostly poor, suppressed and sick trees. It appears that many trees have died as a result of the forestry activities. The understorey has been obliterated by machinery disturbance and an intense post-logging burn. The vegetation to the left in the first photo, and in the background of the third photo, are exclusion areas, indicating the structure of the vegetation prior to logging.

Plantation

A small area is identified as a Flooded Gum plantation. No more than 60% of basal area of trees in a stand may be removed (HP 4.3.). The Plantation Thinning objective is “remove

sub-dominant and occasional co-dominant mature trees to concentrate growth on the best form dominant and co-dominant trees”

Part of the mapped plantation area is clearly rainforest that was heavily logged in the past, leaving a variety of canopy trees, and under planted with Flooded Gum. Thus the operations here are actually a rainforest logging operation with most of the remaining canopy formed by rainforest species. This part of the area should not have been identified as a plantation and needs to be retyped and rehabilitated.

Photos: Logging operation in rainforest mapped as plantation, note the retention of the large fig as a habitat tree.

2. BURNING

SFNSW have subjected most of net harvesting area to an intense post-logging burn. At the time of the first inspection on 30 October 2009 many stumps and logs were still smouldering. On the 30 November, with extreme fire weather throughout most of NSW, a tree stump was still smoking within sight of Section E Road. Many large old trees, some of which were retained habitat trees, were burnt out and many areas of dense vegetation were reduced to ashes. Because of the presence of rainforest, fire was successfully excluded from the bulk of the FMZ 2 and 3 areas, though was often allowed to burn into the rainforest.

Photos show a stump still smouldering on the 30 November, where logging and fire has intruded into the rainforest ecotone, and the burnt out base of a Red Cedar on the boundary of the rainforest (note the adjacent snig track). Also see photo in next section where fire has burnt into a rainforest boundary.

Burning was undertaken without due regard to erosion mitigation. There was no apparent attempt to avoid burning of filter strips and protection zones in contravention of EPL prescription G34 (for examples, see photos in Section 6). There was no indication that Forests NSW had made any attempt whatsoever to implement erosion control measures where filter strips and Protection Zones had been burnt, in contravention of EPL prescription G35 (for examples, see photos in Section 6).

Photo of burnt drainage line, note the retained tree collapsed across drainage channel due to being burnt out at the base, and the charred remains of an incinerated tree to the right.

Exclusion areas were established around mapped stands of Dunn's White Gum on the basis that it is an Endangered Ecological Community (EEC). Two of the stands, representing over half of the mapped occurrences, were burnt in the post logging burn. An extremely large Dunn's White Gum, with a diameter (DBHOB) of over 1.9 metres, was burnt down (Photo below). The rainforest understorey of these areas suffered high mortality, which will result in increased promotion of lantana and degradation of the ecosystems (photo below).

Burning is required to be conducted in a manner which promotes and maintains an understorey mosaic which includes significant areas of dense understorey vegetation. As shown in photos, there does not appear to have been any attempt to maintain an understorey mosaic in the net logging area east of Oaky Creek, including in the vicinity of the Black-striped Wallaby record.

The HP 9.3 emphasises the TSL condition 5.16(a) which states that *"The habitat requirement of threatened species must be taken into account when instigating hazard reduction burns to promote and maintain an understorey mosaic, significant areas of dense understorey vegetation and to minimise impact on large fallen logs".* This is in accord with TSL 5.16, and is particularly important in these compartments because of the presence of Red-legged Pademelon, Red-necked Pademelon and Black-striped Wallaby, all of which seek refuge and food in dense vegetation, with the latter two moving out into open areas near dense vegetation to feed at night. There is no evidence that there was any attempt to account for the habitat requirements of these species in the post-logging burn.

The species-specific licence condition (granted under TSL 1.2) and the Harvesting Plan (HP 10) specifically requires the application of TSL conditions 5.16 and 5.17 for the Black-striped Wallaby. This requires that hazard reduction work must be conducted in a manner which promotes and maintains an understorey mosaic (including significant areas of dense understorey vegetation) and minimizes the impact on large fallen logs. This prescription has not been applied and large areas have been made devoid of dense refuge areas from predators and innumerable large logs have been reduced to ashes

The exclusion area adjacent to the Black-striped Wallaby record in compartment 163 was not burnt, though the surrounding area was heavily burnt. The obliteration of food resources and refuge areas within the territories of Black-striped Wallabies in this vicinity and is likely to have had a significant impact on these wallabies in the short term and long term.

To the west of Oaky Creek the immediate area around the locality record of Black-striped Wallaby was not burnt, though extensive burning was observed in other areas inspected near the record which are likely to comprise habitat for this species (see photos in Section 1).

Photo, growth of dense weeds (mostly Inkweed and Thistles) following intense post logging burn are likely to significantly diminish food resources for the herbivores such as the Black-striped Wallaby due to their out-competing and suppressing preferred food plants.

3. EXCLUSION AREAS

Aside from riparian protected areas, there are a variety of exclusion areas required to be implemented in these compartments:

- Dunn's White Gum (Endangered Ecological Community),
- Wildlife corridor 50m each side Oaky Creek (FMZ 2),
- High Conservation Value Old Growth (FMZ 2, 3a),
- Rainforest (FMZ 2, 3a),
- Rocky Outcrops and cliffs (FMZ 3a)+ 20m buffer,
- Ridge and Headwater Habitat (40m&80m),
- Dams plus 10m buffer,

Exclusion areas now have soft boundaries as, under certain limitations, machinery can enter them to fell trees and remove trees "accidentally" felled into them.

No incursion of logging into these areas was observed in the area inspected, though a number of examples of trees being felled into exclusion areas were observed, and a number of trees burnt out in the post logging burn collapsed into the exclusion areas.

Limited machinery incursions are allowed for the purpose of felling and removing trees, though machinery incursions with no apparent justification were observed. These are breaches of TSL conditions 5.4e, 5.8j.

Photos illustrate machinery incursions into rainforest and "ridge and headwater" habitat. In the first one the foreground tree on the right is marked as the exclusion area boundary, a tree was felled into it and in the post logging burn the tree head has burnt out the base of the Black Booyong in the background. Both sites suffered extensive , and apparently unnecessary, soil disturbance.

All exclusion zone and buffer zone boundaries are required to be marked in the field. Aside from the private property boundary, the only boundary marking observed for any exclusion areas was in the vicinity of roads. No marking of boundaries of any exclusion areas away from roads was observed. This made it hard to audit the operations, as a consequence many breaches may have been missed. The obvious failure to adequately mark boundaries of exclusion areas is a breach of the requirement 5.1(f) of the TSL.

The most astounding example of marking of rainforest and FMZ 2 boundaries occurs along Section E road, where marking indicates an exclusion area boundary up to 100m away. The markings on a recently felled stump (where the arrow extends on to the top of the stump, see photo) and recently burnt trees (where the marking is still evident after the bark was burnt, see photo) indicate that these markings were implemented after the logging and post-logging burn. This perception is highlighted by the fact that such marking up of the same exclusion areas was not seen in more remote logging areas where no attempt was made to delineate exclusion area boundaries except where they crossed roads.

Photos show marking of exclusion boundaries up to 100m away from the actual boundaries. In the first photo the pink arrow clearly extends onto the top of the cut stump (though note that it doesn't show clearly in photo). In the second the marking appears to have been applied after the post logging burn. The third photo shows the distance to the rainforest exclusion area (seen in the background), where there was no marking of the actual boundary.

The 80m wide Ridge and Headwater habitat links through to the adjacent private land, nowhere near a stream or drainage line. It thus fails to attempt to connect third order streams as required by TSL 5.8(a)ii.

4. FAUNA REQUIREMENTS

There are general requirements under the Threatened Species Licence (TSL) relating to the retention of animal habitat trees in these compartments, with requirements to retain:

- 10 hollow-bearing trees per 2 ha,
- 1 recruit per hollow bearing tree,
- Identified Glossy Black Cockatoo *Allocasuarina* feed trees,
- six eucalypt feed trees per two hectares
- Yellow-bellied Glider and Squirrel Glider sap feed trees

Under TSL licence condition 5.6 c, 10 hollow-bearing trees per 2 hectares are required to be retained due to the importance of retaining the homes of the multitude of hollow-dependant species. Under TSL licence condition 5.6 d a recruitment habitat tree is required to be retained for each habitat tree, so that when the retained habitat tree dies (hopefully of old age) the recruitment tree will be old enough and healthy enough to provide the required homes for hollow-dependent species. The TSL licence requires that the recruitment trees should be in the mature or late mature stages of life so that they will be old enough (over 100 years for small hollows and 200 years for large hollows) to have hollows when required, and should not be suppressed, have minimal butt damage and have good crown development.

Due to the poor mark-up and lack of time only two marked habitat trees were documented (Map 1, Appendix 1), though others were observed. The principal problem identified was that the marked recruitment trees are suppressed regrowth trees, often with poor crown development and so close to the habitat tree that they are likely to be damaged by falling branches. This is token retention, as, even if the recruitment tree overcomes its stunted growth, it will not be large enough to fulfil the functions of the habitat tree when it dies.

TSL licence condition 5.6 (g) iii requires retained habitat trees to be marked for retention except where the understorey is impenetrable. Contrary to this requirement it appears that, with few exceptions, habitat and recruitments trees were not marked in the field, except near the principal roads and one side track. This lack of marking made it difficult to audit the retention requirement and apparently for SFNSW to ensure that the required trees were retained. At a number of sites large stumps made it apparent that habitat trees had been felled despite there apparently being insufficient habitat trees retained in the vicinity. As evidenced by the retained areas (including the adjacent property) and the landholder's personal knowledge of the area, some places may have been impenetrable, though the majority of the area certainly was not.

Similarly, no marked eucalypt feed trees were observed, even in areas where there were no hollow-bearing trees left.

Photos. The first photos show a habitat tree and recruitment marked for retention, note the small size of the recruitment tree which had poor crown development (tree on right in second photo) due to its growth being suppressed by the adjacent habitat tree. In the 3rd photo the large stump indicates a tree that should have been retained and marked as a habitat tree as there were no retained hollow-bearing trees in sight.

During logging and post-logging burning damage to retained trees must be minimised to the greatest extent practicable by directional felling and minimising, removing and flattening debris within 5 m of the tree, in accordance with TSL 5.6 (g) i, ii. There does not appear to have been any deliberate attempt to minimise fuel build-up around habitat trees, if anything, the converse appears to be the case. The lack of tree marking and intensity of the post-logging burn make it impossible to quantify, though it is apparent that a significant number of habitat trees were burnt out in the post-logging burn.

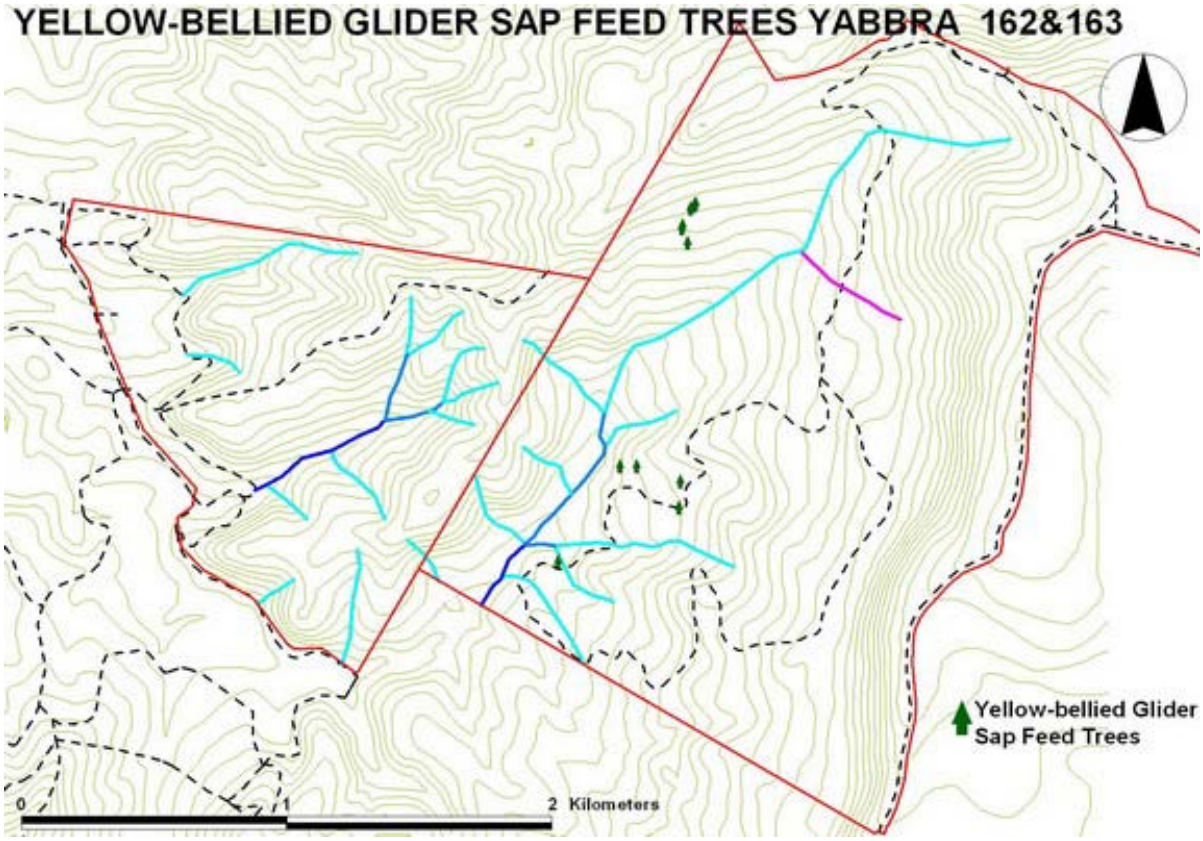
Photos. Some of the few marked habitat trees, with large quantities of fuel stacked around the base and ready for burning. The last photo of a marked habitat shows the consequences as the tree's base was burnt out in the post-logging burn (note the H near centre of stump).

The TSL (5.2.1) requires that during or before the marking up of a compartment an adequately trained person must conduct a thorough search for, record and appropriately mark Glossy Black Cockatoo feed trees, Yellow-bellied Glider sap feed trees, den trees for

Yellow-bellied Glider and Brush-tailed Phascogale, nest trees for Glossy Black-cockatoo, nest and roost trees for Sooty Owl and Powerful Owl, Koala high and intermediate use areas, bat roosts, and permanent soaks and seepages for *Philoria*.

In their pre-logging surveys Forests NSW recorded 29 Yellow-bellied Glider calls and observed an additional 3. This species is widespread in parts of the compartments and has been regularly recorded in the past. The adjacent landholder had identified a den tree within compartment 162 in the past, though was not consulted. Location of den trees requires implementation of 50m exclusion zones, so it is unsurprising that Forests NSW don't find them.

Despite this large population of Yellow-bellied Gliders, Forests NSW failed to locate a single sap-feed tree or den tree. During this preliminary audit 11 Yellow-bellied Glider sap feed trees were identified and documented by experienced observers (Map 3, Appendix 1), with a number of others observed incidentally but not documented. It is evident that large numbers of Yellow-bellied Glider sap-feed trees occur within the net logging area, that they occur at many more localities than so far documented, that some occur outside areas where prescriptions were applied and that it is highly likely that many were felled during the logging operation. The post-logging burn has burnt out and scarred numerous tree heads, making it unlikely that most felled sap feed trees will now be able to be identified. TSL licence condition 6.17(f) requires that all sap-feed trees be marked for retention, which they obviously have not.



MAP 3 YELLOW BELLIED GLIDER SAP FEED TREES

Photos show close up of recent sap feeding scars (centre left of first photo) and two Yellow-bellied Glider Sap Feed trees apparently inadvertedly retained. No Yellow-glider prescription was applied at the first sites (cmpt 163) and at the third site only the "call" prescription was reputedly applied, though as no trees were marked there is no evidence that even this prescription was applied (cmpt 162).

The TSL condition 6.17 (g) requires that within 200 m of a Yellow-bellied call detection site 15 feed trees must be retained. These trees must be unsuppressed mature and late mature trees, with good crowns and minimal butt damage. Where sap-feed trees are identified the 15 feed trees must be retained within 100m and sap-feed trees must not be counted towards this requirement. Forests NSW failure to identify sap-feed trees thus significantly affects required tree-retention rates.

At all of the Yellow-bellied Glider detection sites inspected there was no apparent marking of any of the 15 feed-trees required to be marked for retention in accordance with TSL 6.17(g)iv.

It is also revealing that no soaks were located by Forests NSW, despite being found in the logging area (detailed in section 6), and that no additional Glossy-black Cockatoo feed trees were found during the compartment "mark-up".

Compartment 162 was identified in the pre-logging fauna survey as an intermediate use compartment for Koalas, thus triggering the need for the retention and marking of ten primary browse trees per 2 hectares, and the prohibition of AGS (see Silviculture) in preferred forest types, in accordance with TSL condition 6.14(c)ii. There was no apparent marking of browse trees and logging of preferred forest types included the application of AGS by the creation of gaps.

In accordance with TSL condition 5.2.2 "*marking-up must be conducted at least 300 metres in advance of harvesting operations"* for Koalas by an adequately trained person using a specified methodology. The aim of this is to identify and protect any high-use Koala areas in the compartments. Given that no primary browse trees have apparently been marked for retention in preferred forest types in compartment 162, it seems likely that no scat searches were undertaken to identify, and appropriately protect, high-use areas.

It is apparent that either those responsible for marking up the compartment did not do so adequately as they failed to identify the required habitat trees and failed to mark them in the field. It is evident that an adequately trained person did not conduct a thorough search for,

record and appropriately mark the required habitat trees, feed, den and nest trees in contravention of TSL licence condition 5.2.1

Forests NSW have informed the author that there was a breach of the Brush-tailed Phascogale exclusion area in contravention of TSL condition 6.12(d) (J. Fitzpatrick, Forests NSW, pers. com).

There are two widely separated scat records for Black-striped Wallaby in these compartments. Given that detection was limited to scats on roads, it is almost certain that they occur elsewhere in unidentified locations in these compartments.

Black-striped Wallaby requires the development of Site-specific conditions in accordance with TSL conditions (1.2), which must be implemented in accordance with 1.2(d), and the application of these conditions to the harvesting plan in accordance with TSL conditions 3(b), 3(c). Forests NSW obtained a site specific prescription for this species from DECCW in September 2007, which included as requirements:

> *(a) Removal of no more than 50% canopy cover in the net harvest area.*
> *…*
> *(c)Particular attention must be paid to application of the Threatened Species Licence conditions of the IFOA for 5.4 Rainforest, 5.15 Grazing, 5.16 Burning, 5.17 Ground Habitat Protection, 5.18 Feral and Introduced Predator Control in these operations.*

Theoretically, as no doubt intended, this is a meaningless prescription to apply for an endangered species as the silvicultural prescription required 60% canopy retention and paying "particular" attention to existing requirements does little. Though as it would seem that the requirement is to retain at least 50% canopy cover throughout the logging area has established a benchmark which Forests NSW have clearly not met (see 1.Silviculture), thereby breaching TSL condition 1.2(d) and HP condition 10

As noted above (see, 2. Burning) there has been no apparent attempt to comply with the TSL 5.16(b) requirement that *"Hazard reduction work must be conducted in a manner which promotes and maintains an understorey mosaic which includes significant areas of dense understorey vegetation"* or TSL condition 5.16(a) that *"Hazard reduction work must … reflect the ecological requirements of any threatened species, or their habitat*". Similarly there has not been any genuine attempt to comply with the Ground Habitat Protection requirement 5.17 (a) that to the *"greatest extent practicable, protect ground habitat from specified forestry activities"* (Ground habitat includes, but is not limited to, understorey vegetation, ground cover vegetation, thick leaf litter and fallen timber).

Foraging habitat and refuges from predators are likely to have been most severely impacted. Due to heavy logging, hot fires and likely accentuated dieback, these impacts are expected to be long-term.

5. STREAM PROTECTION

Streams and drainage lines are assigned filter, protection, exclusion and /or buffer zones under the Environmental Protection Licence (EPL D.6), Threatened Species Licence (TSL 5.7) and Fisheries Licence (FL 7.1, 7.4, 7.5) from which logging is excluded and machinery use limited. Accidental felling into such areas is allowed, and such trees can be removed, under various constraints.

TABLE 1 Various prescriptions for protection of riparian areas.

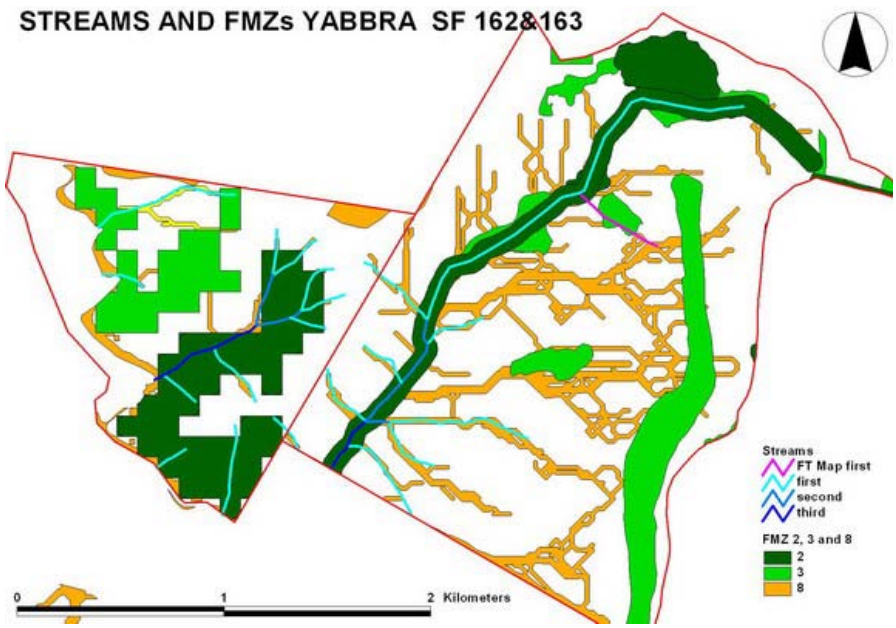
Stream Order	EPL Filter Strip TSL Protection zone (hard) FL Exclusion zone	EPL Protection Zone TSL Protection zone (soft) FL Buffer zone	EPL Operational Zone FL Special Operational Zone
Unmapped	5	5	10
1st Order	5	5	10
2nd Order	5	15	10
3rd Order	5	25	10
4th Order or greater	5	45	10

Note that TSL conditions do not apply to unmapped drainage lines.

The FL (7) requires *"The boundary of any exclusion zone or buffer zone is to be marked in the field before a specified forestry activity is commenced where the activity will come within 50 metres of that boundary"*.

This preliminary audit was limited to areas where mapped drainage lines were subsumed by other exclusion areas and thus the application of prescriptions to mapped drainage lines was not able to be ascertained.

Within the area assessed there are numerous unmapped drainage lines. As evidenced by the numerous mapped drainage lines identified in the western part of the area, there is a significant under-representation of drainage lines on maps for the Oaky Creek headwaters. Forest NSW's forest type map does show an additional stream along the boundary of compartments 162 and 163 (Map 2, FT Map first), which, if applied, would make a significant difference to the length of Oaky Creek identified as second order. Similarly the harvest plan shows two culvert crossings of well developed unmapped drainage lines, which, if mapped, would significantly increase the length of third order streams within the area.



Significant areas within the compartments are identified as Forest Management Zone 8 (Map 2). In this case the FMZ 8 areas represent modelled streams that are intended to be further assessed at the Harvesting Plan stage.

In the undated Forests NSW document "Managing our forests Sustainably: Forest Management Zoning in NSW State Forests" FMZ 8 is described as:

> *An interim zoning of areas where field investigation is required to determine final Forest Management Zone classification. Field investigation will be undertaken as part of pre harvest planning.*
>
> *These areas require field validation before allocation to a specific Forest Management Zone and are:*
>
> > *...*
> > *ii Areas of modelled GIS data where field verification is required to accurately map the features.*
>
> *The correct information will be mapped onto the harvesting plan ...*
>
> *Management will be for protection under the same requirements as FMZ 3A until field investigation allows determination of final FMZ classification.*

Forest NSW's 2005 ESFM Plan for UNE reiterates: *FMZ 8 areas require field assessment to identify into which of the seven FMZ they should be placed. This is normally done at the time of assessment for harvest planning.*

The Harvesting Plan (HP 7.1) also claims that *"Further assessment of the modelled streams will occur during compartment mark up and appropriate protection applied"* .

A proper assessment should involve the mapping of all unmapped drainage lines and the application of these to identify stream orders for planning purposes, including application of prescriptions.

The first visit identified numerous potential breaches of prescriptions relating to riparian zone protection. After a review of the harvesting prescriptions, most of these were revisited on the second inspection and documented (Map 1, Appendix 1), though it is emphasised that a number of similar breaches were observed but were not fully documented and thus are not included in this report. Unmapped drainage lines were assessed in the field based on the following features:

> a) evidence of active erosion or deposition - e.g., gravel, pebble, rock, sand bed, scour hole, nick points; or
> b) an incised channel of more than 30 centimetres depth with defined bed and banks.

Distances from streams were measured from the top of the bank, or from the centre of the channel where there was no bank.

It was found

1. None of the FMZ 8 modelled streams, or any unmapped drainage lines, were delineated in the field, and there appears to have been no attempt to apply the appropriate protection, as required by Forests NSW ESFM Plan for the UNE and HP 7.1.
2. No apparent attempt was made to retain filter strips, protection zones, operational zones, exclusion zones or buffer zones along unmapped drainage lines in contravention of EPL licence condition D6, and FL licence condition 7.
3. No apparent attempt was made to mark the boundaries of any exclusion or buffer zone for unmapped drainage lines in the area, in contravention of FL(7).
4. A total of 5 recently cut tree stumps were recorded within Filter Strips of unmapped drainage lines, with an additional 17 recently cut tree stumps found within Protection

Zones of unmapped drainage lines (Map 1, Appendix 1). Only a fraction of the compartments were inspected, so based on this sample there can be expected to be over 100 trees felled within filter and protection strips of unmapped drainage lines. The felling of trees within filter strips and protection zones is in contravention of EPL prescriptions 17 and 20C and FL licence conditions 7.4b, 7.5b.

Photos, examples of logging adjacent to unmapped drainage lines.

5. At 3 sites snig tracks had intruded into protection zones without any apparent attempt to restore ground cover (Map 1, Appendix 1). At one site the snig track crossed the drainage line, with one hastily constructed cross bank discharging directly into the centre of the drainage line and another cross bank with a large amount of soil and debris pushed from it into the centre of the stream (see 7.3, below). At these sites no attempt had been made to comply with the EPL licence conditions D19B and D20J that “70% ground cover must be achieved on all disturbed soil surfaces within five days”, or similar FL condition 7.5 m (ii),

6. No apparent attempt was made to minimise soil disturbance to Operational Zones of unmapped drainage lines, with many snig tracks constructed within them in contravention of EPL licence condition D20R.

   Photo, example of snig track in operational zone.

7. The examples of significant soil disturbance and snig tracks within Operational Zones were too frequent to be able to be documented during this inspection. Thus it is unlikely that Forests NSW could possibly document them in accordance with EPL licence condition D20S.

8. No apparent attempt had been made to rehabilitate, or establish ground cover, within Operational Zones of unmapped drainage lines in contravention of EPL licence condition D20T.

9. No apparent attempt was made to retain or mark buffer strips along drainage depressions in contravention of EPL licence condition D15.

Photo, an example of soil disturbance in a drainage depression.

10. Extensive machinery disturbance to drainage depressions was observed (though not documented), in contravention of EPL licence conditions D20, D21, D22, D23 (see above photo).

Soaks and Wetlands

Under the Fisheries Licence, a Wetland includes *"a vegetated depression with a permanent, seasonal or intermittent water table at or slightly above the floor of the depression (typically having a vegetation type that indicates a wetter micro-environment than that of the surrounding land)".* The TSL has a similar definition.

The FL (7.2.b (i)) requires that a 10m buffer be established around wetlands that have a surface area of at least 2mx2m, while the TSL (5.9(a),5.9(c)) requires that specified forestry activities be excluded from 10m exclusion zones established *"irrespective of the size of the wetland"* . Both FL (7.2(c)) and TSL (5.9(g)) require that SFNSW must, before commencing that operation, record the wetland on any harvesting plan and mark it in the field so that it can be protected. Two wetlands/soaks were identified in this audit and others are likely to have occurred.

Under the TSL "Soaks, seepages and bogs" are depressions in the ground in which water collects, on or below the surface; a place where water oozes slowly out of the ground; or a place where the ground is wet and spongy. While there is some confusion with presentation, it appears that the intent of 5.2.1 of the TSL is that an adequately trained person must conduct a thorough search for, record and appropriately mark permanent soaks and seepages in *Philoria* spp. potential habitat during or before the marking-up of a compartment.

Such wetlands are meant to be targeted in surveys for *Philoria* sp. The survey report identifies that targeted surveys for *Philoria loveridgei* are required. In this area the *Philoria* sp. is actually *P. richmondensis*, and this is the species that should have been targeted. There is no indication that these soaks were identified or targeted for surveys (despite one being adjacent to Section E Road). One of these soaks was identified in this audit as likely to have been potential habitat for *P. richmondensis,* though the intensity of the disturbance has now rendered it unsuitable habitat.

Photos show the extensive disturbances to apparently permanent wetlands/soaks within compartment 163. Note the water filled machinery tracks, extensive soil disturbance, logging debris and cut stump showing the intensity of disturbance perpetrated.

6. SOIL MANAGEMENT

As well as prescriptions relating to riparian areas aimed at reducing soil transport into streams, the EPL licence identifies a variety of prescriptions related to road and snig-track construction to limit erosion and overland transportation of soils into streams.

The maximum distance of water flow or potential water flow along snig track or extraction track surfaces is given as:

Track Grade (degrees)	Maximum Distance (metres)
5	100
10	60
15	40
20	25
25	20
30	15

Breaches of various EPL prescriptions documented are:

1. A snig track with an 18^{o} slope has been constructed along the private property boundary which has evidence of water flow for 96m down the track and then onto the adjacent private property. There has been a failure to construct the required cross-bank. The cross-bank above this section is so poorly constructed that it is likely to extend the erosion for a further 40m uphill after heavy rains (this may already be occurring in one wheel rut). (Map 1, AMG 450742_ 6838900) This contravenes EPL licence condition H70.
   Photo of snig track, note the eroded soil movement, exiting through bottom left of photo :

2. On Argans Loop road a crossbank has recently been constructed across the road at a stream crossing, directing water straight into a pool in the creek below the crossing (Map, Photo, AMG 449531_6837409). On the other side a tabledrain along Argans Loop road directs water directly into the creek above the crossing. These are in contravention of EPL Schedule 5 condition I 37 requiring drainage at least 5m from the creek.

Photo shows crossbank with person standing next to pool in creek.

3. In compartment 163 a snig track crossed the drainage line within a filter strip and protection zone (Map 1, Appendix 1, AMG 449864_6837797), with one hastily constructed cross bank discharging directly into the centre of the drainage line and another cross bank with a large amount of soil and debris pushed from it into the centre of the stream. This directly contravenes EPL licence conditions H38 and H39.

Photo shows person across drainage line where snig track crosses, track exits through centre right.

1. The Harvesting Plan identifies a number of crossings of drainage lines, though fails to identify the above crossing. This suggests that it was not approved, particularly as there was also no apparent field marking of this crossing, contrary to EPL licence condition H45.

7. GRAZING

The Harvesting Plan (6) notes that there are no grazing occupational permits. The species-specific licence condition for Black-striped Wallaby emphasises the need to comply with TSL condition 5.15. The TSL condition 5.15 requires that "The areal extent of grazing authorities issued by SFNSW must not be extended". Grazing is also required to be excluded from wetlands under TSL condition 5.9. The Fisheries Licence condition 6.1c requires that

> *The areal extent of grazing authorities issued by SFNSW must not be extended in any compartment where there is no physical barrier to prevent cattle from entering exclusion zones and buffer zones implemented under the conditions of this licence,*

Large numbers of cattle were observed in the compartment. These will be compounding problems caused by the lack of feed for native herbivores due to the burning, the vulnerability of burnt wetlands and drainage lines to increased sediment mobilisation and degradation, and the vulnerability of sensitive vegetation to degradation.

Photo: cattle observed in compartments.

APPENDIX 1 AUDIT DATA

1. TREES FELLED IN UNMAPPED DRAINAGE LINES/1st ORDER STREAMS

SPECIES	DIAMETER (cm)	AMG East	AMG North	FILTER (m from bank)	PROTECT (m from bank)
Brush Box	82	449414	6837372		9.0
Grey Gum	47	449463	6837319		7.0

COMMENTS: Hot Burn

1. No marking of Protection Zone boundary.

2. TREES FELLED IN UNMAPPED DRAINAGE LINES/1st ORDER STREAMS

SPECIES	DIAMETER (cm)	AMG East	AMG North	FILTER (m from bank)	PROTECT (m from bank)
Ironbark	51	449528	6837409		9.6
Grey Gum	50	449489	6837414	0	
Bloodwood	55	449460	6837387	4.8	
Ironbark	48	449454	6837383		8.0
Grey Gum	62	449442	6837388		5.7
Ironbark	50	449449	6837380		9.0
Ironbark[A]	55	449387	6837431		8.6
Ironbark[B]	65	449381	6837441		8.7

COMMENTS: Note that Ironbark trees A and B are the same trees as in 3.

1. No marking of Protection Zone boundary, even near road.
2. Crossbank recently constructed across Argans Loop road directs water straight into pool in creek below crossing (Map, Photo, 449531, 6837409).
3. Tabledrain along Argans Loop road directs water directly into creek above crossing (as above).

3. TREES FELLED IN UNMAPPED DRAINAGE LINES/1st ORDER STREAMS

SPECIES	DIAMETER (cm)	AMG East	AMG North	FILTER (m from bank)	PROTECT (m from bank)
Ironbark	67	449409	6837429		5.5
Ironbark[A]	55	449387	6837431		5.5
Ironbark[B]	65	449381	6837441	0	
Ironbark	60	449351	6837435		7.1
Ironbark	60	449295	6837465		5.4

COMMENTS: Note that Ironbark trees A and B are the same trees as in 2.

1. No marking of Protection Zone boundary.

4. TREES FELLED IN UNMAPPED DRAINAGE LINES/1st ORDER STREAMS

SPECIES	DIAMETER (cm)	AMG East	AMG North	FILTER (m from bank)	PROTECT (m from bank)
Grey Gum	78	449603	6837904		8.0
Grey Gum	63	449615	6837889		8.7
Ironbark	50	449634	6837889		7.5
Ironbark	48	449793	6837823		5.7
Grey Gum	46	449793	6837823		7.1
Ironbark	55	449864	6837797	4.5	
Grey Gum	60	449836	6837821	4.9	

COMMENTS:

1. No marking of Protection Zone boundary.
2. Snig track incursion up to 4m of bank, unrehabilitated (Photo 449653, 6837874)
3. One marked habitat tree within buffer (outside net harvest area)
4. Snig track incursion up to 7.5m of bank, follows along creek, unrehabilitated (Photo 499747, 6837861)
5. Snig track crosses drainage line, end of one crossbank in stream, another extended into centre of stream with soil and debris piled into centre of drainage line, unrehabilitated (Map 1, Photo 449864, 6837797)

5. TREES FELLED IN UNMAPPED DRAINAGE LINES/1st ORDER STREAMS

SPECIES	DIAMETER (cm)	AMG East	AMG North	FILTER (m from bank)	PROTECT (m from bank)
Brush Box	86	449894	6837969		7.0
Brush Box	100	449894	6837894		7.2

COMMENTS:

6. MARKED HABITAT AND RECRUITMENT TREES

AMG: 450952 6838828

	SPECIES	DIAMETER cm	CROWN (P/M/G)	BUTT D. %	GROWTH (R/M/LM,S)	SUPPRESS Y/N
HABITAT	Tallowwood	147	G	20	S	N
RECUITMENT	Grey Gum	25	P	0	R	Y

Has debris been minimised, removed and/or flattened within 5 m? No
Comments:

7. MARKED HABITAT AND RECRUITMENT TREES

AMG: 450956 6838813

	SPECIES	DIAMETER cm	CROWN (P/M/G)	BUTT D. %	GROWTH (R/M/LM,S)	SUPPRESS Y/N
HABITAT	Blue Gum	153	P	0	S	N
RECUITMENT	Tallowwood	37	M	0	R	Y

Has debris been minimised, removed and/or flattened within 5 m? No, debris stacked around base
Comments:

8. AMGs FOR IDENTIFIED YELLOW-BELLIED GLIDER SAP FEED TREES

0449028 6837109
0449485 6837314
0449488 6837411 (Recent and old notches)
0449324 6837469 (Recent notches – not very clear could be post-logging)
0449262 6837468 (Recent and old)
0449547 6838457 (Recent and old)
0449541 6838449 (Old)
0449527 6838438 (Old)
0449494 6838364 (Old)
0449497 6838376 (Old)
0449516 6838309 (Old)