Audit of
Cherry Tree State Forest
Compartments 359, 360 & 361

Dailan Pugh
North East Forest Alliance
AUDIT OF CHERRY TREE STATE FOREST

Compartments 359, 360 & 361

Dailan Pugh, North East Forest Alliance, November 2015

For 6 months while logging was underway the North East Forest Alliance (NEFA) brought ongoing flagrant and reckless breaches of the Integrated Forestry Operational Approval (IFOA), Threatened Species Licence (TSL) Environment Protection Licence (EPL) and Fisheries Licence (FL) occurring in Cherry Tree State Forest to the attention of the Environment Minister and the Environment Protection Authority (EPA) in an attempt to stop them occurring. Our efforts were in vain.

While the EPA watched, the Forestry Corporation continued to rampage through the forest causing widespread damage to the surviving trees, roading and logging endangered Lowland Rainforest, killing and damaging threatened plants, degrading the habitat of threatened animals, and initiating erosion, while spreading lantana and forest dieback. These impacts will be compounded by the post-logging burn.

This audit documents the numerous breaches of licence conditions that NEFA found during our investigations. It is emphasised that we have only sampled the area, so the offences we have documented are only a portion of those occurring. Based on our sample it is evident that thousands of breaches of the IFOA, TSL, EPL and FL have occurred. NEFA considers there have been systematic and deliberate breaches of their duty of care by the Forestry Corporation and their contractors in the manner they planned and implemented the operation, and by the EPA and by the Environment Minister for their failures to adequately supervise and regulate the operation.

Compartments 359, 360 & 361 of Cherry Tree State Forest adjoin Mallanganee National Park on the Richmond Range, west of Casino in north-east NSW. The adjoining Mallanganee National Park has been assessed as qualifying for World Heritage listing (with part already listed), and the World Heritage rainforests extend into these compartments. These compartments are part of the “Border Ranges North and South”, one of Australia’s 15 recognised biodiversity hotspots. The Border Ranges Rainforest Biodiversity Management Plan covers this hotspot and specifically maps these compartments as a Conserve Priority and a Repair Priority.

Logging of compartments 359, 360 & 361 of Cherry Tree State Forest began in January 2015, with total disregard for its nationally recognised exceptional values. Logging was suspended for a month in May and was completed in September 2015.

NEFA undertook a brief inspection of Cherry Tree State Forest on 8 March 2015, finding the vulnerable Onion Cedar dying in the wake of logging and poor implementation of habitat tree, rainforest and erosion mitigation prescriptions. We reported our findings to the Environment Minister, Forestry Corporation and EPA at that time in an attempt to ensure inspections by a botanist, greater scrutiny of operations and improved implementation of prescriptions.

NEFA revisited the operation on the 24 August and was disappointed to find that little had improved. We reported our findings to the Environment Minister, though did not expect anything to change. While the EPA refuse to tell us what they found, or what they have done to rectify the problems, it is obviously ineffective as systemic breaches have continued throughout the logging operation. In
September 2015, with operations still underway, we undertook further visits to more comprehensively document breaches, with final inspections in October once logging was complete.

In response to an EPA claim that only 7 vulnerable Onion Cedars were affected, we did a more comprehensive survey within 20m of the track and identified more than 26 individuals that had been affected, with the tops knocked out of two of these, two pushed over amongst a pile of debris, and debris left around others. It is disappointing that nobody has bothered to remove the debris from around, or rehabilitate, any of the affected plants.

We are particularly concerned that most of these offences occurred along a track through the Endangered Ecological Community Lowland Rainforest that was fraudulently misrepresented by the Forestry Corporation and wrongly approved by the EPA. This was one of a number of tracks bulldozed through the endangered Lowland Rainforest based on shoddy assessments and the pretence that the rainforest was something else. Meanwhile logging ate away at the rainforest margins.

NEFA are dismayed that our repeated attempts to highlight the serial abuse of hollow-bearing and recruitment habitat trees were ignored by the Environment Minister and the EPA while the abuses continued. Realising that unless we provided detailed evidence that the EPA would yet again do nothing, NEFA undertook systematic audits covering 50ha (14%) of the net harvest area. In an effort to stop the EPA once again pretending they are unable to find obvious breaches, GPS localities and photographs of breaches are included in Appendices 1-4. By extrapolation it is evident that for retained habitat trees, across the logging area there have been over 1,600 breaches of retention requirements, with some 2,000 (44%) of the habitat trees required to be protected logged.

Of particular concern is the Forestry Corporation's ongoing refusal to select and protect the large sound recruitment (R) trees essential to replace the dwindling hollow-bearing trees as they die out.
Of the marked R trees, 63% were considered to be inappropriate selections, with many more damaged in the logging or with debris left around them. Once again, under EPA supervision, short-term timber commitments triumphed over legal requirements to provide long-term homes for the numerous hollow-dependent animals that inhabit the area.

This contempt for the plight of our threatened fauna is further corroborated by the Forestry Corporation's ongoing failure to undertake competent surveys to identify the abundant evidence of Koalas when doing their pre-roading surveys, and identify Koala high use trees, Yellow-bellied Glider sap-feed trees, and Onion Cedar ahead of logging. That this intentional blindness is still continuing, despite NEFA exposing it time and time again, is more proof of a flagrant disregard for legal requirements to look before they log.

This proven contempt for endangered ecological communities, threatened plants and threatened animals extends to cultural heritage, with significant degradation of a nationally recognised scenic site along Cherry Tee Road. This was supposedly protected by the Regional Forest Agreement.

The shoddy compliance extends to snig-tracks, with many constructed without the required cross-banks to divert stormwater and reduce erosion, and numerous instances of cross-banks being so poorly constructed that they have already failed. Similarly there have been a number of significant violations of stream buffers, with no attempt to undertake the required rehabilitation.

Particularly disgusting is that the Forestry Corporation are still ignoring the Key Threatening Processes of lantana invasion and Bell Miner Associated Dieback while they continue to spread them through the forests. The EPA don't even care.

Specifically NEFA's audit of Cherry Tree SF has found:

**NATIONAL RECOVERY PLAN**

1. The logging operations have been undertaken within identified "Conserve" and "Repair" priority areas in a manner that contravenes the objectives and aims of "The Border Ranges Rainforest Biodiversity Management Plan", which is the formal national recovery plan covering the area (contravenes Environment Protection and Biodiversity Conservation Act 1999).

**THREATENED PLANTS**

2. A track constructed through rainforest and adjacent wet sclerophyll forest affected over 26 vulnerable Onion Cedars, physically damaging at least 4 in the process, leaving debris around others, affecting the microclimate and leaving survivors vulnerable to weeds and burning (breaches TSL 5.1 (b), 5.4 (e)(iv), 6.23 (a) (b)). The Forestry Corporation did not have an adequately trained person conduct a thorough search for threatened plants in contravention of both TSL 5.2.1 (a) (xiv) and Schedule 6 (d) (ii),(v).

**RAINFOREST**

3. Tracks have been construction through, and logging undertaken within, the Endangered Ecological Community 'Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions', with some tracks improperly approved by the EPA under the TSL (breaches Clauses 118A and 118D of the NPW Act).

4. In constructing and using their IFOA Crossings through protected rainforest the Forestry Corporation have:
   a) fraudulently misrepresented the need to construct roads through protected rainforest (FMZ 2) and riparian areas where alternative access was already provided, in blatant contravention of IFOA(10), TSL 5.4 (e)(i) and Schedule 6 (a);
(b) not accurately described the type of rainforest, its structure or floristics in accordance with TSL Schedule 6 (d)(vi), failing to identify that much of the rainforest is the Endangered Ecological Community Lowland Rainforest and in one case fraudulently misrepresenting rainforest as eucalypt forest;

(c) not taken "all practicable measures" to minimise environmental impacts by clearing for tracks well in excess of their own identified requirements, excessive clearing outside road prisms, damaging retrained trees, degrading soil structure, and pushing debris into retained vegetation, in contravention of TSL 5.4 (e)(iii), EPL Sch. 4 19B, 20, 20E and 39;

(d) inadequately assessed and misrepresented past disturbance in order to downplay impacts, claiming some crossings followed existing snig tracks when no evidence supported this, in contravention of TSL Schedule 6 (d)(viii);

(e) failed to assess the impacts on threatened flora in accordance with TSL Schedule 6 (d)(ii) (v) and consequently roaded through the vulnerable Onion Cedar and what should have been exclusion zones established in accordance with TSL 5.1 (b), 5.4 (e)(iv) and 6.23;

(f) failed to assess threatened fauna in accordance with TSL Schedule 6 (d)(iii), (iv) and (v), with evidence of the presence of Koalas and the likely presence of other species ignored;

(g) failed to duly consider the likely impacts of creating road clearings on the fragmentation of threatened species habitat and the movements of animals in accordance with TSL Schedule 6 (d) (iv) and (vi); and,

(h) failed to duly consider the likely increases in lantana and predation by feral animals in accordance with TSL Schedule 6 (d)(vii).

5. The Forestry Corporation has logged, dropped trees, pushed debris and driven machinery across boundaries of mapped rainforest in contravention of TSL 5.4 (a) (c) and (d);

6. The Forestry Corporation has logged into, and thus harmed and picked, the Endangered Ecological Community Lowland Rainforest in contravention of NPW Act 118A;

HABITAT TREES

7. In the order of 2,000 (44%) of the habitat trees required to be protected were logged, in contravention of TSL 5.6 (d)(i), (e), and 6.9 (d).

8. There have been over 1,600 breaches of habitat tree selection and retention requirements for trees that were retained across the logging area, in contravention of TSL 5.6 (a) (i), (ii), (d)(ii), (e) (i), (iii), (iv), (h) (i) and (ii).

9. Of the marked H trees, 10% were considered inappropriate selections due to their small size, suppression and lack of hollows, in contravention of TSL 5.6 (a) (i), and (d)(ii).

10. Of the marked R trees, 63% were considered to be inappropriate selections due to pre-existing damage, being suppressed, or being too small, in contravention of TSL 5.6 (a)(ii), (e)(i),(iii),(iv).

11. Of the marked habitat (H&R) trees, 22% were physically damaged in the logging operation, with some 520 habitat trees likely to have suffered significant physical damage, in contravention of TSL 5.6 (h)(i), and

12. Of the marked habitat (H&R) trees, 38% had debris left around them, with some 680 habitat trees likely to have had debris left around them, in contravention of 5.6 (h)(ii).

TRACKS

13. In constructing and draining their snig tracks It is evident that the Forestry Corporation has:

(a) constructed snig tracks on excessively steep slopes in contravention of EPL Sch4 41;
(b) often not constructed the cross-banks required to divert water flow down tracks, or inadequately spaced cross-banks, or constructed them so poorly that they have quickly failed to divert flows, in contravention of EPL Sch4 70;
(c) constructed numerous cross-banks to an inadequate standard to divert peak flows onto stable surfaces capable of trapping sediments, in contravention of EPL Sch4 72;
(d) failed to the construct the required cross-banks on some tracks when logging was temporarily suspended, and for many months after logging was completed in some cases, in contravention of EPL Sch4 79, 80; and,
(e) used snig tracks when the soil was saturated, resulting in severe degradation of soil structure and rutting, in contravention of EPL Sch4 81.

STREAMS
14. The Forestry Corporation have ignored the presence of numerous ephemeral water bodies and drainage depressions, despite mapping them as "Indicative drainage features" in their harvesting plan, and have undertaken extensive machinery operations within their buffers, including when saturated (contravenes EPL Schedule 4; 15, 21. 22, 23 and 75).
15. At 3 sites the Forestry Corporation have undertaken extensive earthworks and machinery disturbance with stream Filter Strip and Protection Zones (contravenes EPL Schedule 4; 20, 20H and 39, FL 7.4(c), 7.5(b)(c)(d), and 7.8(b)) while failing to restore ground cover (contravenes EPL 20J). At one site (at least) the Forestry Corporation failed to recognise the presence of an "unmapped" drainage line (a mapped "Indicative drainage feature") and logged and roaded within what should have been its Filter Strip and Protection Zone.
16. At one site the Forestry Corporation caused considerable soil degradation by undertaking works when the soil was saturated (contravenes EPL Schedule 4; 20E. FL 7.8 (a)), at another they caused considerable damage by partially dragging a tree crown out of a Filter Strip (contravenes of EPL Schedule 4; 19, FL 7.5 (f)) and at another they felled a tree within a Protection Zone in contravention of EPL Schedule 4; 20B.

DIEBACK
17. By removing overstorey, disturbing understories and creating bare ground, logging and roading are assisting the spread of lantana through these forests, which will both initiate and aggravate Bell Miner Associated Dieback, degrading ecosystems and further threatening the survival of plants and animals (breaches IFOA 2.7.1);

THREATENED FAUNA
18. There has been a failure to search for Koala scats ahead of track construction and logging, with tracks constructed adjacent to unrecognised Koala high use trees (breaches TSL 5.2.1 (a) (b) and 5.2.2. (a) (b));
19. There are numerous areas where more than 50% of the canopy cover have been removed, and extensive, intensive and deliberate destruction of understorey vegetation, in contravention of the "site-specific" requirements for Black-striped Wallaby (breaches TSL conditions 1.2 (f) and 5.17(a)).
20. For Yellow-bellied Gliders the evidence is that:
   a) "An adequately trained person" did not "conduct a thorough search" for Yellow-bellied Glider sap feed trees. in contravention of TSL 5.2.1 (a) (viii);
   b) Debris was not removed from around sap-feed trees in accordance with TSL 5.6 (h) (ii); and
c) 15 appropriate feed trees were not retained within 100m of sap-feed trees as required by TSL 6.17 (g) (i), (iii) and (iv).

21. The boundary of the Squirrel Glider exclusion area has not been marked on the ground and numerous intrusions into one boundary were identified (breaches TSL 5.1 (a) (f) (h), and 6.16 (f)).

LOGGING INTENSITY

22. Numerous areas have been logged in excess of 40% basal area removal in contravention of IFOA clause 5.3.

CULTURAL HERITAGE

23. A Regional Forest Agreement Cultural Heritage site, in part constituting a visual buffer along Cherry Tree Road, has been significantly degraded (breaches RFA, Attachment 4, and IFOA 16); and

HAULAGE

24. Parts of Cherry Tree and Bulmer Roads clearly identified in the Harvesting Plan (6.4) as "no haulage" were used for haulage despite safety and threatened plant issues (contravenes Harvesting Plan 6.4).

NEFA brought our concerns about the emerging and obvious problems in Cherry Tree State Forest to the attention of the Forestry Corporation, the EPA and the Minister for the Environment over 6 months ago, in the hope that there would be a significant improvement in adherence to the rules. While we can hope that our early intervention helped avoid some worse excesses, there does not appear to have been a significant reduction in most of the systemic problems we identified, such as the failure to undertake adequate Mark-up Surveys, the retention and protection of habitat trees, or the intensive logging of stands. Under the supervision of the EPA, the Forestry Corporation continued their flagrant and reckless contraventions of the Threatened Species Licence and Environment Protection Licence. Our appeals to the Minister for the Environment appear to have been in vain. We are particularly concerned that no attempt has been made to rescue the vulnerable Onion Cedars by removing debris from on top of, and around, them.
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1. Background

Cherry Tree State Forest adjoins Mallanganee National Park on the Richmond Range, west of Casino. The rainforests within that part of Mallanganee National Park that constitutes the old flora reserve are inscribed on the World Heritage List as part of the Gondwana Rainforests of Australia. The balance of the Mallanganee National Park has been assessed as qualifying for World Heritage listing and has been included on the Tentative List. These World Heritage rainforests extend into the logging area.

Areas with many endemic species where the levels of stress or future threat were considered to be high were identified by the Australian Government’s Threatened Species Scientific Committee as hotspots. The logging area is within one of Australia’s 15 recognised biodiversity hotspots, the ‘Border Ranges North and South (Queensland and New South Wales)’. In relation to the Border Ranges North and South the Environment Australia website notes;

This sub-tropical and temperate hotspot is one of Australia’s most diverse areas - and it is the most biologically diverse area in New South Wales and southern Queensland. It has a variety of significant habitats: subtropical rainforest, wet sclerophyll forest, mountain headlands, rocky outcrops and transition zones between forests.

These habitats support a huge variety of bird and macropod species. Many are rare or threatened: the Richmond Bird-wing Butterfly, Fleay’s Frog, Hastings River Mouse, Long-nosed Potoroo, Spotted-tailed Quoll, Eastern Bristle Bird, Rufous Scrub-bird and the critically endangered Coxen’s Fig parrot. Notable birds such as Albert's Lyrebird and the Paradise Riflebird make their home here, and in the south-east Queensland rainforests live a rich variety of primitive plant species, many of them similar to fossils from Gondwana.

The Border Ranges Rainforest Biodiversity Management Plan (Department of Environment, Climate Change and Water NSW, 2010) covers this national hotspot, and specifically identifies compartments 359, 360 & 361 of Cherry Tree SF as one of the precincts that is a Conserve Priority and a Repair Priority:

Logging of compartments 359, 360 & 361 of Cherry Tree SF began in January 2015. Logging was suspended for a month in May and was completed in September 2015. In order to stop NEFA inspecting logging operations in this area, harvesting plans are often not released until operations commence and then the forest is immediately closed to public access. Notices were put up closing Cherry Tree SF to the public from the 19th January until the 3rd July.

A NEFA "recky" of Cherry Tree SF on 8 March 2015 revealed a variety of problems in the vicinity of log dump 8 in compartment 359. We wrote to the then Environment Minister, Rob Stokes, regarding illegal logging on 10 March 2015, attaching a complaint which identified:

1. eight vulnerable Onion Cedars had so far been damaged or killed by road construction, partially within protected rainforest (breaches TSL 5.2.1, 5.4. (e), 6.22 (a) (b), Schedule 6);
2. stands of the rare Steel Box were proposed for logging;
3. koala scat searches were not being undertaken and Koala High Use Areas were not being identified (breaches TSL5.2.1, (b), (c), (d), and 5.2.2. (a), (b));
4. areas affected by, and susceptible to, BMAD were being logged or proposed for logging (breaches IFOA 2.7.1);
5. retained habitat trees were suppressed, damaged, had debris placed around them, and did not appear to satisfy retention requirements (breaches TSL 5.6 (d) (g));
6. a visual buffer along Cherry Tree Road was being abused (breaches harvest plan);
7. unmapped rainforest was being roaded;
8. snig tracks were being used when saturated, causing rutting (breaches EPL Schedule 4 cl, 81); and
9. cross-banks (or other means of diverting surface flows) had not been installed (breaches EPL Schedule 4 cl 80).

At that time we asked the Minister to stop logging in Cherry Tree State Forest until independent experts have identified locations of threatened plants, core Koala habitat and areas affected by Bell Miner Associated Dieback.

After the closure ended, NEFA undertook a second "recky" of Cherry Tree State Forest on the 24 August in the vicinity of log dumps 6&7. We wrote to the current Environment Minister, Mark Speakman, regarding illegal logging on 2 September 2015, attaching a complaint which identified that the Forestry Corporation:

1. constructed a track through an exclusion zone and unmapped rainforest, down an excessively steep slope, and failed to construct adequate cross-drains (breaches EPL Schedule 4 cl 38, 39, 41, 71, 72, 74 and 75);
2. failed to search for koala scats before constructing a track, bulldozing over and undermining Tallowwoods in the process, and failed to recognise the presence of Koala high use trees and a likely Koala high use area (breaches TSL5.2.1, (b), (c), (d), and 5.2.2. (a), (b), (c));
3. selected suppressed trees as recruitment trees, damaged retained habitat trees, and left debris around habitat trees (breaches TSL 5.6 (d) (g));
4. logged an area affected by Bell Miner Associated Dieback in a manner that will aggravate both lantana and BMAD (breaches IFOA 2.7.1); and,
5. appear to have used a no-haulage road for haulage (breaches harvest plan).

We identified to the Minister that despite our previous complaint once again nothing had changed and that the breaches have continued under the EPA's supervision, stating:

We hoped that, at the very least, the EPA would make sure that a competent botanist checked for threatened plants ahead of roading and logging, that koala scat searches would be done where possible and an independent expert would identify likely high use areas to protect where this was not possible, that something would be done about the BMAD and operations would at least avoid the worst affected areas, that the Forestry Corporation would better identify and protect habitat trees, that the Forestry Corporation would stop trashing the visual protection area, and that erosion mitigation prescriptions would be properly applied.

We requested of the Minister:

We are asking you to take a supervisory role in relation to these breaches and those reported previously in Cherry Tree to make sure they are fully investigated and that the punishment is appropriate, particularly for repeat offences. We strongly urge you to advocate prosecution for the Onion Cedar offences.

Given that the EPA have had six months to investigate our concerns, and have spent some time on site, NEFA is now asking the Environment Minister to also compare our findings as documented herein with the EPA's findings to date. If the EPA have still not identified the nature and scale of the breaches identified herein then we hope that the Minister will recognise that something is very wrong with the EPA's investigation and enforcement abilities.
2. Ignoring National Objectives for a National Hotspot

The Border Ranges Rainforest Biodiversity Management Plan (Department of Environment, Climate Change and Water NSW, 2010) covers this national hotspot and "constitutes the formal national recovery plan for those rainforest species which are endemic to the Hotspot region" and "identifies the actions to be taken to ensure the long-term viability of the threatened species and other biodiversity assets of the rainforest and related vegetation of the Border Ranges region". The Plan identifies the priority species and ecological communities addressed as including a variety of species recorded within the logging area: Spotted-tailed Quoll (southern subspecies) Golden-tipped Bat, Black-striped Wallaby, Red-legged Pademelon, Giant Barred Frog, Wompoo Fruit-dove, Rose-crowned Fruit-dove, Sooty Owl, Onion Cedar, and Lowland rainforest in the NSW North Coast and Sydney Basin bioregions. Ripple-leaf Muttonwood is also addressed in the Plan. Undoubtedly further surveys would expand this list.

The Plan identifies the part of Cherry Tree SF just logged as both a Conserve Priority and Repair Priority:

The Conserve Priorities and Precincts map (see Figure 10) identifies areas that, if lost, would have the greatest impact on the biodiversity of the Planning Area. These are generally areas of existing conservation value where the focus should be on retaining the values that currently exist through mechanisms appropriate to their current tenure. National parks are not included here as they are already conserved. The Repair Priorities and Precincts map (see Figure 11) identifies areas that, if restored, would contribute the greatest biodiversity gains to the Planning Area. Repair Priorities are generally poorly conserved or over-cleared vegetation communities and are not restricted by land tenure (Turbill & Steed 2006). Areas where clusters of Conserve or Repair Priorities occur have been delineated and mapped as 'Precincts'.

Figure 10j
Conserve Priorities in Mallanganee

- Main Towns
- State Border
- Highway
- Main Road
- Secondary Road
- Border Ranges
- Conserve Priorities
- Very High
- High
- Moderate - High
- Vegetation
  - Rainforest & Related Vegetation
  - Other Vegetation
The Border Ranges Rainforest Biodiversity Management Plan identifies a variety of key threatening processes (or legislative equivalents) that are relevant to the Planning Area, including some specifically relevant to the logging area:

- Clearing of native vegetation
- Eucalypt dieback associated with over-abundant psyllids and Bell Miners *Manorina melanophrys*
- Loss of hollow-bearing trees
- Invasion, establishment and spread of Lantana *Lantana camara*
- Predation by the European Red Fox *Vulpes vulpes*
- Predation by the feral Cat *Felis catus*
- Degradation of native riparian vegetation along watercourses

The Plan then focuses on objectives and outcomes aimed at redressing the threats, noting:

*The objective of this Plan is to protect rainforest and related biodiversity and to provide a consistent and effective recovery program for species and communities of conservation concern. The recovery program will focus on improving the condition (connectivity and integrity) of rainforest and related vegetation communities and their component species and systems.*

The objectives for each species and ecosystem are summarised in Appendix 11 of the Plan, with those relevant to species recorded in the logging area being:
Table 1

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Extract from Appendix 11 of the Plan summarising which Objectives and Outcomes address Actions for the listed threatened species, populations and communities recorded in the logging area.

**Requirements**

Objective 4 of the Plan is "To protect rainforest and related vegetation from fragmentation, modification and degradation", with relevant actions being:

- **Promote the rehabilitation and management of rainforest and related vegetation on public land through plans of management, pest strategies and restoration and rehabilitation plans.**
- **Ensure that buffers are included in approvals for new developments or activities that occur in close proximity to rainforest or related vegetation.**
- **Where appropriate, ensure local provenance flora is selected for revegetation and rehabilitation projects.**
- **Encourage preparation of restoration plans prior to commencement of restoration activities. These should consider potential impacts on priority and threatened species present at a site.**
- **Identify areas that contain high densities of hollow-bearing trees as areas of high conservation value in planning instruments and land management negotiations.**
- **Ensure retention of existing hollow-bearing trees. Also encourage the protection of recruitment trees that will ensure hollow resources are available into the future.**

Objective 5 of the Plan is "To protect rainforest and related vegetation from the impact of weeds", with relevant actions being:
• Ensure implementation takes an integrated and systematic approach to incrementally control all weeds within a defined management area and promote native species regeneration.
• Prepare site management plans and adopt best practice weed control and removal practices.
• Target weed control efforts toward priority areas (see Table 11) in intact rainforest or related vegetation, or remnants in good condition.
• Undertake staged removal and replacement of weeds with suitable native species that provide alternative resources and habitat for wildlife (e.g. food resources for frugivores).
• Identify sites for Lantana control based on priority areas and species identified in this Plan, the ‘Bell Miner Associated Dieback Strategy’ (Bell Miner Associated Dieback Working Group 2004), and when available, the national Lantana management plan.

Objective 6 of the Plan is "To protect rainforest from fire and to promote the implementation of appropriate fire regimes in related vegetation", with relevant actions being:
• Assess fire regime requirements for priority species and habitats of the Planning Area. Species identified as requiring assessment include: ... Bog Onion Owenia cepiodora ... Black-striped Wallaby ... Golden-tipped Bat Kerivoula papuensis ... Spotted-tailed Quoll (southern subspecies) Dasyurus maculatus maculatus ...

Objective 8 of the Plan is "To minimise the effects of Bell Miner associated dieback on rainforest and associated wet sclerophyll forest", with relevant actions being:
• Implement Lantana removal trials within areas adjacent to rainforest that are affected by dieback.
• Develop guidelines for restoration of severe dieback-affected sites which may be implemented by land-holders and government agencies.
• Continue mapping, surveying and assessing the extent of dieback within north-east NSW and south-east Queensland.
• Implement an ‘alert system’ so that new outbreaks are reported to the Bell Miner Associated Dieback Working Group.
• Undertake targeted surveys and monitoring of Bell Miners, rapid census of native bird species, and assessment of vegetation condition at priority locations.

Objective 10 of the Plan is "To minimise the impacts of human interference", with relevant actions being:
• To reduce access for pest animals and weeds, discourage the construction of new roads and tracks in priority areas.
• Adopt best practice methods to control sedimentation and erosion resulting from construction and maintenance activities.

Findings
As identified in the following sections NEFA maintains that the logging operations in Cherry Tree SF have been undertaken in a manner inconsistent with the above actions and thus the logging operations contravene the objectives of The Border Ranges Rainforest Biodiversity Management Plan in that:
• The endangered Lowland Rainforest in the NSW North Coast and Sydney Basin bioregions, its buffers and associated vegetation, within this priority Precinct has been significantly degraded by roading and logging, and the widespread destruction of stands with Brush Box and eucalypt emergents.
The new tracks, opening of the overstorey, extensive destruction of rainforest understories and soil disturbance will facilitate the spread of lantana through the logging area, and consequently the spread of Bell Miner Associated Dieback, significantly reducing the habitat and resources available for numerous species (such as Black-striped Wallaby, Red-legged Pademelon, Golden-tipped Bat, Wompoo Fruit-dove, Rose-crowned Fruit-dove, Sooty Owl, Onion Cedar, Ripple-leaf Muttonwood).

The cutting down and extensive damage to hollow-bearing trees and recruitment trees will significantly increase loss of hollows (directly, indirectly and over time) required for many species (such as the Sooty Owl and Spotted-tailed Quoll); and

The poor implementation of the already inadequate erosion mitigation guidelines and riparian buffers will contribute to stream degradation and impact aquatic and riparian species (such as the Giant Barred Frog, Eastern Freshwater Cod).

As evidenced by the extensive degradation of logged forests elsewhere in the "Border Ranges North and South", including the extensive spread of lantana and BMAD, NEFA does not consider that the "log and leave it" strategies of the Forestry Corporation have worked in the past or will work in this case. This recent logging will significantly compound the obvious degradation from past logging.

As always, the inept EPA is content to sit back and allow this Priority Precinct to be further degraded. In contravention of the recovery plan, the EPA approved the construction of illegal tracks through Lowland Rainforest and threatened species in this area based on shoddy assessments, ignored systemic abuses of habitat trees, ignored the aggravation of both lantana invasion and Bell Miner Associated Dieback, and could not care less about the need to rehabilitate degraded threatened species habitat.
3. Threatening Threatened Plants

There are two threatened plants of particular significance that are known or likely to occur in the compartments: Onion Cedar and Ripple-leaf Muttonwood. The area also contains extensive wet-sclerophyll forests with the rare Steel Box over a rainforest understorey - such stands should more correctly be considered a Threatened Ecological Community in their own right, though also qualify in part as the EEC Lowland Rainforest (see section 4.1).

3.1. Onion Cedar

There was a record of Onion Cedar *Owenia cepiodora* within compartment 359. This was the only threatened plant identified for pre-logging surveys. On the other side of the rainforest stand in which it was recorded, the Forestry Corporation constructed a track through, and logged within, what should have been exclusion zones around over 26 vulnerable Onion Cedars. As we have repeatedly found, they obviously didn't bother looking.

**Requirements**

Onion Cedar *Owenia cepiodora* is listed under both state and Federal legislation as Vulnerable. It is a species of the border ranges. The Border Ranges Rainforest Biodiversity Management Plan (see section 2) constitutes its official recovery plan. The OEH website identifies threats to include:

- Clearing and fragmentation of habitat for development, agriculture, and road-works.
- Weed invasion, primarily Lantana camara.

The TSL 5.2.1 (a) (xiv) requires that "an adequately trained person must conduct a thorough search for" threatened plants, including Onion Cedars. Also when proposing IFOA Crossings, TSL Schedule 6 (d) (ii) additionally requires that the Forestry Corporation undertake a field assessment to assess "any threatened flora that will or is likely to be directly or indirectly affected by construction, or occurs within 50 metres of the construction area".

Onion Cedar is identified as requiring 20m buffers under TSL "6.23 Threatened and Protected Flora: 20 metres Exclusion Zones, all individuals". This is the only plant identified in the Harvesting Plan for protection: 20m Exclusion Zones, all individuals.

**Findings**

On NEFA's first inspection we identified 8 vulnerable Onion Cedars *Owenia cepiodora* which the Forestry Corporation had constructed a track through and logged around. This was part of a brief preliminary visit, which we reported in the hope it would cause the EPA to fully assess the extent of the breach, require pre-logging assessments by competent botanists and lead to rehabilitation of the affected plants.

In response to a subsequent claim by the EPA that only 7 Onion Cedars were affected, a more thorough investigation of the Onion Cedar area was undertaken to better document the number of individuals affected by the track construction (it is emphasised that this was not comprehensive). A total of 26 Onion Cedars were identified within 20m of the track. Two of these (2 and 3m from track) had their tops knocked off during road construction and 2 were bulldozed over amongst logging debris. 19 of the affected Onion Cedars are within the IFOA rainforest and 7 within the nett harvest area.
Locations are:

- 1: 1m from track (AMG 475695, 6799287).
- 1: 2m from track (AMG 475705, 6799294).
- 4: 2, 2.5, 3.0, and 4.8m from track, 2 broken off, (AMG 475714, 6799296).
- 2: 2.3 and 4.3m from track (AMG 475744, 6799314).
- 3: 2.5, 2.5, and 7.5m from track (AMG 475695, 6799287).
- 5: 14, 17.5, and 20m from track (AMG 475732, 6799326).
- 8: 6, 10.5, and 17m from track (AMG 475725, 6799317).
- 2: pushed over in debris (AMG 475755, 6799297).

Onion Cedar in roading debris. BOTTOM LEFT: a 6m Onion Cedar is one of two pushed over amongst logging debris, 6 months later they were still alive but nothing had been done to remove the debris and give them a chance of surviving.

Given their distribution on both sides of the track and into the logging area, it is most probable that additional Onion Cedars were killed in the construction of the road and associated logging operations. Subsequent inspections revealed more Onion Cedars in the vicinity.
When inspected in August the 2 bulldozed trees were still alive but very sick, with the debris still left around them. This was raised in a complaint handed to the Minister for the Environment on 29 August. When last inspected at the end of October, there had still been no attempt to recover any of the trees.

Onion Cedar is a distinctive and obvious plant and could not be missed by any competent botanist, or even a well trained forester, particularly as they were the only plant being targeted. Many of the individuals were young trees with leaves at eye height - you would have to be blind to miss them. It is evident that the Forestry Corporation has not had “an adequately trained person” “conduct a thorough search” for threatened plants in contravention of both TSL 5.2.1 (a) (xiv) and Schedule 6 (d) (ii) . We tagged the plants so they could be relocated by the EPA. Due to the EPA’s apparent inability to identify the additional Onion Cedars it is apparent that they do not have the required expertise or will either.

The construction of IFOA crossing 8 through a population of the vulnerable Onion Cedar is in contravention of TSL Schedule 6 (d) (ii) (v), while the undertaking of forestry operations within 20m of these plants, and the subsequent damaging and killing of individuals, is a breach of TSL 5.1 (b), 5.2.1 (a) (xiv), 5.4 (e)(iv) and “6.23 Threatened and Protected Flora: 20 metres Exclusion Zones, all individuals”. (see also section 4.2, Case 1: IFOA Crossing 8).

Though given that most of these breaches occurred in the EEC Lowland Rainforest, they are likely direct contraventions of the NPW Act 118(a), (d).

### 3.2. Ripple-leaf Muttonwood

The largest known population of the Endangered Ripple-leaf Muttonwood Myrsine richmondensis has been recorded nearby “in tall open forest dominated by Brush Box (Lophostemon confertus), Blue Gum (Eucalyptus saligna) and Tallowwood (E. microcorys) with a rainforest subcanopy” (Recovery Plan 2004) and apparently suitable habitat exists in these compartments. The
Harvesting Plan does not even acknowledge the possible presence of this species within the logging area. This is a hard species to identify, even by a trained botanist. Nobody capable of identifying this species has apparently been looking before they log.

**Requirements**

All known Ripple-leaf Muttonwood populations are threatened by weed invasion and competition, with Lantana (*Lantana camara*) a particular problem at Cherry Tree, the Recovery Plan (2004) noting “The Ripple-leaf Muttonwood appears to be subject to direct competition from the weed Lantana (*Lantana camara*) as both species’ preferred habitat include wet forest margins in areas with fertile soil”.

The Recovery Plan recommends that pre-logging surveys should be undertaken and any plants found protected by 50m buffers. The TSL (6.22) requires that for Ripple-leaf Muttonwood (previously known as *Rapanea* sp. A, Richmond River) a 50 metre Exclusion Zone is required to be implemented around all individuals.

**Findings**

The concern now is that Ripple-leaf Muttonwood are likely to occur within the logging area and any that survived the logging are particularly vulnerable to the post-logging burn in the short term, and the proliferation of lantana in the long term. NEFA still maintains that there is a need for a competent botanist to search the logged area before it is burnt.
4. Rampaging Through Rainforest

These compartments adjoin the Mallanganee National Park, with its World Heritage listed subtropical Dry Rainforests. These compartments in Cherry Tree State Forest are an extension of those world heritage forests. They are a dry form of the Endangered Ecological Community 'Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions'. They intergrade with eucalypt forests to form a distinct ecological community comprising a rainforest understorey dominated by Steel Box, *Eucalyptus rummeryi*.

These Steel Box dominated rainforests are regionally rare, but are fairly extensive within this area. Steel box is a listed rare species. ROTAP: 3RC-. They deserve to be identified as a distinct ecological community, though are mostly mapped here as forest type 71 Richmond Range Spotted Gum.

Five "IFOA crossings" have been approved and constructed through mapped rainforest, with another unapproved one also constructed. Some stands of unmapped rainforest have been excluded from logging, though some stands have been logged, and logging has intruded across marked boundaries of both mapped and unmapped rainforest in many places.

From our initial visit NEFA identified that "The roading through the IFOA rainforest has caused significant damage to the rainforest and the soils" and raised our concerns about forestry operations extending into unmapped rainforest, noting:

> We observed a number of areas where we considered roading and logging had extended into the margins of stands satisfying Forest Practices Circular 2005/02. These require further documenting.

The significance of these actions is accentuated by most of the rainforest being the Endangered Ecological Community Lowland Rainforest and thus not covered by the Threatened Species Licence. Logging of such stands is thus illegal under the National Parks and Wildlife Act.

While some small parts of the Steel Box dominated rainforests have been protected as mapped rainforest, regrettably most has been heavily logged and the rainforest understorey extensively trashed.

The root cause of the problems found with rainforest management is the Forestry Corporation's ongoing belligerence towards protecting rainforest with Brush Box and eucalypt emergents, their contradictory definitions of rainforest, and an antagonistic attitude towards rainforest conservation. They only have themselves to blame for the breaches we have found.

The EPA approved the roads through mapped rainforest here long before logging started. If they had done their due diligence they should have realised that it is Lowland Rainforest. NEFA did not initially identify that this is Lowland Rainforest to the EPA, though given that we raised various concerns regarding damage to rainforest caused by IFOA Crossing 8 and our concerns that unmapped rainforest was being logged, it should have been recognised by the EPA when they investigated our complaints. Had they done so then significant illegal works and damage to an EEC could have been avoided.
4.1. Defining Rainforest

The rainforests in this area occur from 120m to 420m on volcanic soils extending onto Walloon Coal Measures. Therefore by definition they are mostly the Endangered Ecological Community 'Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions'.

Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions is the name given to the ecological community of subtropical rainforest and some related, structurally complex forms of dry rainforest, associated with a range of high-nutrient geological substrates, notably basalts and fine-grained sedimentary rocks, up to 600m. The Scientific Committee identifies "there are structural, habitat and floristic features which, in combination, link all the Lowland Rainforest suballiances, including the presence of emergent trees, variety of leaf and canopy shapes and sizes, the abundance and diversity of vines and vascular epiphytes, the association with nutrient-rich lithic substrates".

It specifically includes the Flindersia spp. - Araucaria suballiance which is characteristic of the adjacent Mallanganee National Park. Unlike Forestry Corporation definitions, it includes Brush Box as a characteristic species and recognises that "Scattered eucalypt emergents (e.g. Eucalyptus grandis, E. saligna) may occasionally be present. In disturbed stands of this community the canopy continuity may be broken, or the canopy may be smothered by exotic vines".

The Forestry Corporation's Threatened Species Pre-logging and Pre-roading Survey Report, along with the Harvesting Plan, wrongly identify the EEC Lowland Rainforest as "unlikely to be present". The Harvesting Plan also notes:

6.6 Unmapped Rainforest
Unmapped rainforest is to be identified and marked for retention in accordance with Forest Practices Circular 2005/02.

6.7 Endangered Ecological Communities
Endangered Ecological Community (EEC) 'Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions' is potentially present within these compartments outside the mapped rainforest extent. Areas of this forest community should be identified as described in the FNSW EEC Identification Guide, and if present within the operation area, excluded from harvesting.

Forest Practices Circular 2005/02 (the Rainforest Protocol) identifies that:

... logging should be excluded from areas (with a minimum area of 0.5 ha), where:

- a) the number of mature hardwood trees (ie, trees with diameters at breast height of at least 60 cm) is less than five trees per hectare and where there is little or no recent or advanced regeneration from the established sclerophyll overstorey and
- b) there is little or no evidence (from hardwood stumps) that the area was originally a hardwood dominated stand that has failed to regenerate, and
- c) there is a well developed rainforest canopy which is comprised of at least five mature rainforest trees (ie trees with diameters at breast height of at least 45 cm) per hectare. (Rainforest trees include recognised rainforest species but not eucalypts, Turpentine or Brush Box).

The FCNSW 'EEC Field Identification Guide' notes that to be the EEC Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions, a site must have all of the following features:

- Altitude less than 600 m; and
- Canopy with no more than scattered eucalypt emergents; and
At least five species of rainforest canopy trees; and
Brush box contributes no more than 50% of canopy cover.

As well as the above, the field guide puts forward two key questions, that if the "answer is no, the area is Lowland rainforest EEC":

- Is the spacing between adjacent trees of at least 60 cm diameter, of any eucalypts (Angophora, Corymbia or Eucalyptus) or turpentine (Syncarpia glomulifera), less than 45 m?
- Do eucalypts (Angophora, Corymbia or Eucalyptus) and turpentine (Syncarpia glomulifera), either individually or combined, contribute more than 5% of the total canopy cover?

NEFA does not agree with this restrictive thresholds put forward for the Brush Box component, eucalypt spacing, and eucalypt canopy cover - considering the 5% eucalypt canopy cover an absurd limitation. Never-the-less, based on this restrictive definition, most mapped rainforests, and considerable areas of unmapped rainforest, within the Cherry Tree compartments are clearly the Endangered Ecological Community 'Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions'. NEFA have looked at the latest version of the harvesting plan (20/3/15) and there is no mention of finding the EEC. In response to a request, the Forestry Corporation informed us (6/11/2015) that they "don't have any further information on hand regarding EEC identification in this harvesting unit". It was not reasonable for the Forestry Corporation not to recognise that most rainforests within this area clearly satisfied their own criteria for identification as an EEC.

Requirements

Under "Authorisation" the Threatened Species Licence states:

This licence does not authorise the carrying out of an activity that is likely to:

1. Harm an endangered population or an endangered ecological community (as far as animals are concerned);
2. Result in the picking of a plant that is part of an endangered population or endangered community;
3. Damage critical habitat; or
4. Damage to the habitat of an endangered population or endangered community.

As the Threatened Species Licence does not authorise logging operations in EECs, the National Parks and Wildlife Act 1974 is the primary authority, and it is this Act that Forests NSW have directly contravened. The National Parks and Wildlife Act 1974 No 80 states:

118A Harming or picking threatened species, endangered populations or endangered ecological communities

(1) A person must not:
(a) harm any animal that is of, or is part of, a threatened species, an endangered population or an endangered ecological community, or
(b) use any substance, animal, firearm, explosive, net, trap, hunting device or instrument or means whatever for the purpose of harming any such animal.

Penalty:
(a) in respect of any endangered species, population or ecological community—2,000 penalty units or imprisonment for 2 years or both, and, in a case where an animal of any endangered species, population or ecological community is harmed, an additional 100 penalty units in respect of each animal that is harmed,
(2) A person must not pick any plant that is of, or is part of, a threatened species, an endangered population or an endangered ecological community.

Penalty:
(a) in respect of any endangered species, population or ecological community—2,000 penalty units or imprisonment for 2 years or both, and an additional 100 penalty units in respect of each whole plant that was affected by or concerned in the action that constituted the offence,

118D Damage to habitat of threatened species, endangered populations or endangered ecological communities

(1) A person must not damage any habitat of a threatened species, an endangered population or an endangered ecological community if the person knows that the habitat concerned is habitat of that kind.

...

(4) In proceedings for an offence under this section in respect to damage of any habitat of a threatened species, an endangered population or an endangered ecological community, it is to be conclusively presumed that the person knew that the habitat concerned was habitat of that kind if it is established that the damage resulted from an act that:
(a) occurred in the course of the carrying out of development or an activity for which development consent under Part 4 of the Environmental Planning and Assessment Act 1979 or an approval to which part 5 of that Act applies was required but not obtained; or
(b) constituted a failure to comply with any such development consent or approval.

...

(6) in this section "damage includes cause or permit damage.

Findings

From a cursory reading of the description of Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions it was evident that the rainforests in Cherry Tree State Forest were encompassed. It was not reasonable for the Forestry Corporation (nor the EPA) not to have recognised this. Their pretence that the EEC Lowland Rainforest was "unlikely to be present" was patently false, as it was unlikely not to be Lowland Rainforest, except where it had more than "scattered" eucalypt emergents.

The delineation of rainforest in Cherry Tree SF is thus complicated by the fact that most stands occurring here should be classified as the Endangered Ecological Community Lowland Rainforest, including stands with Brush Box, and with "scattered eucalypt emergents". Due to the Forestry Corporation’s long battle to exclude Brush Box from inclusion in rainforest (historically known as "brush") "Rainforest Box" is expressly excluded from rainforest under their 'Rainforest Protocol'. This falls down with the EEC Lowland Rainforest as Brush Box is expressly identified as a characteristic species, so for this EEC the Forestry Corporation accept up to 50% Brush Box. The Forestry Corporation’s rainforest definitions under their "Rainforest Protocol” and their EEC Field Identification Guide for the EEC Lowland Rainforest are thus inconsistent and contradictory. This is a recipe for disaster.
NEFA recognises that the determination for Lowland Rainforest allows that "Scattered eucalypt emergents (e.g. Eucalyptus grandis, E. saligna) may occasionally be present". This is not objectively defined and is thus open to interpretation. The Forestry Corporation's emphasis on commercial values means they continually try to skew their definition to exclude rainforest with eucalypt emergents, historically adopting 10% canopy cover by eucalypts as being enough to exclude a forest being identified as rainforest. They go one better with Lowland Rainforest, interpreting "scattered eucalypt emergents" to mean less than 5% canopy cover by eucalypts.

While it is apparent that the Lowland Rainforest definition allows for eucalypt species other than Flooded Gum and Blue Gum, the term "scattered" does require that the eucalypt canopy has broken up and become irregular. NEFA considers the Forestry Corporation's limitations of less than 45m spacings and more than 5% canopy cover of eucalypts as ruling out Lowland Rainforest is extreme and ridiculous.

Australia's forests are defined as vegetation that has a height of 2 metres, crown canopy cover of at least 20% and a minimum forest area of 0.2 hectares. For tall eucalypt forests the canopy threshold is much higher. Given that a eucalypt forest is no longer a eucalypt forest once the canopy drops below 20% this implies the canopy has become scattered, particularly where the canopy cover is irregular. For the Comprehensive Regional Assessment a threshold of less than around 30-35% canopy cover by eucalypts (as determined from aerial photographs) was adopted for defining rainforest.

For a rainforest, once the canopy cover of emergent eucalypts drops below 30% there is usually a dense rainforest canopy underneath and little, if any, eucalypt regeneration. The emergent eucalypts form a broken and irregular canopy with many gaps and breaks. This is most apparent when considered on the basis of the whole mapped polygon - i.e. one part of a mapped polygon may have a higher density of eucalypts, though when considered in context they are scattered. Therefore NEFA considers that the criteria applied in the CRA for the mapping of rainforest generally requires that the eucalypt emergents have become scattered and that therefore most mapped rainforest should qualify as Lowland Rainforest where it satisfies the elevation and floristic requirements.

Unmapped rainforests are extensive in this area, with the delineation of boundaries complicated by the presence of rainforest in various stages of development under eucalypt emergents. This is further complicated by the Steel Box (Eucalyptus rummeryi) dominated dry rainforests, which are deserving of identification, mapping and protection as a distinct Endangered Ecological Community in their own right.

There is a simpler rainforest definition used for private properties that encompasses both rainforest (as defined in the RFA) and Lowland Rainforest. The 2004 DEC/DIPNR Field Guide "Identification of Rainforest" defines rainforest as:

Rainforest is tree-dominated vegetation where the tree stratum with the greatest crown cover (not necessarily the tallest stratum) has rainforest species making up 50% or more of the crown cover. This stratum is usually, but not always, closed (with a projective foliage cover greater than 70%).

The Field Guide also specifies that "species such as Brush Box (Lophostemon confertus) and Blackwood (Acacia melanoxylon) are rainforest species".
The nub of the problem with the Forestry Corporation's delineation of rainforest is their continued antagonism towards protecting stands that have any species they can log. This is evidenced by their convoluted and contradictory rainforest definitions, and reflected in their descriptions of the rainforest on all IFOA Crossings as only having "rainforest elements", going so far as to describe one stand as "field verified as dominantly Spotted Gum, Grey Gum and White Mahogany with some rainforest understorey elements" when most of the crossing was mature rainforest with no eucalypt emergents at all. What they need is a clear and consistent rainforest definition, and a will to implement it.

To help resolve the status of rainforests in Cherry Tree SF, NEFA engaged the services of botanist Andrew Murray to assess the floristics and structure of rainforest on IFOA Crossings 2, 8 and 9, along with H&R Crossing 1, as these were considered to represent the range of rainforest forms occurring across the logging area. The specific aim was to determine whether they constitute the Endangered Ecological Community (EEC) Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions.

Mr. Murray found (Appendix 5) that floristically all rainforests he inspected in Cherry Tree SF are consistent with the Scientific Committee's determination for Lowland Rainforest, with the majority of rainforest canopy species at all sites identified by the Scientific Committee as being characteristic of Lowland Rainforest. The floristic sub-alliances were also found to be consistent with the Scientific Committee's determination. Based on Mr. Murray's floristic assessment and the elevation of these rainforests being 120m to 420m, there can be no doubt that they qualify as Lowland Rainforest, except where they have more than scattered eucalypt emergents.

So while there may be debate about what constitutes "scattered eucalypt emergents" there can be no doubt that most of the rainforest in this area qualifies as Lowland Rainforest. Applying the Forestry Corporation's own EEC Field Identification Guide readily identifies most of the rainforest here as Lowland Rainforest (ie it is below 600m altitude). It was thus clearly wrong for the Ecology report and Harvesting Plan not to recognise the actual presence of this EEC in these compartments.

NEFA also considers that this should have been readily apparent to the EPA if they had any botanical expertise. The delineation of Lowland Rainforest has been the subject of a variety of complaints by NEFA and other conservation groups in the past, so neither the Forestry Corporation nor the EPA can claim ignorance. The Forestry Corporation's and EPA's failure to recognise Lowland Rainforest at Whian Whian was one of our key complaints, with both the same teams involved in Cherry Tree. NEFA also considers that Lowland Rainforest occurs outside mapped rainforest in various locations, and certainly encompasses any additional areas delineated as rainforest by the Forestry Corporation.

4.2. Approved Roading Through Rainforest

At the Forestry Corporation's request the EPA have approved 5 "IFOA crossings" through mapped rainforest, which were claimed the Forestry Corporation to represent 890 m of track, and result in the clearing 4,450m² of rainforest. NEFA have also identified that the "H&R Crossing 1" passes through mapped rainforest, though was not apparently approved by the EPA. The EPA approved "IFOA Crossing 1" also passes through a narrow band of Lowland Rainforest.
The crossings were based on superficial and erroneous assessments, some with no justification, and resulted in significant ongoing environmental degradation. Most significantly, some were constructed through the EEC Lowland Rainforest and are thus not covered by the Threatened Species Licence. Therefore any approvals obtained under the TSL are irrelevant and they involved the illegal picking and harming of an Endangered Ecological Community.

Requirements

The 1999 Forest Agreement for Upper North East NSW (2.4.4.5.) requires that "For the larger, more significant exclusion areas a management plan must be prepared by SFNSW by 1 January 2002", specifying:

Construction of roads and trails through areas of rainforest, high conservation value old growth forest and rare and non-commercial forest on NPWS estate will only be considered where a Plan of Management is in place.

As with many requirements this was never complied with. Instead in 2003 both the IFOA and TSL were amended to allow roading in rainforest without a Management Plan first being prepared. Requirements for track crossings through mapped rainforest are now mandated in the IFOA (10) and the TSL (5.4 (e)). The TSL 5.4 (e)(i) only allows them where "there is no practicable alternative site available", 5.4 (e)(iii) only if "all practicable measures are taken to minimise any adverse impacts of the construction on the environment" and 5.4 (e)(iv) only if "such areas are not in exclusion zones relating to threatened species referred to in condition 5.1 (b) unless carried out in accordance with condition 5.1 (b)".

The TSL 5.1. (b) specifies that "The construction, reopening and operation of tracks used for the purposes of snigging and roads in exclusion zones implemented under ... 6.14 Koala ... 6.23 Threatened Flora ... is only permitted with the prior written approval of the NPWS".

Because the Forestry Corporation wanted to construct their tracks through mapped rainforest they required the prior approval of the EPA. Schedule 6 of the TSL requires that the Forestry Corporation provide a report to the EPA which includes (a) "...why ... other routes were not considered feasible", (b) "reasons why the road or snig track must be established", (c) "The mitigative and ameliorative measures to be applied", and:

(d) Results of the field assessment which must be undertaken and must include:

i. A description of the proposed road or snig track, including dimensions of area to be affected (road footprint, run-offs etc), method of construction including any cutting and filling that may be involved, and construction of any stream crossings.

ii. An assessment and description of any threatened flora that will or is likely to be directly or indirectly affected by construction, or occurs within 50 metres of the construction area.

iii. An assessment and description of any threatened fauna that

1. will be or is likely to be directly or indirectly affected by construction, OR
2. occurs within 100 metres of the construction area.

iv. An assessment and description of the likelihood of the road to create a barrier to movement of threatened fauna, or is otherwise likely to increase the threats to threatened fauna.

v. An assessment of any habitat features that will or are likely to be directly or indirectly affected by the construction, including but not confined to: wetlands or other waterbodies; and threatened species habitat.

vi. An assessment and description of the area affected including, but not confined to:
1. the type of High Conservation Value Old Growth Forest or Rainforest or Rare Non-Commercial Forest Types or protection zone (according to RN17);
2. a brief description of the floristics and structure of the High Conservation Value Old Growth Forest or Rainforest or Rare Non-Commercial Forest Types or protection zone;
3. a description of the total area of the High Conservation Value Old Growth Forest or Rainforest or Rare Non-Commercial Forest Types or protection zone to be directly and indirectly affected;
4. the likelihood of the road to fragment the High Conservation Value Old Growth Forest or Rainforest or Rare Non-Commercial Forest Types or protection zone patch; and
5. whether the rainforest is SEPP 26 littoral rainforest.

vii. An assessment of the likelihood of the construction increasing the presence or abundance of weeds or feral animals.

viii. An assessment of past disturbance in the proposed construction area.

The Harvesting Plan identifies that for the construction of IFOA crossings through rainforest:

No debris to be placed against standing trees, place debris outside rainforest area, and drain to EPL standard on completion of snigging.

Findings
The Forestry Corporation's appraisal of these works is simplistic, superficial and in some cases fraudulent. They are copy and paste documents with no meaningful assessments. They misrepresent the vegetation, fail to identify the presence of Lowland Rainforest, fail to consider impacts on threatened plants or animals, and ignore the likely consequences.

The "assessments" are merely a tick-the-box exercise that the EPA have accepted as satisfying requirements without any professional review - they have failed their duty of care.

For example the assessments for IFOA Crossings 1, 2 and 4 were apparently undertaken by the same forester on the same day. Crossing 1 is across a stream whereas Crossings 2 and 4 are both on tops of ridges a long way from riparian areas, and thus filter strips, yet the assessments for all three state for 'Construction details' "Construct snig track with dozer/skidder, remove debris from filter strip, repair snig track, and drain to EPL on completion", and for 'Required mitigative measures' "Minimise size of snig track, remove debris outside filter strip and drain to EPL on completion of snigging". Similarly the "assessments" are identical for 'Reasons for selecting route', ' Reasons for rejecting other routes', 'Threatened flora affected', ' Threatened fauna affected', ' Species habitat affected', ' Fauna barrier created', 'Increased threats to fauna', 'Likelihood of fragmentation', ' Likely increase of weeds', 'Likely increase of feral animals', and 'Assessment of past disturbance'. The rest are mostly cut and paste, with some variations.

The other 3 assessments we have, of IFOA Crossings 7, 8 and 9 are also often identical to the above or have minor variations. It is a sham process.

For their consideration of rainforest "Floristic/structure description" the Forestry Corporation limit their assessment of rainforest to identifying the presence of "rainforest understorey elements", even where there is not a eucalypt in sight and the canopy is just formed of rainforest species. Aside from admitting that some of it was mapped by the Forestry Corporation as Forest Type 21 half a century ago, they appear unwilling to admit that rainforest is actually present, let alone identify that it belongs to a rainforest floristic association. This is taken to the extreme for IFOA Crossing 8 which
passes through well developed rainforest, but is fraudulently described as "field verified as dominantly Spotted Gum, Grey Gum and White Mahogany with some rainforest understorey elements".

For comparison, NEFA engaged botanist Andrew Murray to prepare a "brief description of the floristics and structure" for IFOA crossings 2, 8, 9 and H&R crossing 1 which are presented in Appendix 5. These clearly show how puerile and grossly inadequate the Forestry Corporation's assessments are. They also make it obvious that if the Forestry Corporation had of bothered doing a proper assessment then they should have recognised the presence of the EEC Lowland Rainforest. Even a cursory assessment in accordance with the FCNSW EEC Field Identification Guide would have recognised that it is the EEC Lowland Rainforest. Had the EPA reviewed the Forestry Corporation's claims then they should have recognised their gross deficiencies and done something about it. Unfortunately the EPA are just a rubber stamp and obviously don't care about the quality of the assessments.

For every crossing the Forestry Corporation claim in relation to threatened fauna and flora "Nil identified during FCNSW survey". There has been no attempt to identify species known or likely to occur on any of the crossings, and their "surveys" were unable to identify species that were obviously present. For example, they failed to identify the abundant Koala scratch marks on trees at crossings 7, 8 and 9, or the Onion Cedars on crossing 8 (see Cases 1 and 3 below). Similarly, the Forestry Corporation have dismissed any "likelihood of the road to create a barrier to movement of threatened fauna" on the basis that they mostly constitute existing tracks, when they often don't or are not cleared and have decades of regeneration.

For each crossing the Forestry Corporation claim that an increase in weeds is "Unlikely, lantana already widespread throughout the" (a) "area" or (b) "drainage feature and adjacent forest". To the contrary, lantana is patchily distributed throughout the area with significant parts of each crossing with little or no lantana. As lantana responds favourably to logging and other disturbances, it will significantly increase as a result of the vegetation and soil disturbances associated with these works. Given that Lantana is recognised as being a major threat to Lowland Rainforest and Onion Cedar, it is particularly reprehensible that the Forestry Corporation couldn't be bothered assessing its impact and that the EPA didn't care.

Similarly the Forestry Corporation dismiss the "Likely increase of feral animals" in every case on the basis that "feral animals are known to inhabit the area already" without any consideration of the abundant literature on roads increasing predation or the individual circumstances. During our investigations we identified that "wild dogs" and cattle were following tracks, with one cow apparently following IFOA Crossing 8, through the rainforest and past the Onion Cedars, to wander around beyond it.

**Case 1: IFOA Crossing 8**

This roading involved an "IFOA crossing" in two parts. The Forestry Corporation give the length as 300m. By our reckoning, one section is about 87m and the other about 162m through mapped rainforest. Unmapped rainforest, delineated as rainforest by the Forestry Corporation, adjoins the track for a further 76m. The constructed track deviates significantly from the mapped track.

The information provided by the Forestry Corporation to the EPA in accordance with TSL Schedule 6 for "IFOA crossing 8. Cpt 360 Cherry Tree SF" is considered by NEFA to be grossly inadequate,
The Forestry Corporation blatantly lied when they described Crossing 8 to the EPA as "Mapped as Hoop Pine (type 21) and Flooded Gum (type 48) however field verified as dominantly Spotted Gum, Grey Gum and White Mahogany with some rainforest understorey elements". Crossing 8 passes through two parts of the rainforest with mapped eucalypt forest between them. NEFA is in no doubt that the rainforest mapping in the vicinity of Crossing 8 is relatively accurate, except that rainforest is clearly more extensive to the east than mapped and the rainforest is less extensive to the west in the vicinity of Crossing 7.

NEFA engaged botanist Andrew Murray to assess the floristics and structure of the mapped rainforests on Crossing 8 (Appendix 5), finding:

*The floristics are characteristic of the Argyrodendron actinophyllum - Dendrocnide excelsa - Ficus suballiance of Floyd 1990. This suballiance is listed as being part of Lowland Rainforest EEC when it occurs at its lower altitudinal limits, as it does here at around 300m ASL, in association with the principal Flindersia spp.-Araucaria suballiance that is widespread in the adjacent Mallanganee NP and along the Range to the south.*

The can be no doubt that the rainforests on Crossing 8 belongs to the Black Booyong-Giant Stinging Tree-Strangler Fig rainforest sub-alliance and that the mapped rainforest is well developed Lowland Rainforest with a few eucalypts on the margins, and does qualify as rainforest under any interpretation. The Forestry Corporation made no attempt to accurately identify the type of rainforest...
or its *floristics and structure*. Though the Forestry Corporation’s claim that it is not really rainforest is fraudulent.

Rainforest along IFOA Crossing 8, note the obvious buttresses. The rainforest here clearly belongs to the Black Booyong-Giant Stinging Tree-Strangler Fig sub-alliance and is unequivocally both rainforest and the Endangered Ecological Community (EEC) Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions.
This forest along IFOA crossing 8 is obviously rainforest, and not eucalypt forest "with some rainforest understorey elements" as fraudulently claimed by the Forestry Corporation.

The margin of the rainforest at the start of IFOA Crossing 8 has been subject to past heavy logging, though appeared to generally be regenerating well, with vines smothering some trees. There were no eucalypts in the regeneration.
The Forestry Corporation claim "An existing snig track coincides with part of the proposed snig track route", This would seem to be correct. In the photo above there is evidence of a cutting from an old track on the right half of the photo, though the constructed track on the left did not follow it. Similarly where the crossing was proposed to exit the rainforest to the east there were indications of an old track, though the Forestry Corporation used a totally different route 100m away.
Contrary to the requirements to minimise impacts, the rainforest at the start of IFOA crossing 8 was heavily impacted, with large areas cleared and trees bulldozed into piles. The Forestry Corporation identified the need to "Minimise size of snig track", with this claimed to be a "3m wide skidder wheel track, 5m wide track prism", and with "No debris to be placed against standing trees, place debris outside rainforest area", but in practice debris was also pushed into piles against trees along the side of the track, with the track "prism" being 8-10m wide. Numerous trees 15 to 20cm dbhob were bulldozed out, with some up to 37cm dbhob.
The re-routed eastern section of the crossing did not follow an old track, as evidenced by the large boulders and trees (34cm dbhob) bulldozed out of the way.

The road “prism” is generally 6-8m wide, with debris pushed far further into the rainforest in places.

The TSL Schedule 6(d) (ii) requires “An assessment and description of any threatened flora that will or is likely to be directly or indirectly affected by construction, or occurs within 50 metres of the construction area”. The harvesting plan identifies Onion Cedar as the only significant species likely to occur, and identifies a record on the other side of this stand. It should have been the focus of any investigation, and with its large and distinctive leaves it should have been seen by anyone looking for it as it is right beside the track, and is likely to have been on the track. It is self-evident from the claim that for “Threatened flora affected”, “Nil identified during FCNSW survey … inspected -
07/01/2015” that the person who reputedly inspected the route could not have been trained to look for this species (see 3. Threatening Threatened Plants).

Onion Cedar is one of the characteristic species of Lowland Rainforest. The Border Ranges Rainforest Biodiversity Management Plan (see section 2) constitutes the official recovery plan for Onion Cedar, though has not been implemented for these operations. The OEH website identifies threats to include "Clearing and fragmentation of habitat for ... road-works", and “Weed invasion, primarily *Lantana camara*. Thus the failure to meaningfully consider weeds and fragmentation are major deficiencies with the Forestry Corporation's cut and paste approach.

The TSL Schedule 6(d) (vii) requires "An assessment of the likelihood of the construction increasing the presence or abundance of weeds or feral animals". The Forestry Corporation's claim that an increase in weeds is "unlikely" because "lantana already widespread throughout area" is a nonsense because it is not yet widespread on the track route, which clearly had large areas of intact rainforest. It is highly likely that there will be an increase in lantana as a result of the roading, which will have adverse consequences for Onion Cedar and rainforest regeneration, which should have been readily apparent to the Forestry Corporation.

The TSL Schedule 6(d) (iii) requires "An assessment and description of any threatened fauna that will be or is likely to be directly or indirectly affected by construction", and (iv) "An assessment and description of the likelihood of the road to create a barrier to movement of threatened fauna, or is otherwise likely to increase the threats to threatened fauna". There are numerous records of Wompoo Fruit Doves and Grey-headed Flying-fox in the vicinity that should have been considered because they are likely to be affected by removal of rainforest fruit trees. NEFA also heard Wompoo Fruit Doves at 2 locations in the vicinity of the track. There are also numerous records of Black-striped Wallabies in the vicinity and they are likely to be vulnerable to increased ingress of predators (including feral foxes) using the track.

NEFA also observed numerous Koala scratch marks on Grey Gums in the vicinity of the track, while these are peripheral to the rainforest they should have been identified and considered. This Grey Gum is at the beginning of, and immediately adjacent to, crossing 8. Obvious use is particularly evident along the eucalypt dominated IFOA Crossing 7 though was similarly ignored.
An intermittent perched swamp is located 7m from Crossing 8 (AMG 475841, 6799432) that should have been identified and considered as a waterbody and habitat feature in accordance with Schedule 6(d) (v). When first inspected in March this was full of water. The failure to recognise this is further proof of the lack of any meaningful assessment of the route.
Damage to trunks and roots of retained trees in the rainforest, often a considerable distance from the track. Note the deep rutting and root damage.
The roading through the IFOA rainforest has caused significant damage to the rainforest and the soils.

The TSL (5.4 (e)(iii)) only allows for IFOA crossings if “all practicable measures are taken to minimise any adverse impacts of the construction on the environment”. It is apparent that damage was not minimised in track construction with trees and debris pushed into the rainforest and left there. Their approved roading through mapped IFOA rainforest has violated threatened species requirements, recklessly damaged surrounding forest, and caused major soil disturbance due to use while the soil was saturated. Soil and vegetation rehabilitation is urgently required.

On crossing 8 the Forestry Corporation bulldozed through a stand of Onion Cedars, cleared well in excess of what was required, caused significant and needless butt and root damage to many trees along the track, left debris piled within the exclusion area, caused severe rutting and soil damage - likely also compacting soil for some distance around the track, and created conditions suitable for the proliferation of lantana.

**Case 2: IFOA crossing 2.**

The Forestry Corporation claim “Some SG present in field along with moist hardwood species with lantana and rainforest understorey elements”, though at the crossing site it was predominately Steel Box and Grey Gum over a dense low dry rainforest understorey, with little lantana.

NEFA engaged botanist Andrew Murray to describe the floristics and structure of Crossing 2 (Appendix 5), who found:

*The stand of Steel Box-Grey Gum woodland on the ridge at this location has a dry rainforest understorey that forms the majority of the foliage cover for this community. The floristic*
composition of the rainforest sub-canopy is consistent with a drier variant of the Flindersia spp.-Araucaria suballiance that is widespread in the adjacent Mallanganee NP.

In the immediate vicinity of Crossing 2 there is more than a scattered canopy of eucalypts, which may exclude the actual crossing as being defined as Lowland Rainforest, though it remains evident that the Forestry Corporation did not adequately describe the floristics or structure of the vegetation.

The justification for this crossing is "To access ridge north of dump 4 isolated by steep terrain and exclusion zones". It is claimed it will cost "$>3,700 in roadwork costs including two 6m pontoon bridge installations. Greater disturbance to construct additional dump and extra 600m section of temporary road (on >20 degree slope) and crossing construction to haulage standard". This is a blatant lie. Aside from the fact it is north of log dump 5, the area is to the south of log dump 7 and readily accessed from there. There is a track that follows the ridge down from log dump 7 all the way to crossing 2. It appears that from only 150-200 metres up a moderate ridge from crossing 2 that all logs were hauled up to log dump 7. All of the area north of crossing 2 could have been carted to log dump 7 without any additional roadworks, and certainly without pontoon bridges an extra log dump, or an extra 600m (or even 1m) of roads.

The Forestry Corporation cannot justify their pretence of there being "no practicable alternative" for this crossing, it is thus not justifiable under TSL (5.4 (e)(i)) and should never have been allowed.
NEFA Audit of Cherry Tree SF

IFOA crossing 2. Note the excessive width, with the arrow pointing to a marked boundary tree pushed over, and the debris within the crossing.

The large numbers of rainforest trees pushed into and out of the exclusion area contradicts the claim that it was an existing snig-track. LEFT: Looking up into the exclusion area, with the tree on left marked as the boundary. RIGHT: debris pushed out of exclusion area at the bottom.

As part of their justification for constructing this track and their pretence that it would have no impact, the Forestry Corporation claimed it was an "existing track" and "proposed crossing is likely an historic snig track". Though no physical evidence of this being an historic track was observed and the large number of trees removed indicates that there was no existing track. The old side-cut track was found around 100m away. Based on these apparently false claims the Forestry Corporation claimed there would be "No" "Fauna barrier created" and "Nil" "likelihood of fragmentation".

This area clearly had a dense rainforest understorey which has been removed by the track construction, clearly fragmenting the rainforest by separating an area of rainforest to the east from a larger area to the west. It is wrong for the Forestry Corporation to claim it will not create a fauna
NEFA Audit of Cherry Tree SF

barrier and does not result in fragmentation when it clearly does. The EPA should not have blithely accepted such claims.

Above IFOA Crossing 2 spoil and trees from the road crossing, and logging debris, was pushed across and well into the marked rainforest and FMZ 2 boundary. One of the Bats Wing Coral trees pushed over had a 27cm dbhob. All these photos are within the marked rainforest.

The major incursion across the marked rainforest boundary at the top of Crossing 2 was into rainforest with few eucalypt emergents, it is a drier variant of the Flindersia spp.-Araucaria
suballiance that is widespread in the adjacent Mallanganee NP, which NEFA considers does qualify as Lowland Rainforest at this locality.

The identified mitigation measures are "Minimise size of snig track, remove debris outside filter strip and drain to EPL on completion of snigging". The crossing is on the crest of a ridge, so there is no filter strip issue. While the Forestry Corporation identify the width to be 5 m, it was much larger than this, being up to 20m at the top where debris was pushed off to one side.

Contrary to the Forestry Corporation's other claims, the rainforest understorey here was well developed and, being dry rainforest on a ridge, naturally of low stature. It has probably not been subject to TSI in the past, though would have been logged (including for Hoop Pine). There was little lantana on the track route, though given the removal of the dense rainforest sub-canopy, and large patches of lantana where this has occurred in the past nearby, it is expected to proliferate as a result of these operations.

Case 3: IFOA crossing 9

IFOA crossing 9 passes for some 230m through a mapped rainforest exclusion zoned as FMZ 2. The Forestry Corporation's assessment undertaken in accordance with section (d) of Schedule 6 of the TSL, as submitted to the EPA for approval, for "Floristic/structure description" states: "Mapped as Hoop Pine (type 21) and Richmond Range Spotted Gum (type 71), field verified as having rainforest elements". This does not constitute "a brief description of the floristics and structure".
NEFA engaged botanist Andrew Murray to undertake an assessment of the floristics and structure of IFOA Crossing 9 (Appendix 5), who found:

The floristic composition of the site is predominantly rainforest species, a majority of which are listed as characteristic of Lowland Rainforest EEC by the Scientific Committee. The floristic composition is consistent with a drier variant of the Flindersia spp.-Araucaria rainforest suballiance (Suballiance 22 of Floyd 1990) that is widespread in the adjacent Mallanganee NP.

The presence of scattered Eucalypts Grey Gum and Steel Box at a density that could be described as open woodland makes determination of Lowland Rainforest at this site equivocal, since the gazetted description allows only "scattered" Eucalypts. However, the rainforest canopy is dense, obvious and continuous across the area of the crossing and has been mapped as rainforest by forestry API. Floristic composition and canopy density of the rainforest component of the vegetation is consistent with the species list and floristic suballiances specified in the EEC determination.

In their assessment undertaken in accordance with section (d) of Schedule 6 of the TSL as submitted to the EPA for approval, the Forestry Corporation claim that their IFOA crossing 9 is an existing track. For "construction details" they claim "Maintain existing snig track", for "Required mitigative measures" they claim "Snig track to stay within existing prism", for "Fauna barrier created" they claim "Nil, existing snig track", and for "Assessment of past disturbance" they claim "Used as snig track in the past".
On NEFA's inspection we found no evidence that the track had been used as a snig track in the past (ie no old soil disturbance or cuttings), and abundant evidence that numerous rainforest trees in the size range 14-30cm dbhob had been bulldozed over or out of the way in the construction of the current track. At one point a eucalypt 47cm dbhob had been bulldozed out of the ground for the track. The trees sizes and densities along the track were consistent with those found in the adjacent undisturbed vegetation. NEFA does not believe that the track constructed had been used as a snig track in the foreseeable past and that this claim is unsubstantiated, misleading and fraudulent.

Despite numerous and large trees having to be bulldozed out of the ground for the construction of part of IFOA Crossing 9 the Forestry Corporation fraudulently claimed it was an existing snig track.
The TSL (5.4 (e)( iii)) only allows IFOA crossings if "all practicable measures are taken to minimise any adverse impacts of the construction on the environment". The Forestry Corporation claim there will be a "3m wide skidder wheel track, 5m wide track prism", though the track width was found to be 5-8m, with debris pushed to the side beyond this in places. There was also physical damage to trees outside this prism. The operation was careless and caused unnecessary physical damage to soils and vegetation.

The TSL Schedule 6(d) (iii) requires "An assessment and description of any threatened fauna that will be or is likely to be directly or indirectly affected by construction". Part of the route is overtopped by Grey Gums, most of which have obvious and distinctive Koala scratches on their trunks, and a Koala high use tree was found immediately adjacent to the track (see 9.1. Koala Habitat). Even a cursory look would have revealed the presence of Koalas from their claw marks on the trees, and if someone actually looked they should have found some Koala scats. The claim for fauna that "Nil identified during FCNSW survey ... 17/02/2015" merely proves that nobody bothered to look.

Grey Gums showing distinctive Koala scratches should have alerted anybody looking to the presence of Koalas along the track's route.

**Case 4: IFOA crossing 1**

The justification for this crossing was "To access ridge west of dump 4 isolated by steep terrain and exclusion zones". It was claimed the alternative will cost "$20,000 in roadwork costs. Greater disturbance to construct additional dump and extra 500m section of temporary road (on >20 degree slope) and crossing construction to haulage standard". Though the rest of this "isolated" area was accessed through IFOA crossing 4 and the track from there goes all the way through to this area along a ridge. This rationale is utter nonsense as there was no need to construct an additional dump, 500m of track or upgrade another stream crossing to access this area. This crossing was just for convenience. The Forestry Corporation cannot justify their claim of there being "no practicable
alternative" for this crossing, it is thus not in accordance with TSL (5.4 (e)(i)). Alternatively they cannot justify IFOA crossing 4 and could have hauled all their timber out using this crossing.

The Forestry Corporation describe the vegetation as "Brush Box forest (type 53) with eucalypt/rainforest understorey elements". At the crossing the Brush Box has co-dominants of White Cedar, Hoop Pine and Brown Tamarind. NEFA considers that the vegetation at the crossing is, at least in part, Lowland Rainforest.

The Forestry Corporation identify that this is a "2nd order drainage line", as does the harvesting plan. This means that it is required to have a 20m buffer applied. so while the Forestry Corporation obtained a limited exemption to construct a crossing, they went outside this and cleared a large working area to store materials 8m from the creek bank. These are clear breaches of EPL Schedule 4, 20H and 39. Weeks after logging was completed there still had been no attempt to comply with the EPL (Sch. 4 20J) requirement that "Seventy percent ground cover must be achieved on all disturbed soil surfaces in a protection zone within five days of the creation of the disturbance."
A large amount of debris was left in the stream below the crossing, and there was a large area outside the road prism cleared within the 20m stream exclusion zone on the east side, extending to 8m from the stream bank. There was no attempt to minimise disturbance of the riparian exclusion zone at this crossing, with the damage far in excess of that required and extending well outside the approved crossing. The Forestry Corporation did not take “all practicable measures” "to minimise any adverse impacts of the construction on the environment" in accordance with TSL (5.4 (e)(iii)).

The Forestry Corporation claimed the track only needed to be 5 metres wide, though was constructed 11m wide, and was used while saturated resulting in destruction of soil structure. The Environment Protection Licence (EPL) Schedule 4 20E states that "Machinery must not operate in a protection zone when the soil is saturated".

**Case 5: H&R crossing 1**

H&R crossing 1 is identified on a revised harvesting plan (not the one on the website) as an approved Headwater and Ridge (H and R) crossing. The track is clearly shown on the revised harvesting plan as passing through mapped rainforest, yet it is not identified as an IFOA crossing. Given that no information on this crossing was provided to NEFA by the EPA, NEFA assumes it wasn't approved in accordance with TSL Schedule 6, and is thus illegal. (This track is discussed in more detail in Section 6.1. Case 1)

NEFA raised this crossing in a complaint to the Environment Minister in August, not realising at that time that it passed through mapped rainforest, noting "There is concern that, as evidenced by the mature fig and a mature Black Booyong on the other side the track, that the track also passed through unmapped rainforest". At that time our GPS was not working. NEFA subsequently engaged botanist Andrew Murray to assess the rainforest at this crossing (Appendix 5), who found:

> The floristics are characteristic of the Argyrodendron actinophyllum - Dendrocnide excelsa - Ficus suballiance of Floyd 1990. This suballiance is listed as being part of Lowland Rainforest EEC when it occurs at its lower altitudinal limits, as it does here at around 300m ASL, in association with the principal Flindersia spp.-Araucaria suballiance that is widespread in the adjacent Mallanganee NP and along the Range to the south. The presence of emergent Flooded Gum (Eucalyptus grandis) is consistent with the description of scattered emergent Eucalypts in the EEC determination.
Given that the EPA and the Forestry Corporation apparently inspected the area after our initial complaint it will be revealing as to whether they identified that this track passes through Lowland Rainforest.

H&R Crossing 1 has been constructed through mapped and unmapped rainforest that is Lowland Rainforest.

NEFA measured this track as passing through the marked Ridge and Headwater Habitat exclusion zone for 90m, and this approximates its extent through rainforest, only part of which is mapped as rainforest and FMZ 2. Given that no logging occurred it is not apparent why they bothered
accessing this area. There was a lot of environmental degradation, and financial cost, for no purpose. It was an act of needless environmental vandalism.

Extract from a revised harvesting plan showing the proposed "H&R Crossing 1", the grey line above the green arrow shows it going through rainforest (pink) which is also FMZ2, though apparently it was not approved as an "IFOA Crossing".

LEFT: White Cedar 27cm dbhob bulldozed out of track. RIGHT: Excessive soil compaction due to use when saturated.

**Discussion**

The Border Ranges Rainforest Biodiversity Management Plan identifies these rainforests as a priority area and includes as an action "To reduce access for pest animals and weeds, discourage the construction of new roads and tracks in priority areas". Though nobody seems to care.

Though they should be concerned that a large proportion of these tracks pass through the Endangered Ecological Community Lowland Rainforest, as this means that those parts of the tracks passing through this EEC are not indemnified by the TSL and are a direct breach of the NPW Act s118 and were constructed illegally. This crime is made more significant by the shoddy and deceptive nature of the assessments undertaken.
The Forestry Corporation has not complied with TSL Schedule 6 (vi), in that there is no accurate "description of the floristics and structure" of the vegetation for any IFOA crossing, or the likely fragmentation effects. NEFA engaged botanist Andrew Murray to assess the floristics and structure of IFOA Crossings 2, 8 and 9, along with H&R Crossing 1 (Appendix 5), aside from providing examples of what brief assessments of floristics and structure should entail, he identified IFOA Crossing 8 and H&R Crossing 1 as passing through Lowland Rainforest, for IFOA Crossing 9 the classification of part of the crossing as Lowland Rainforest is equivocal depending on further assessment of the eucalypt emergents, and for IFOA Crossing 2 the density of eucalypts in the vicinity of the crossing preclude it being identified as Lowland Rainforest. Based on this, NEFA considers that IFOA Crossings 4 and 7 are not Lowland Rainforest, but that IFOA Crossing 1 appears to pass through a narrow band of Lowland Rainforest.

This means that IFOA Crossings 1 and 8, along with H&R Crossing 1, and possibly part of IFOA Crossing 9, involve illegal works in the EEC Lowland Rainforest. NEFA also considers that works near the start of IFOA Crossing 2 occurred in Lowland Rainforest.

The environment and impact assessments undertaken by the Forestry Corporation were simplistic "cut-and-paste" desktop reviews that do not satisfy the requirements of TSL Schedule 6. A variety of the information provided by the Forestry Corporation to the EPA to justify the proposed IFOA Crossings appears to have been fraudulent, notably:

- Crossings 2 and 9 were not apparently existing tracks as claimed;
- Vegetation on Crossing 8 is clearly rainforest and not eucalypt forest with some rainforest understorey elements as claimed; and,
- The justifications for IFOA Crossings 1 and 2 were fabrications as these were not necessary for the operation.

A significant part of IFOA Crossing 8 did not follow the proposed route and was thus not subject to even a token assessment in accordance with TSL Schedule 6. Despite the Forestry Corporation identifying the route of H&R Crossing 1 passing through mapped rainforest and FMZ 2, it was not apparently considered or assessed under TSL Schedule 6.

The Forestry Corporation can not substantiate their claims of there being "no practicable alternative" for IFOA crossings 1 and 2, they therefore are not justifiable under TSL (5.4 (e)(i)) and should never have been allowed. The track from log dump 7 was traversed down to crossing 2, and most of the track from IFOA Crossing 4 to Crossing 1 was traversed. All of the area north of crossing 2 could have been carted to log dump 7 without any additional roadworks, and certainly without pontoon bridges, an extra log dump, or an extra 600m (or even 1m) of roads as fraudulently claimed. These crossings were for convenience, not need.

As evidenced by the construction of crossing 8 through a large population of the vulnerable Onion Cedar, the Forestry Corporation has not complied with TSL Schedule 6 (ii) in that there has been no "assessment and description of any threatened flora that will or is likely to be directly or indirectly affected by construction" and have constructed an IFOA crossing through what should have been an exclusion zone for threatened plants in contravention of TSL 5.1 (b) and 5.4 (e)(iv).

The Forestry Corporation has not complied with TSL Schedule 6 (iii) in that there has not been an assessment and description of any threatened fauna that is likely to be directly or indirectly affected or occur within 100m, as evidenced by their failure to identify obvious Koala scratch marks at Crossings 7, 8 and 9, and a Koala high use tree at Crossing 9. It is telling that the Forestry
Corporation did not identify a single threatened species as likely to occur at any crossing despite records of Black-striped Wallaby, Wompoo Fruit Dove and Grey-headed Flying Fox nearby, with NEFA recording the Wompoo Fruit Dove on IFOA crossing 8 and H&R Crossing 1.

The Forestry Corporation have been reckless when constructing and using these IFOA crossings, and have not taken "all practicable measures ... to minimise any adverse impacts of the construction on the environment" in accordance with 5.4 (e)(iii). At all crossings they have constructed the road prisms well in excess of what they claimed was necessary, often pushing soil. rocks, debris and trees into adjoining vegetation, and undertaking excessive clearing at some sites for no apparent reasons (such as Crossings 1, 2, and 8). The excessive clearing of Lowland Rainforest outside the claimed road prism at Crossing 8 has blatantly contravened numerous legal requirements relating to rainforest, Lowland Rainforest and Forest Management Zone 2. The excessive clearing outside the claimed road prism, and within the filter strip, at Crossing 1 has contravened EPL Schedule 4 19B, 20 and 39. Through careless construction and use they have also caused unnecessary damage to trees outside the road prism. And by using crossings 1 and 8 when the soil was saturated (in contravention of EPL Schedule 4 20E) they have caused excessive soil compaction and rutting.

In all their assessments the Forestry Corporation have dismissed any "likelihood of the road to create a barrier to movement of threatened fauna" in accordance with Schedule 6 (d) (iv) or any "likelihood of the road to fragment ... Rainforest" in accordance with Schedule 6 (d) (vi) on the often false basis that the crossings are wholly or partly existing tracks. There is sufficient published research to establish that these are real problems, as evidenced by their inclusion as considerations. It is thus grossly irresponsible for the Forestry Corporation to dismiss them without due consideration on spurious grounds, and for the EPA to allow them to do so.

Similarly the Forestry Corporation dismiss "the likelihood of the construction increasing the presence or abundance of weeds or feral animals" in accordance with Schedule 6 (d) (vi) as "unlikely" in all cases all cases on the basis that "lantana already widespread throughout area" and "feral animals are known to inhabit the area already". Again the Forestry Corporation have not considered the published literature identifying roads as increasing predation by feral animals, and the literature identifying the disturbance associated with roading and logging creating opportunities for the invasion and proliferation of weeds, particularly lantana. Our observations of "wild dogs" and cattle using tracks in the area are proof that there is a real problem. The EPA should not have allowed the Forestry Corporation to dismiss these without the required consideration.

In summary NEFA maintains that in constructing and using their IFOA Crossings the Forestry Corporation have:

- fraudulently misrepresented the need to construct roads through protected rainforest (FMZ 2) and riparian areas where alternative access was already provided, in blatant contravention of TSL 5.4 (e)(l) and Schedule 6 (a);
- not accurately described the type of rainforest, its structure or floristics in accordance with TSL Schedule 6 (d)(vi), failing to identify that much of the rainforest is the Endangered Ecological Community Lowland Rainforest and in one case fraudulently misrepresenting Lowland Rainforest as eucalypt forest;
- not taken "all practicable measures" to minimise environmental impacts by clearing for tracks well in excess of their own identified requirements, excessive clearing outside road prisms, damaging retrained trees, degrading soil structure, and pushing debris into retained vegetation, in contravention of TSL 5.4 (e)(iii), EPL Sch. 4 19B, 20, 20E and 39.
• inadequately assessed and misrepresented past disturbance in order to downplay impacts, claiming some crossings followed existing snig tracks when no evidence supported this, in contravention of TSL Schedule 6 (d)(viii);
• failed to assess the impacts on threatened flora in accordance with TSL Schedule 6 (d)(ii) (v) and consequently roaded through the vulnerable Onion Cedar and what should have been exclusion zones established in accordance with TSL 5.1 (b), 5.4 (e)(iv) and 6.23;
• failed to assess threatened fauna in accordance with TSL Schedule 6 (d)(iii), (iv) and (v), with evidence of the presence of Koalas and the likely presence of other species ignored;
• failed to duly consider the likely impacts of creating road clearings on the fragmentation of threatened species habitat and the movements of animals in accordance with TSL Schedule 6 (d) (iv) and (vi); and,
• failed to duly consider the likely increases in lantana and predation by feral animals in accordance with TSL Schedule 6 (d)(vii).

4.3. Logging into Rainforest

The TSL only requires the protection of mapped rainforest. In addition to mapped rainforest there is also a need to identify and protect unmapped rainforest. The Forestry Corporation have adopted a Rainforest Protocol for achieving this, though as areas of unmapped rainforest qualify as the EEC Lowland Rainforest they are not necessarily encompassed by the Rainforest Protocol.

NEFA raised our concerns about forestry operations extending into unmapped rainforest after our initial visit. It is acknowledged that extensive areas of unmapped rainforests have been included in marked exclusion zones, though we remain concerned that unmapped areas qualifying as rainforest are still being logged. With the extensive smashing of the rainforest canopy during logging it is hard to reconstruct where rainforest has been logged, particularly as the dry rainforest forms occurring here are often characterized by low dense canopies of small trees with scattered larger emergents.

NEFA has identified a variety of sites where logging has extended into rainforest, both where the boundary has been marked by the Forestry Corporation and where rainforest has been left in the net logging area.

Requirements

The TSL 5.4 (a) establishes that "Specified forestry activities ... are prohibited within all areas of Rainforest", 5.4 (c) that "Trees must not be felled into Rainforest" except by accident, and 5.4 (d) that "Harvesting machinery is prohibited within areas of Rainforest". The TSL limits its definition of rainforest to mapped rainforest.

The Harvesting Plan notes:

6.6 Unmapped Rainforest

Unmapped rainforest is to be identified and marked for retention in accordance with Forest Practices Circular 2005/02.

Stands of the EEC Lowland Rainforest are not covered by the TSL or the Forest Practices Circular, 2005/02, it is simply an offence to harm or pick them under the NPW Act (see 4.1).
Findings
It is apparent that there has generally been an attempt to delineate the boundary of unmapped rainforest in accordance with the Forestry Corporation’s Rainforest Protocol, though some areas were obviously missed. The extensive and intensive disturbance outside exclusion areas, and the practice of using bulldozers to both delineate and reinforce boundaries, makes it extremely hard to identify where unmapped rainforest has been trashed.

A variety of offences were identified involving incursions across marked rainforest boundaries and a variety involving logging incursions into unmapped and unmarked rainforest.

Case 1, Marked Boundary

Near IFOA Crossing 2 trees and debris were dropped and pushed into the boundary of marked rainforest, with machinery entering the exclusion area (AMG 476322, 6798738). The arrows show the marked exclusion boundary. There was extensive damage and incursions from here across to IFOA Crossing 2. This site is a drier variant of the Flindersia spp.-Araucaria suballiance and thus qualifies as the EEC Lowland Rainforest, botanist Andrew Murray visited this site (Appendix 5, IFOA Crossing 2, site WP 016) noting:

...trees felled across the marked exclusion boundary have impacted on rainforest that has only isolated Eucalypts on the upslope margins and is clearly recognisable Lowland Rainforest EEC based on both floristic and structural definitions.
Case 2, Marked Boundary

Logging, debris, spoil and machinery disturbance within marked rainforest boundary (AMG 476404, 6798821). Note the Hoop Pine to the right of the left photo is to the middle right of the photo on right. Most notable is the stump in the photo on the right which is within the exclusion area and had soil heaped over it in an apparent effort to hide it - this disguise was partly successful as it was missed on first inspection and wasn't detected until the boundary was walked. The rainforest here is a drier variant of the *Flindersia* spp.-*Araucaria* suballiance, with only scattered eucalypts towards the margin, and thus qualifies as the EEC Lowland Rainforest.

Case 3, Marked Boundary

At this site trees were dropped across the marked rainforest boundary, with multiple breaches at the one locality (AMG 476351, 6798780). Note that the tree in the centre of the photo to the left and the right of the photo to the right are the marked boundaries. This is not far from crossing 2, with the rainforest here a drier variant of the *Flindersia* spp.-*Araucaria* suballiance, with only scattered eucalypts towards the margin, and thus qualifies as the EEC Lowland Rainforest.
In one area (Around AMG 475615, 6798614) a tree had been dropped along and into the marked rainforest boundary and there was extensive disturbance along and within the marked boundary in the vicinity from multiple breaches of soil and debris being pushed into the rainforest for around 200 metres. The rainforest here is likely to be a variant of the *Flindersia* spp.-*Araucaria* suballiance, though scattered eucalypts occur in the rainforest and it was not determined whether they are at sufficient densities to preclude this rainforest qualifying as the EEC Lowland Rainforest.
Case 5, Unmarked Boundary
At the eastern end of IFOA crossing 8 the rainforest is delineated by the Forestry Corporation as extending for some 50m past the mapped rainforest boundary on the southern side of the road. This is a continuation of the Black Booyong-Giant Stinging Tree-Strangler Fig rainforest sub-alliance and is well developed Lowland Rainforest. It is apparent from the large rainforest trees, including Brush Box and Stinging Tree, in the piles of debris on the north side of the track that the unmapped rainforest extended well beyond the cleared line of the track (Around AMG 475936, 679462). It is apparent that a significant area of Lowland Rainforest (some of it with scattered Flooded Gum emergents) was cleared at this locality.

**Case 6, Unmarked Boundary**

Entrance and exit of snig track that clearly passes through unmapped and unmarked Lowland Rainforest. (AMG 475610, 6798677), to the north of this intrusion there was extensive disturbance within what appeared to have been rainforest with no evident eucalypts. The boundary had clearly been marked inaccurately here.
Case 7, Unmarked Boundary

Downhill from Crossing 8 (AMG 476048, 679354) a mixed stand of Brush Box and other rainforest species extends well outside the marked boundary of the rainforest. This was assessed as qualifying as Lowland Rainforest and has had a track constructed through it.

Case 8, Unmarked Boundary
Logging extended well into unmapped Lowland Rainforest to remove an isolated Steel Box (AMG 474719, 6799024). Numerous rainforest trees were flattened in felling and extracting this single isolated tree. This would have satisfied all the Forestry Corporation's criteria for rainforest. Note the marking of the Red Cedar next to the stump as the rainforest boundary, though the stump was clearly well within what should have been rainforest. The frequency of tree marking in this vicinity, and the relative freshness of the paint, indicated that it may have been marked after the logging.

**Discussion**

It is assumed that because the Forestry Corporation refused to recognise these rainforests as Lowland Rainforest they therefore applied their Rainforest Protocol when identifying "unmapped rainforest" rather than their protocol for Lowland Rainforest. This may explain the failure to identify as rainforest stands with a high proportion of Brush Box (i.e. Case 7, and to some extent Case 5). In other cases where unmapped rainforest was not identified it simply seems to have been missed (Case 6) or because they wanted the eucalypt within it (Case 8).

It is considered that at least 7 of the incursions are into Lowland Rainforest.

There are expected to have been many more incursions into unmapped rainforest that were unable to be identified because of the extensive and intensive disturbance to the rainforest component of many stands and the practice of delineating and reinforcing rainforest boundaries by bulldozing along them. The 8 cases identified herein are only examples of far more extensive problems. NEFA considers that detailed Aerial Photographic Interpretation of pre-logging photos is necessary to document the full extent of rainforest logging, particularly of Lowland Rainforest.

The most widespread problem is frequent incursions across rainforest boundaries. Since incursions into most exclusion areas became more flexible, attitudes have become more cavalier and incursions have become more frequent. Some may be explained by the accidental felling of trees, though the widespread and frequent breaches found at some sites (i.e. Cases 1, 3, 4 and adjacent to the entrance to IFOA Crossing 2), including by machinery, cannot be characterised as accidental and indicates a reckless attitude to the integrity of marked boundaries. In one instance (Case 2) a tree had been logged from within the marked boundary and soil pushed over the stump in an apparent effort to hide it.

The Forestry Corporation's failure to recognise the rainforest here as Lowland Rainforest has led to the wrong definition being applied and contributed to the reckless protection of rainforest boundaries. If the rainforest had of been recognised as an EEC the integrity of boundaries may have been treated with more respect and incursions been less frequent.

Based on this assessment it is evident that the Forestry Corporation has:

- logged, dropped trees, pushed debris and driven machinery across boundaries of mapped rainforest in contravention of TSL 5.4 (a) (c) and (d), and
- harmed and picked the Endangered Ecological Community Lowland Rainforest in contravention of NPW Act 118A.
5. Treating Habitat Trees with Contempt

Retention of Hollow-bearing Trees and recruitment trees (to grow into the hollow-bearing trees of the future) are key requirements to mitigate logging impacts on an array of native animals in eucalypt forests (see nefa.org.au/old_trees). For decades NEFA have been battling to get improved protection for large hollow-bearing trees and the recruitments needed to sustain them, and the vital hollows they provide, into the future. Poor and inadequate selection and protection of habitat trees has always been a problem. NEFA has identified this as a problem in all our audits.

In our complaint of 9 March to the Environment Minister, the EPA and the Forestry Corporation, our findings that numerous retained habitat trees had but damage, were suppressed and had debris left stacked around them led us to emphasise that:

The Forestry Corporation must be reminded to ensure that the required numbers of habitat trees are retained, that damage is minimised, that debris is carefully removed, and that recruitment trees are sound, vigorous, and capable of growing into the hollow-bearing trees of the future. They must also be reminded to retain additional Koala feed trees and eucalypt feed trees where required.

Our inspection of 24 August again found grossly inadequate application of habitat tree requirements, despite the EPAs supposed auditing and "enforcement" actions. We again found that habitat trees were being inappropriately identified, damaged in logging and left with debris around them. In our second complaint to the Minister regarding logging in the vicinity of log dumps 6 and 7 we noted in relation to habitat trees that "we continue to press our concerns that requirements are apparently not being met".
On NEFA’s visits of March and August it was apparent that many of the retained trees were damaged and despite bringing this to the attention of Ministers and agencies nothing improved. On the left a retained hollow-bearing tree has lost its crown due to a tree being dropped on it, on the right a basal stem on a hollow bearing tree was logged.

The retained recruitment tree on the left was suppressed (as shown by its crown) by the tree next to it that was removed. On the right is one of the numerous habitat trees recklessly damaged.

Debris was left stacked around a number of trees marked for retention. If these had of been identified by the EPA to forestry the debris would have had to be removed, so apparently went unobserved.
The above examples were all photographed during our second visit in August in an area that the EPA had investigated in March in response to our complaints. NEFA became alarmed that despite our complaints and the EPA's "inspections" the breaches of habitat tree retention requirements were systemic, frequent and obvious. Because of the EPA's slackness and ineptitude thousands of trees were logged and damaged in the logging operation that should not have been. Once again the EPA stood aside and watched while the Forestry Corporation blatantly ignored their legal obligations.

The generic term "habitat tree" is used herein to refer to both Hollow-bearing (H) and Recruitment (R) trees. In the areas inspected, no trees have been observed to be marked as Yellow-bellied Glider feed trees, Koala feed trees or Eucalypt feed trees, so it is assumed that the Forestry Corporation considers these are all encompassed by marked H and R trees.

**Requirements**

The Harvesting plan identifies that because of the outcomes of surveys for Greater Gliders that "6.9d applies – 8 habitat trees/ha to be retained" and "8 hollow-bearing trees per hectare must be retained where Greater Glider density is >1/ha", while the harvesting plan implies this is required to be applied across the whole area, the Ecology Report identifies that it only applies to compartments 359 and 361. Being in the regrowth zone, section 5.6 (d) requires that only 10 hollow-bearing trees per 2 hectares need to be retained in the net logging area, and this still applies to compartment 360. Section 5.6 (e) identifies that only one recruitment tree needs to be retained for each of the habitat trees required to be retained under 5.6 (d), which in this forest means that only 10 recruitment trees per 2 ha are required for retention across the whole area. There are also requirements to mark and retain 6 mature and late mature eucalypt feed trees and 10 primary Koala browse trees (of any size) per 2 hectares.

“Hollow-bearing tree" means a live tree in the net logging area where the base, trunk or limbs contain hollows, holes and cavities that have formed as a result of decay, injury or other damage. Such hollows may not be visible from the ground; but may be apparent from the presence of deformities such as burls, protuberances or broken limbs, or where it is apparent the head of the tree has been lost or broken off.

Of particular relevance to this audit the Threatened Species Licence (TSL 5.6(d)) requires hollow-bearing trees selected must belong to a cohort of trees with the largest diameter (dbhob), have good crown development, have minimal butt damage, and be evenly scattered throughout the net logging area.

“Recruitment tree" means a live tree of a mature or late mature growth stage within the net logging area that is not suppressed prior to harvesting and appears to have good potential for hollow development and long term survival.

Of particular relevance, selected Recruitment trees are required (TSL 5.6 (e)) to belong to a cohort of trees with the largest dbhob, have good crown development, minimal butt damage, and be evenly scattered throughout the net logging area.

Damage to retained habitat trees must (TSL 5.6 (h)) be minimised to the greatest extent practicable, by utilising techniques of directional felling, removing or flattening logging debris to a height of less than one metre, and minimising disturbance to ground and understorey, within a five metres radius of retained trees.
The Border Ranges Rainforest Biodiversity Management Plan includes as an aim:

- **Ensure retention of existing hollow-bearing trees. Also encourage the protection of recruitment trees that will ensure hollow resources are available into the future.**

**Findings**

On NEFA's first visit to Cherry Tree SF on 8 March 2015 we complained to the Environment Minister, the EPA and the Forestry Corporation that retained habitat trees were suppressed, damaged, had debris placed around them, and did not appear to satisfy retention requirements. We hoped that by highlighting the obvious problems up-front that those responsible may make some attempt to fix them.

To our disappointment our second visit on the 24 August revealed that these problems were ongoing and that there was no apparent improvement, with suppressed trees still being selected as recruitment trees, retained habitat trees still being damaged, and debris left around habitat trees. This audit covered forest that have been logged before and after our first complaint, confirming that there has been no significant improvement.

When first inspected this magnificent Tallowwood - many hundreds of years old - had debris piled up around it ready for burning. after our complaint the debris was removed in a token clean up.

It was apparent from our most recent inspections that there had been some clean-up of debris around habitat trees near log dump 8, with some additional marking of already retained trees undertaken. This appears to have just been a token effort along the ridges near the log dump (it is presumed the EPA don't like to walk too far). It was apparent that across most of the area that there had still been no improvement - our attempts to arrest further breaches by exposing the problem
had been in vain. It was thus apparent that unless we quantified our concerns that neither the
Forestry Corporation nor the EPA would do anything about it.

Initially two areas (Sites 1 and 2) were randomly searched for breaches of habitat tree retention
requirements. Within each area breaches were photographed and the GPS locations recorded
(Appendices 1 and 2). The areas were not thoroughly searched, so the identified breaches only
represent a proportion of those occurring within the search areas. Each search took 4-5 hours.
Once by myself and once with John Corkill.

The focus of these assessments was on identifying breaches, particularly of the selection and
protection requirements for marked Hollow-bearing (H) and Recruitment (R) trees. H and R marked
trees were primarily checked for logging damage and surrounding debris, with breaches of selection
criteria considered. No attempt was made to assess tree retention rates or unmarked trees. Many
of the larger H trees had significant damage to their butts when selected, though if these were
considered to be the most appropriate tree for selection, despite the damage, these were not
identified as breaches. Breaches resulting from inadequate drainage of snig tracks and major
stream incursions were also noted.

Following these assessments Two smaller areas (Sites 3 and 4) were more thoroughly searched to
assess tree retention rates (Appendices 3 and 4). All H and R trees were identified on these sites,
including unmarked hollow-bearing trees, with more rigorous identification of the appropriateness of
selection of H and R trees, and recording of tree species. These searches were more time
consuming, each search taking 3-5 hours though covering substantially smaller areas.

Because the EPA often refuse to investigate such complaints or claim they are unable to find them
(even when we show them to the EPA) we recorded the GPS localities of each of the habitat tree
breaches and photographed most of them. These are provided for each site in Appendices 1, 2, 3
and 4. We believe that the EPA cannot justifiably deny this evidence and the magnitude of the
breaches.

Site 1 covered around 18ha of the net harvest area, Site 2 around 22 ha of the net harvest area,
Site 3 covered 3.3ha, and Site 4 covered 6.9ha, giving a total area covered of 50.2 ha. The total net
harvest area is 358ha, so around 14% of the net harvest area was assessed. The records were
categorised into logging damage, according to the worst form of damage for each tree (so that no
trees were double counted). As only major canopy damage was recorded this was given the
primary ranking (ie many of these also had butt damage), next was butt damage from machinery,
falling trees or dragged logs, and third was debris (debris around trees with butt and canopy
damage was also noted). Given the abundance of debris around many trees, butt damage will be
significantly understated. It was evident that for many trees the visible damage to butts and trunks
belied the more extensive internal damage sustained from the force of the blow. The second
categorisation related to the appropriateness of selecting the trees for H or R trees, with trees with
obvious pre-existingbutt damage, suppression, small size, absence of hollows (H trees) or
presence of hollows (R trees) identified. Collection of this information was less systematic in Sites 1
and 2, and therefore underestimates the magnitude of the problem.

In total 73 trees marked as either Hollow-bearing (H) or Recruitment (R) trees were observed to
have been physically damaged during the logging operation from machinery, falling trees, and/or log
movements. A total of 95 H and R trees (including 31 damaged) had debris left stacked around their
bases, increasing their vulnerability to post logging burns.
Of those H and R trees assessed, 65 were considered to have been inappropriate choices due to their being damaged, too small, suppressed or having no hollows (31 of these were additional to those suffering logging damage). Many R trees were obviously suppressed and many were small, many had old damaged butts or tops, one was a rainforest species and some should have been identified as hollow-bearing trees. Many H trees had old damaged butts, though in those cases where such trees were obviously the most appropriate for selection they were not counted as breaches. Some H trees were too small (many 38-50cm dbh, with 80-100 cm stumps in vicinity) and had no evident hollows, some were suppressed, and one was dead.

A total of 168 marked H and R trees were found to have been damaged and/or were inappropriate choices in the 14% of the logging operation assessed, with a total of 233 breaches of selection and retention requirements documented within that area.

By extrapolation of these results across the net harvest area it is expected that over 520 marked H and R trees are likely to have suffered significant physical damage during the logging operation, with 220 of these with logging debris left around them, along with debris left around an additional 460 habitat trees. In total we project that some 1,200 H&R trees are likely to be damaged or inappropriately selected in the logging operation, with over 1,600 breaches of habitat tree selection and retention requirements. This is considered to be a conservative estimate as less than 80% of the breaches are likely to have been identified in Sites 1 and 2.
In this area 4 hollow-bearing (H) and one Recruitment (R) habitat tree had their crowns knocked out by having trees felled on them, with damage to their trunks and piles of debris left around all 10 habitat trees in the vicinity, ready for cremation. One selected R tree had pre-existing severe trunk damage, and one H tree was very small, with a diameter of only 38cm - next to a 105cm diameter stump.
<table>
<thead>
<tr>
<th></th>
<th>Logging damage</th>
<th>Selection</th>
<th>Nettt Area (ha)</th>
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<tr>
<td></td>
<td>butt</td>
<td>canopy</td>
<td>debris</td>
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<tr>
<td>SITE 1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hollow-bearing</td>
<td>7 (1)</td>
<td>4 (4)</td>
<td>7</td>
</tr>
<tr>
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<td>4 (1)</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>TOTALS</td>
<td>46 (11)</td>
<td>27 (20)</td>
<td>64</td>
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Based on records of Greater Gliders and owls, the TSL 6.9d requires that “eight hollow-bearing trees per hectare must be retained within the net logging area” of compartments 359 and 361, but not 360. Compartments 359 and part 361 comprise 306ha of the net logging area and compartment 360 comprises 52ha. The TSL variously requires that, where available, 8 H trees per hectare be retained in compartments 359 and 361, and 5 H trees per hectare in compartment 360. For each H tree retained one R tree is required to be retained up to a minimum of 5 R trees per hectare. This represents a total of 2,448 H trees and 1,530 R trees in compartments 359 and 361, and 260 H trees and 260 R trees in compartment 360. Site 3 is located in compartment 359 and Site 4 in compartment 360.

At Site 3 a total of 15 H trees were located, of which 1 was physically damaged in the logging and 6 additional trees had debris left around them (note that many had pre-existing butt damage though were considered appropriate choices). Of the 13 R trees located, 4 were physically damaged in the logging and 3 (2 damaged) had debris left around them, with 8 considered inappropriate choices (5 additional to those affected by the logging) due to having pre-existing butt/trunk damage, being suppressed, being small young trees, or because they had hollows and should have been H trees. One large (90cm dbhol) hollow-bearing tree had been felled (AMG 476084, 6798584) and large stumps (up to 100cm diameter) indicate that others were also felled (the debris made it impossible to search most crowns without major works).
Across the 3.3 hectares marked habitat tree retention was 4.5 H trees/ha and 3.9 R trees/ha, both of which are significantly below the requirements for this compartment. Three trees marked as R trees were observed to have hollows (AMG 476107, 6798517, 476055, 6798553, 476038, 6798553), with re-assignation of these trees as H trees, habitat tree retention was 5.5 H trees/ha and 3.0 R trees/ha. It is evident that retention of hollow-bearing trees was well below the 8 per hectare required and that there were additional hollow-bearing trees available for retention that were logged.

Similarly it is evident that the required numbers of R trees were not retained, and that most marked trees did not satisfy retention requirements. There were abundant stumps in the size range 50-100cm from logging, making it evident that most (if not all) of the largest cohorts of trees that should have been retained as R trees were logged. Only 5 of the marked R trees were accepted as reasonable choices, though these were still small trees and did not belong to the largest cohort of trees as evidenced by stumps. This is a retention rate of only 1.5 R trees per hectare. When considered with the significant logging damage to retained trees, the outcome is extremely bad.

Of the total of 28 H and R trees 12 were Grey Gums, 10 were Steel Box, 5 were Spotted Gum and 1 was Brush Box, with Steel Box and Spotted Gum significantly under-represented as R trees compared to H trees (which was also evident when compared to the predominance of Steel Box and Spotted Gum in logging debris). Both Steel Box and Spotted Gum are “Eucalypt feed trees”, so their retention is 4.5 per ha which is above the requirement to retain 3 per ha.

At Site 4 a total of 43 H trees were located (including 3 unmarked), of which 10 were physically damaged in the logging, and 17 (4 damaged) had debris left around them (note that many had butt damage though were considered appropriate choices). Of the 33 R trees located, 16 were inappropriate selections because they were obviously suppressed or had butt damage, with an additional 5 considered to be too small (37-45 cm dbhob), At best 12 R trees can be considered reasonable choices (and even then some of these were more appropriate H trees than those selected), and 4 of these were physically damaged in the logging. A total of 8 R trees were physically damaged in the logging, and 4 of these, and an additional 10, had debris left around them. At one extreme one R tree was only 30cm dbhob, suppressed and had debris left around it, at the other extreme one was 120cm dbhob (bigger than most H trees) and had abundant obvious hollows.

Across the 6.9 hectares habitat tree retention was 6.2 H trees/ha which is above the 5 H trees/ha required in this compartment. The retention of 4.8 R trees/ha is just below the 5 per ha required for this compartment. Most of the largest cohorts of trees that should have been retained as R trees were logged. With the exclusion of inappropriate R trees the outcome is extremely bad, as only 1.7 R trees per hectare can be considered to reasonably satisfy the legal criteria.

Of the total of 76 H and R trees. 49 were Grey Gums, 11 were Spotted Gum, 7 were Steel Box and the balance a mix of species, with Spotted Gum significantly under-represented as R trees compared to H trees. The only 2 Spotted Gums retained as R Trees were suppressed, whereas numerous Spotted Gums were logged. Given the predominance of Grey Gum, only 27 retained trees are “Eucalypt feed trees”, so their retention is 3.9 per ha which is above the requirement to retain 3 per ha.

By extrapolation of the results from site 3 across the nett area of compartments 359 and 361 (allowing for reclassification of R trees with hollows to H trees), there are some 1,670 H trees and
460 suitable R trees retained. This means there are shortfalls of some 780 (32%) in the required number of H trees and some 1070 (70%) in the required number of R trees. By extrapolation of the results from site 4, across the nett logging area of compartment 360, some 320 H trees and 90 appropriate R trees are likely to have been retained. This means there are some 60 more H trees retained than required and a shortfall of some 170 R trees.

In total there is likely to be a shortfall of some 720 (27%) H trees and 1,240 (69%) R trees across the whole logging area. The failure to protect some 2000 (44%) of the required habitat trees is very significant.

Across both Sites 3 and 4, 22% of habitat trees were physically damaged in the logging operation, and 38% had debris left around them. Of the H trees, 10% were considered inappropriate selections due to their small size, suppression and lack of hollows. Of the R trees a massive 63% were considered to be inappropriate selections due to pre-existing damage, being suppressed, or being too small.

Discussion

There has been a systematic and deliberate failure to identify and select appropriate habitat trees, and a reckless indifference to their survival. The Forestry Corporation were negligent in selecting the trees and in overseeing operations, and the contractor was negligent when undertaking the logging. Both the Forestry Corporation and the EPA were negligent in supervising the operation.

It is readily apparent to, even to a casual observer, that inadequate numbers of Hollow-bearing trees have been retained in most areas, that most of the trees selected as Recruitment trees are small and suppressed, that many habitat trees have been damaged in the logging operation, and that debris have been left around the bases of numerous trees. We thus find it hard to understand why the EPA did not notice this for themselves and did nothing to rectify it.

In 2014 the EPA audited 6 State forests in the Upper North East, focussing on habitat tree retention. They undertook 6 transects, as small 0.3 ha, covering a total area of 11.7 ha. This is less than 2ha per State Forest, as compared to the 50.2 ha assessed in Cherry Tree SF by NEFA.

The EPA (Greg Abood 13 August 2014) found the only problem to be that the Forestry Corporation was retaining the smaller trees as R trees while removing the larger trees, commenting “EPA audits found a common trend that appropriate recruitment trees were not retained in accordance with the Threatened Species Licence (TSL) requirements”.

The EPA then go on to extol the Forestry Corporation for their treatment of H and R trees, stating “The EPA audit findings indicated a high rate of protection of trees selected as hollow bearing and recruitment tree resources. EPA found a high compliance rate where tree heads and tree butts were protected from mechanical damage during harvesting operations. EPA also found a high compliance rate where debris around the base of these resources was minimised”.

The EPA's glowing endorsement of the Forestry Corporation's treatment of habitat trees does not marry with our experience, and just reflects the EPA's incompetence, small unrepresentative sample sizes and lack of impartiality. We expect they would have said the same about Cherry Tree SF, or just swept the problems under the carpet, as they have done for similar complaints before. So this time we have undertaken a more comprehensive assessment in the hope that the scale of the problem is just too big for the EPA to pretend it doesn't exist.
Though the EPA's identification of "a common trend that appropriate recruitment trees were not retained" is undoubtedly the biggest and most obvious problem that we have identified in all our audits. With few exceptions, the Forestry Corporation simply refuse to retain the large healthy mature trees essential to provide the hollow-bearing trees of the future.

Despite decades of supposed regulation, the ongoing decline in Hollow-bearing Trees is a common problem across south east Australia's public forests, in part because of the failure to retain adequate numbers of recruitment trees. For example Gibbons et. a. (2010, What strategies are effective for perpetuating structures provided by old trees in harvested forests? A case study on trees with hollows in south-eastern Australia) found:

We predicted that, under existing practice, only 35–79% of the intended numbers of hollow-bearing trees will be perpetuated. In a sensitivity analysis we found that 75% of the variation in predicted numbers of trees with hollows over multiple harvesting rotations could be explained by the number of recruitment trees retained for each hollow-bearing tree, the rate of mortality among retained trees, the length of the harvesting rotation and the rate at which trees developed hollows. Our results indicated that trees with hollows can only be perpetuated in harvested stands over multiple harvesting rotations if ≥2 recruitment trees are retained for each hollow-bearing tree and measures are employed to minimise mortality among all retained trees.

This is reflected in McLean et. al. (Forest Ecology and Management 341 (2015) 37-44) conclusions for the Dorrigo area that:

Logging intensity was negatively correlated with tree diameter at breast height (DBH), and the density of both hollow-bearing trees and hollows. Losses of hollow-bearing trees and hollows occurred through an interaction between logging intensity and fire frequency, resulting in an absence of recruitment of hollow trees. ... We recommend additional hollow recruitment trees be retained on logged sites in the future if no net losses of hollows are to occur in the future, or for wider unlogged buffers to be established adjacent to the cutting area.

Given that the numbers of recruitment trees being retained are obviously inadequate, the Forestry Corporation's failure to retain even one R tree for each H tree, their deliberate selection of inappropriate trees, and the extensive damage they impose on them, will have major consequences for the future of hollow-dependent fauna. It is not acceptable for the EPA to continue to take such a feeble and obviously ineffective approach to this problem.

Based on our assessment of 14% (50.2ha) of the nett logging area, including our more detailed assessment of 10.2 ha, and extrapolation of our findings across the nett logging area, NEFA concludes:

- In the order of 2,000 (44%) of the habitat trees required to be protected were logged, in contravention of TSL 5.6 (d)(i), (e), and 6.9 (d).
- There have been over 1,600 breaches of habitat tree selection and retention requirements for trees that were retained across the logging area, in contravention of TSL 5.6 (a) (i), (ii), (d)(ii), (e) (i), (iii), (iv), and (h) (i), (ii).
- Of the marked H trees, 10% were considered inappropriate selections due to their small size, suppression and lack of hollows, in contravention of TSL 5.6 (a) (i), and (d)(ii).
- Of the marked R trees, 63% were considered to be inappropriate selections due to pre-existing damage, being suppressed, or being too small, in contravention of TSL 5.6 (a)(ii), and (e)(i),(iii),(iv).
• Of the marked habitat (H&R) trees, 22% were physically damaged in the logging operation, with some 520 habitat trees likely to have suffered significant physical damage, in contravention of TSL 5.6 (h)(i), and
• Of the marked habitat (H&R) trees, 38% had debris left around them, with some 680 habitat trees likely to have had debris left around them, in contravention of 5.6 (h)(ii).

The poor management of the various habitat trees documented above is widespread and affects most trees left standing, not just H and R trees. The extensive damage to surviving trees has been compounded by logging debris left piled around many, ready for burning. This damage, and likely damage in post-logging burns, will shorten the longevity and retard the growth of many retained trees, and is likely to result in significant mortality of all retained trees. The future productivity of this forest has been significantly compromised by the reckless disregard for the health of all surviving trees.

Two examples of the dozens of trees marked for retention as future growers that were physically damaged and/or had debris piled around them.
6. Eroding Snig Tracks

This operation is licensed under the Environment Protection Licence (EPL), so this is one of the few logging operations where the EPL rules are legally enforceable. It appears that the Forestry Corporation have become slack because the EPL are usually unenforceable “guidelines” for most operations, and because the EPA appear to have had a major reduction in enforcing the EPL.

On NEFA’s first visit logging had been suspended east of log dump 8 and we identified that tracks had been used extensively while soils were saturated, resulting in severe degradation of soil structure and rutting, and drainage of tracks had not been implemented. We recommended:

There needs to be an independent investigation of the soil rutting problems, and the failure to instigate cross banks when postponing operations. Rehabilitation plans need to be identified and implemented, particularly for the tracks through IFOA rainforest.

On our next visit we identified a snig track that had been constructed on an excessively steep slope, with inadequate cross-banks, some of which had failed. It had resulted in major environmental degradation for no reason as no trees had been logged (see Case 1).

Regrettably our recent inspections have found snig tracks where no drainage has been implemented and others where the cross-banks have been inadequately constructed and failed. The topsoil is on the move.

6.1. Mitigating erosion

In keeping with our previous complaints, the Forestry Corporation continue to construct snig-tracks without implementing the required drainage. Unlike the first site documented (Case 1), there has so far been insufficient rain to test the consequences of this more recent inadequate drainage, though some soil mobilisation is evident. It is particularly disturbing that NEFA identified this as a likely problem on our first inspection, and yet 6 months later nothing seems to have been done to remedy the problem of the Forestry Corporation’s failure to provide the legally required drainage.

**Requirements**

The Environment Protection Licence (EPL), Schedule 4, requires, in part:

41. For land classified as inherent hazard level 2 or 3, the grade of snig tracks must not exceed 25 degrees except to ...  
70. Snig track and extraction track drainage must be located and constructed to ensure that water flow or potential water flow does not occur on snig track or extraction track surfaces for distances exceeding those given in Table 3.

<table>
<thead>
<tr>
<th>Track Grade (degrees)</th>
<th>Maximum Distance (metres)</th>
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<tbody>
<tr>
<td>5</td>
<td>100</td>
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<tr>
<td>10</td>
<td>60</td>
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<td>15</td>
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Table 3 may be interpolated to derive site-specific maximum spacings.
72. Where track drainage structures are used they must be located, constructed and maintained to:
   a) have sufficient capacity to convey the peak flow from a 1:2 year storm event...;
   and
   b) divert water onto stable surfaces capable of handling concentrated water flow and which provide for efficient sediment trapping

79. Drainage must be effected as soon as practicable at the completion of operations on each extraction track or snig track, and in any event within two days, unless the soil is saturated. State Forests must document instances where saturated soil conditions preclude the construction of effective drains.

**Findings**

Some snig tracks had no cross-banks constructed. Most snig-tracks did have cross-banks, though some were inadequately spaced. Many cross-banks were observed to be poorly constructed, or to have had machinery driven across them, such that they were failing with water simply flowing around or over them.

In our systematic audit of 40 ha we identified 3 snig tracks where there had not been any attempt to implement the legally required cross-drainage (Sites 1.1, 1.2 and 1.3), two snig tracks where the poorly constructed cross-banks had failed (Sites 2.1 and 2.2), and another snig track that was actively eroding though the reasons were not ascertained. See map under "Treating Habitat Trees with Contempt" for locations. So based on these 5 clear breaches in 40ha, it is reasonable to assume that across the whole logging area in the order of 45 breaches of erosion mitigation prescriptions are likely. Our findings of other breaches supports this conclusion.

**Case 1**

Within the Ridge and Headwater Habitat exclusion zone to the south-west of log dump 7 a snig track crosses a drainage line before turning to run parallel with the stream down an excessively steep slope, 90m of this track is within the marked boundary of the Ridge and Headwater Habitat. It then involves extensive cuttings on mapped "Indicative slopes >30 degrees" before ending at an exclusion zone boundary (AMG 476294, 6799275). The drainage line is at the head of a mapped first order stream, though is shown on the harvesting plan as an "indicative drainage feature". The track crosses the drainage feature, and this is likely to be contributing to the erosion observed. Cross banks have been constructed within the exclusion area and direct runoff towards the stream. Further down, fill from a sidecut has spilled into the exclusion zone. The track clearly breaches the requirements of Schedule 4 H (cl 38, 39, 41) of the EPL.

Under the TSL (5.8j) road construction and re-opening "where there is no other practical means of access" is permitted in ridge and headwater exclusion zones, though in this case there was no attempt to minimise disturbance. Given that no logging occurred it is not apparent why they bothered accessing this area. More information on this crossing is provided in the section on rainforest (H&R Crossing 1).

In order to justify the works, somebody has sprayed on a tree at the start of the snig track "old track", and there did appear to have been an old track crossing. The track going down the hill is another matter, on a tree stump above the cutting someone had sprayed "old cutting", though at the top of the cutting a 27cm dbhob White Cedar had been bulldozed over, and further down a large Tallowwood had been bulldozed out of the way. It is evident that there are extensive new earthworks within the marked exclusion zone and down the excessively steep slope below. These
include excavations with fresh 2m cuttings into the bedrock. With obviously new cuttings, recent fill and new damage to trees, it is apparent that most of the track is newly constructed. This area is marked in the Harvesting Plan as having "Indicative slopes >30 degrees", which was found to be accurate. The track was found to exceed 28° for one 32m section and appears to have been constructed across slopes in excess of 30°.

The Harvesting Plan identifies the site as being inherent hazard 2 (though this is questionable) and the licence (EPL Sch4H, 41) requires that snig racks not exceed 25 degrees (with some exceptions which do not apply here). The EPL (4.71) requires that the maximum distance that water can flow along a track with a 25-30m grade is 20m, yet the measured spacing of crossbanks on a 28° section of track was 32m (AMG 476223, 6799239).

Left: Debris from track construction extends into the exclusion area. Right: Track constructed on 28° slope with cross-bank spacing of 32m - note that both the Tallowwood trees to the left were found to be Koala high use trees.

Obvious new cutting claimed as an "old cutting".
From our August visit we identified that at various places three crossbanks had failed, resulting in significant erosion. These failed cross-banks had also greatly increased the distance water can flow down the tracks within the exclusion zone, exceeding legal limits and causing significant erosion within the exclusion zone. We identified these to be breaches of EPL Schedule 4 clauses 72 (not providing for sediment trapping), 74 and 75 (not draining far enough away from watercourses).
That these occurred in an area that the EPA had reputedly audited months before is a worry. When NEFA reinspected the site on 14 October 2015 the top cross bank had recently been reconstructed, though no work had been undertaken to repair actively eroding areas further down the track or install additional cross banks.

**Case 2**

Site 1.1. (AMG 475316, 6798720) a snig track had been constructed for 154m down a slope of 17-22° with no cross banks before passing into a filter strip. According to the EPL (Clause 71) cross banks should have been constructed at 25-40m spacings on such a slope.

**Case 3**

Site 1.2. (AMG 475369, 6798769) a snig track on 24° slope was found with no cross banks for 61m, the bank at the end had been driven over (allowing water to flow over it) with about 20m of disturbed ground before the filter strip. Cross banks were required at 25m spacings.
Case 4

Site 1.3. (AMG 475624, 6798775) a snig track on 25° slope with no cross bank for 61m before turning into churned ground (due to being used when saturated), with erosion occurring for at least another 10m. Cross banks were required at 20-25m spacings.

Case 5

Site 2.1. Snig track eroding, from the base it is 28m to first cross bank on a 22° slope, this cross bank apparently overtops (AMG 475547, 6798556) and is likely to fail further. Further up the next crossbank has totally failed and now funnels water into an eroding channel (photo on right, AMG 475496, 6798419). These failures mean that water is flowing down this bared ground for over 100m,
which is far in excess of legal requirements of 25m. Active erosion and sediment transport is evident.

**Case 6**

Site 2.2. Cross banks have failed on an 18° snig track (AMG 475417, 6798547, 475380, 6798517, 475316, 6798473) resulting in water flowing down the track for at least 70m, far in excess of the 40m allowed. Active erosion and sediment transport is evident.
Case 7

Site 2.3 Active erosion was observed on this snig track (AMG 475815, 6798094), though the extensive soil disturbances made it hard to readily determine the cause. While not fully investigated, it is presented here because it apparently needs remediation work.

Case 8

In a recent logging area (AMG 475019, 6798719) a snig track had been constructed for 55m down a 24° slope without any crossbanks or other diversions, allowing water to flow down the track until hopefully being diverted by debris into a filter strip. The EPL (Cl.71) requires that the maximum distance that water should be allowed to flow on such slopes is 25m.
Case 9

At this site (AMG 475257, 6798586) a snig track extended 38m on a slope of around 13° before the first cross bank, which the water simply flowed around before the track continued downhill for a further 43m on a slope of around 20° before the next crossbank, which had been simply driven over allowing the water to flow over the top and continue on for around another 20m before reaching the filter strip.

Discussion

In constructing and draining their snig tracks It is evident that the Forestry Corporation has

a) constructed snig tracks on excessively steep slopes in contravention of EPL Sch4 41;

b) often not constructed the cross-banks required to divert water flow down tracks, or inadequately spaced cross-banks, or constructed them so poorly that they have quickly failed to divert flows, in contravention of EPL Sch4 70;

c) constructed numerous cross banks to an inadequate standard to divert peak flows onto stable surfaces capable of trapping sediments, in contravention of EPL Sch4 72; and,

d) failed to the construct the required cross-banks on some tracks many months after logging was completed in those areas, in contravention of EPL Sch4 79.

6.2. Soil Rutting

On our initial inspection in March we observed extensive use of snig tracks while the soil was saturated, resulting in degradation of soil structure and severe rutting, including on the IFOA Crossings 7&8 through the rainforest. Despite logging being suspended at the time of our visit, we also observed that most snig and extraction tracks remained undrained east of log dump 8.

Requirements

The Environment Protection Licence (EPL), Schedule 4, requires, in part:

80. Drainage must be installed if the use of an extraction track or snig track is to be temporarily discontinued in excess of five days, unless the soil is saturated. State Forests must document instances where saturated soil conditions preclude the construction of effective drains.
81. Tracks must not be used where:
   a) there is run off from the snig track surface; or
   b) there is a likelihood of significant rutting leading to turbid runoff from the track surface.

**Findings**

When visited in March tracks had been used extensively when saturated, resulting in severe degradation of soil structure and rutting, with no cross banks installed to divert flows and sediments. There had been a clear breach of EPL, Schedule 4, 81. Also see section 4.2 Case 1: IFOA Crossing 8. Other examples of tracks affected at that time were observed during more recent inspections (i.e. AMG 475420, 6799013).
7. Trashing Streams

As well as attempting to constrain erosion, the principal aim of the Environment Protection Licence (EPL) is to protect streams from pollution. Exclusion zones are required to be established on all streams, both those that have been mapped (on 1:25,000 topo. maps) and unmapped streams. These exclusion zones are political compromises that are progressively being reduced in order to access the timber within them, they are already well below the optimum width required to minimise stream degradation and the EPA are intending on reducing them further.

These compartments represent one of the few areas where the Forestry Corporation are still legally required to abide by the EPL. The "unmapped" streams have also been mapped by Lidar and are included on the harvesting plan as "Indicative drainage features".

In general, there appears to have been a reasonable attempt to identify and mark stream buffers, including on "unmapped" streams, though there are inexplicable exceptions. This does not extend to "drainage depressions" which appear to have been ignored. In one area a series of perched waterbodies, drainage depressions and drainage lines, that were mapped as "Indicative drainage features" were apparently ignored and extensively damaged. In another there was extensive clearing in the Protection Zone of a 2nd order stream, next to an IFOA Crossing, without bothering to rehabilitate it.

Buffers have been extended in some areas to take in unmapped rainforest (where there are no eucalypts to extract). There have been numerous incursions into these marked buffers throughout the logging area, with trees dropped into them or debris pushed past marked boundary trees. The rules now allow many such intrusions, so only examples have been reported here.

Requirements

Drainage depressions are the heads of streams where water movement is usually by subsurface flows. These important components of stream systems are only protected by the Environment Protection Licence (EPL), which requires that machinery disturbance within their buffers be minimised, though because the EPL rarely applies to logging operations anymore, drainage depressions are often abused. The EPL defines drainage depression as:

"drainage depression" means a level to gently inclined shallow, open depression with a smoothly concave cross-section, rising to moderately inclined hillslopes

Since NEFA exposed the widespread logging of "unmapped" drainage lines in the nearby Yabbra State Forest in 2009 the Forestry Corporation have been forced to protect these in accordance with the Fisheries Licence. In Cherry Tree they are also protected by the EPL, as are mapped streams.

The Environment Protection Licence (EPL) Schedule 4 states, in part:

15. Buffer strips must be retained along all drainage depressions and must have a minimum width of five metres.

18. Trees must not be felled into filter strips.

19. Trees that have been accidentally felled into a filter strip may be removed from the filter strip. The crown must be left where it has fallen unless the tree is lifted out of the filter strip, or lifted and moved within the filter strip, using a mechanical harvester.

20. Machinery must not enter a filter strip, except for the purpose of constructing or using a road crossing, extraction track crossing or snig track crossing.
20B Where a tree is felled into a protection zone, the crown must be left where it has fallen, unless the tree is lifted out of the protection zone, or lifted and moved within the protection zone, using a mechanical harvester.

20C Trees in a protection zone must not be felled, except for the purpose of constructing a road crossing, extraction track crossing or snig track crossing.

20E Machinery must not operate in a protection zone when the soil is saturated.

20H Machinery operating within a protection zone for any of the purposes outlined in condition 20D must:

- c) operate with any blades, rippers or any other attachments in a position that does not disturb the ground surface.

20J Seventy percent ground cover must be achieved on all disturbed soil surfaces in a protection zone within five days of the creation of the disturbance.

21. Machinery must not operate in buffer strips when the soil is saturated.

22. Machinery operating within buffer strips must:
- a) use walkover techniques wherever possible;
- b) prevent to the greatest extent practicable the skewing of machinery tracks;
- c) operate with blade up at all times except when conducting earthworks in accordance with condition 23 of this schedule; and
- d) not snig along drainage depressions.

23. Earthworks must not be undertaken within buffer strips except for the purpose of constructing a road crossing, extraction track crossing or snig track crossing.

39. Spoil from snig track or extraction tracks construction, upgrading or maintenance must not be placed in filter strips, protection zones or buffer strips.

75. Where practicable, constructed snig tracks must be drained between 5 metres and 20 metres from drainage depression crossings. The distance must be measured from the apparent centre of the drainage depression.

The Fisheries Licence (FL) requires the establishment of Exclusion Zones and Buffer Zones (equivalent to the EPLs Filter Strips and Operational Zones). FL 7.4 (j) mirrors EPL 19 and 7.4 (c) mirrors EPL 20, 7.5 (f) mirrors 20B, 7.8 (a) mirrors 20E and 7.8 (b) mirrors 20H. The FL also requires:

7.5 Operations within buffer zones
- b) No specified forestry activities may be carried out in a buffer zone.
- c) Harvesting machinery is not to enter, or be used within, a buffer zone.
- d) No earthworks are to be carried out in a buffer zone.

The Harvesting Plan notes:

- Class 2 Aquatic Habitat has been identified as occurring within these compartments. Conditions of the Fisheries Licence apply.
  - Condition 7 (General Aquatic Habitat Protection Conditions) of the Fisheries Licence applies.
  - Condition 7.9 of the Fisheries Licence applies to snig track crossings of mapped and unmapped drainage lines.
  - Crossings must be approved and marked in the field prior to use.
  - Crossings may only be used where it is not reasonably practicable to use another route or site.
  - Conditions 8.3 and 8.4 of the Fisheries Licence apply to crossings.

Crossings of unmapped drainage lines were observed at AMG 476190, 6798372 and 475940, 6798249, these were not assessed, though they did not appear to be essential.
Findings

Case 1

The area to the east of log-dump 8 in and adjoining the rainforest has a complicated drainage system comprised of perched intermittent waterbodies and numerous "unmapped" drainage lines that have been identified on the Harvesting Plan as "Indicative drainage feature (Lidar derived)". Regrettably the Forestry Corporation has largely ignored their own mapping when logging this area by ignoring the perched waterbodies and bulldozing through numerous "drainage features" they have mapped. It is acknowledged that most of the perched waterbodies are intermittent and because they are unvegetated do not satisfy the TSL definition of a "wetland" and that some of the drainage features may not satisfy the definition of "drainage line", though they are at least "drainage depressions".

We observed that the Forestry Corporation had generally ignored the presence of these "drainage features" (including on IFOA Crossing 8), bulldozing across drainage depressions at whim and failing to establish buffer strips around them in contravention of EPL Schedule 4; 15, 22, 23 and 75, and undertaking operations in and around them when saturated in contravention of EPL Schedule 4; 21. If the EPA had of been doing their job when they inspected this area in March, they would have identified these problems, though apparently failed to as no attempt was made to rectify them.

The Forestry Corporation constructed their track across and around this juncture of two "Indicative drainage features", which are mapped on their harvesting plan, despite its comprising an obvious drainage depression, with no regard to minimising damage. The drainage depression exits in the middle background. (AMG 476013, 6799492). Note the extensive machinery damage.
LEFT: To the north of the track crossing are a series of drainage depressions which are perched intermittent swamps. RIGHT: Where the water exits it appears to become a drainage line, though was unable to be assessed because it is buried deep in debris.

**Case 2**

At the entry to IFOA Crossing 9 the track has been constructed along a drainage depression at the head of an "Indicative drainage feature (Lidar derived)" mapped on the harvesting plan (AMG 474888, 6798878).

**Case 3**

In undertaking works in the Protection Zone (5-20m from the stream bank) at IFOA Crossing 1 (see Section 4.2, Case 4) the Forestry Corporation cleared a large area outside the road prism within which they stockpiled soil and gravel in contravention of EPL Schedule 4 20H and 39, while failing to restore ground cover in contravention of 20J. They also undertook works when the soil was saturated in contravention of EPL Schedule 4 20E. And this was within an exclusion area.
Case 4

Crossing across stream with a defined rocky channel, it was simply filled with logs and soil, and logging and roading had been undertaken in what should have been its Filter Strip and Protection Zone (AMG 476055, 6799365)

Further downslope from Case 1, another "Indicative drainage feature" has a clearly defined rocky bed and thus constitutes an unmistakeable drainage line, though it has been filled with soil and debris without any protection being applied until it turns into a "mapped stream" (AMG 476055, 6799365). This constitutes a major transgression of the required 5m Filter Strip and 5m Protection Zone, due to the extensive operations forestry undertaken in what should have been a protected area. This is one of three sites identified where forestry operations were undertaken within operational zones.

Case 5
Soil and debris pushed to within 5m of the edge of an unmapped drainage line (AMG 476401, 6798621), resulting in extensive machinery disturbance to the Protection Zone. Note the stream is to the centre right of the photo (V). The boundary (2 bars) was clearly marked 10m from the stream. The Environment Protection Licence (EPL) Schedule 4, sections 20D, F and G "are the only ...conditions that permit the entry of machinery into a protection zone", this incursion does not appear to have any purpose. No attempt had been made to restore ground cover.

**Case 6**

Pushing the boundary. At this site the contractors appear to have crossed a marked riparian buffer to extract a tree and have pushed debris across the boundary (AMG 476403, 6798862). This occurred close to another logging incursion across a marked boundary that someone attempted to cover up (see 4.3. Logging into Rainforest, Case 2).

**Case 7**

Trashed unmapped drainage line, note person in middle of photo standing on stream bank.
Within the detailed audit areas a few incursions into stream buffers were observed. The most significant incursion identified (AMG 475431, 6798408) was where a tree (or trees) had been dropped across an unmapped drainage line (affecting the full extent of the Filter Strips and Protection Zones on both banks). See map under Habitat Trees for location. It appears it was then partially pulled out to extract the log, resulting in rainforest understorey trees being pulled over into the stream, with tree heads going in both directions across the stream.

Unmapped drainage line, a mixture of tree heads and damage extends right across the buffer. Right: centre of stream, note tree heads going in both directions, suggesting that the tree was dropped and partly pulled out, pulling over rainforest trees in process (AMG 475431, 6798408)

Other Cases

Examples of the numerous intrusions into buffers zones observed. At Site 3, machinery disturbance and debris extended within a Protection Zone up to 2m past marked trees (AMG 476117, 6798604). Machinery had intruded. At Site 2 (AMG 475388, 6798453) the intrusion into the Protection Zone was 8m.

Discussion

Given that the Environment Protection Licence legally applies to so few logging operations the Forestry Corporation have developed a cavalier attitude towards "drainage depressions", often totally disregarding their presence and trashing them. We have complained of this in a number of audits, though our complaints are ignored because the EPL is "switched off". In this case the EPL is
"switched on" and Lidar mapping has identified a complex system of drainage features, which include "drainage depressions" and "drainage lines". Despite these features being mapped on the harvesting plan, the Forestry Corporation chose to ignore most drainage depressions when logging the area. It is expected that a thorough search of this area will reveal many more breaches than detailed herein.

This area was the subject of our first complaint in March, and later logging appears to have paid greater heed to unmapped drainage lines. Though the Forestry Corporation still undertook inexplicable activities such as clearing, and piling soil and gravel, in the Protection Zone of a 2nd order stream, next to an IFOA Crossing, without bothering to rehabilitate it.

In summary:

The Forestry Corporation have ignored the presence of numerous ephemeral waterbodies and drainage depressions, despite mapping them as "Indicative drainage features" in their harvesting plan, and have undertaken extensive machinery operations within their buffers, including when saturated, in contravention of EPL Schedule 4; 15, 21. 22, 23 and 75.

At 3 sites the Forestry Corporation have undertaken extensive earthworks and machinery disturbance with stream Filter Strip and Protection Zones (contravenes EPL Schedule 4; 20, 20H and 39, FL 7.4(c), 7.5(b)(c)(d), and 7.8(b)) while failing to restore ground cover in (contravenes EPL 20J). At one site (at least) the Forestry Corporation failed to recognise the presence of an "unmapped" drainage line (a mapped "Indicative drainage feature") and logged and roaded within what should have been its Filter Strip and Protection Zone.

At one site the Forestry Corporation caused considerable soil degradation by undertaking works when the soil was saturated (contravenes EPL Schedule 4; 20E. FL 7.8 (a)), at another they caused considerable damage by partially dragging a tree crown out of a Filter Strip (contravenes of EPL Schedule 4; 19, FL 7.5 (f)) and at another they felled a tree within a Protection Zone in contravention of EPL Schedule 4; 20B.
8. Aggravating Lantana Invasion and Bell Miner Associated Dieback

There is sufficient evidence to prove a causative link between logging operations and the two Key Threatening Processes of ‘establishment and spread of Lantana’ and ‘dieback associated with over-abundant psyllids and Bell Miners’. Both these processes are operating within Cherry Tree SF and will be aggravated by the logging operations that have been undertaken with total disregard for the consequences.

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 notes that

*Broad-scale canopy dieback associated with psyllids and Bell Miners usually occurs in disturbed landscapes, and involves interactions between habitat fragmentation, logging, nutrient enrichment, altered fire regimes and weed-invasion (Wardell-Johnson et al. 2006).*

... 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.

It is evident that factors affecting BMAD include disturbance, logging, reduction of tree canopy by 35-65% and dense understoreys, particularly of lantana. Logging is clearly one of the factors involved. This has also been the conclusion of Christine Stone who researched this issue for the Forestry Corporation for years.

The NSW Scientific Committee has also listed the ‘Invasion, establishment and spread of Lantana (Lantana camara L. sens. lat)’ as a Key Threatening Process, noting “*There is a strong correlation between Lantana establishment and disturbance ..., with critical factors being disturbance-mediated increases in light and available soil nutrients*”. The 2006 literature review prepared for the BMAD Working Group "Bell Miner Associated Dieback (BMAD) Independent Scientific Literature Review", (DEC Occasional Paper 2006/116), concludes (p. iv) "*the proliferation of dominant understorey weeds, such as Lantana (Lantana camara), in the north-eastern region of NSW has largely been attributed to the disturbance caused by logging and associated activities*".

Bell Miner Associated Dieback (BMAD) is a major threat to the ecological sustainability of vast tracts of NSW's forests. There are over a hundred thousand hectares of NSWs coastal forests affected by BMAD from Queensland to Victoria, and it is rapidly expanding as logging creates new habitat. Two and a half million hectares of NSW's forests have been identified as susceptible to BMAD. This is ecosystem collapse on a grand scale.

**Requirements**

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”. These include “maintain or increase” "*The productive capacity and sustainability of forest ecosystems*" and "*Forest ecosystem health and vitality*". Spreading and aggravating both lantana and BMAD clearly contravenes the IFOA.

The Harvesting plan identifies that

*Bell Minor Associated Die-back is a potential future forest health issue in some Flooded Gum and Grey Gum/Spotted Gum stands, particularly in the NE corner of Cpt. 359. Post-
harvest burning and Eucalypt regeneration monitoring will be critical for this harvesting operation.

The Border Ranges Rainforest Biodiversity Management Plan identifies this part of Cherry Tree State Forest as a priority location and includes as an objective "To minimise the effects of Bell Miner associated dieback on rainforest and associated wet sclerophyll forest", with relevant actions being:

- Implement Lantana removal trials within areas adjacent to rainforest that are affected by dieback.
- Develop guidelines for restoration of severe dieback-affected sites which may be implemented by land-holders and government agencies.
- Continue mapping, surveying and assessing the extent of dieback within north-east NSW and south-east Queensland.
- Implement an 'alert system' so that new outbreaks are reported to the Bell Miner Associated Dieback Working Group.
- Undertake targeted surveys and monitoring of Bell Miners, rapid census of native bird species, and assessment of vegetation condition at priority locations.

**Findings**

The Harvesting Plan only vaguely identifies BMAD as a "potential future forest health issue" in the "NE corner of Cpt. 359". On our March visit we confirmed the presence of Bell Miner Associated Dieback in the north-east of the compartment in the vicinity of log dump 6 and found Bell Miners to be abundant in the area. We also noted large colonies of Bell Miners in adjacent forests. Over 20 hectares of State Forest in that area had a high proportion of lantana, abundant Bell Miners and some dieback. It was already a forest health issue.

We also found, that while not identified by the Forestry Corporation, there were large numbers of Bell Miners in recently logged forest around log dump 8. We considered that most of the logged flooded gum area to the east of log dump 8 was highly susceptible to BMAD and yet was still free of Bell Miners, a situation we believe will now worsen rapidly as the opening of the canopy and promotion of lantana encourages further Bell Miner invasion from log dump 8.

Aside from the above areas, we found most of the area proposed for logging surprisingly free of Bell Miners. We were concerned that Bell Miners would move through the forest along with the canopy opening and lantana promotion. NEFA considered "While all efforts should be made to avoid this, at the very least monitoring of their progress during the logging operation must be undertaken", accordingly recommending:

- **Existing Bell Miner Associated Dieback areas in the north east of compartment 359 (and all other occurrences) must be mapped, along with the current extent of Bell Miner colonies. The progress of Bell Miners as the logging progresses should be monitored.**

Our attempts to have something done about the promotion of both lantana invasion and BMAD were apparently in vain because both the Forestry Corporation and the EPA deny there is any relationship between logging operations, lantana or BMAD, so simply ignore the problem. During our August visit we identified that the BMAD affected area around log dumps 6 and 7 had been heavily logged, with a significantly reduced overstorey, extensive lantana and high numbers of Bell Miners present.
Bell Miner Associated Dieback affected forest near log dump 6, logged after our initial complaint. Such intensive disturbance will promote both lantana and BMAD.

In our September inspections we identified an extensive area to the north-west of log dump 12 (in the vicinity of AMG 475250, 6798500), that had once been rainforest with an overstorey of Steel
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Box, that now had a sparse tree cover, dense lantana, Bell Miners and evidence of dieback. We assumed the degraded nature of this stand to be attributable to past logging. We were shocked that despite the very sparse canopy (already far less than 50% of the original) the Forestry Corporation had logged the largest remaining trees, leaving few trees over a sea of lantana.

A large area to the north-west of log dump 12 was already severely degraded, with extensive lantana and evidence of BMAD, so the Forestry Corporation removed the largest surviving trees.
Steel Box, *Eucalyptus rummeryi*, is listed nationally as a ROTAP species, with the classification 3RC-. Steel Box is identified as "High-priority biodiversity at risk from the invasion of lantana" on the grounds that it is one of those species that "will be adversely affected by lantana, if lantana management is not undertaken within their distribution within the next five years". This has been carried through to NSW lists of species threatened by lantana.


Large parts of the compartments are comprised of Steel Box emergents with a dense rainforest understorey. These stands are considered to be incorrectly typed as Type 71 Richmond Range Spotted Gum and Type 72/74a Spotted Gum/Spotted Gum - Ironbark - Grey Gum, when they are unique ecosystems that should be identified separately as Steel Box dominated ecosystems in their own right.

Not content with trashing the already degraded area, the Forestry Corporation decided to extend it by undertaking intensive logging in adjacent stands of Steel Box.

The Border Ranges Rainforest Biodiversity Management Plan identifies BMAD as a specific threat to Black-striped Wallaby, Giant Barred Frog and Sooty Owl, with "existing weeds" also a threat to Golden-tipped Bat, Rose-crowned Fruit-dove, Wompoo Fruit-dove, *Owenia cepiodora* and Lowland rainforest EEC. The Scientific Committee's identification of "the Invasion, establishment and spread of Lantana" as a key threatening process identifies it as a particular threat to Onion Cedar *Owenia cepiodora*. The Scientific Committee identifies that weed invasion poses a major threat to Lowland Rainforest, including by lantana.

NEFA is concerned that the Forestry Corporation made no real attempt to identify the extent or severity of either lantana or BMAD within these compartments, which means that, as intended, it is impossible to assess the effect that the logging operations will have on their extent or severity. The
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exemplifies their approach to this growing problem and displays the sham that is "adaptive management". The EPA are equally culpable in this travesty.

Not content with just picking over the heavily degraded area for remaining large Steel Box, the Forestry Corporation decided to extend it by heavily logging (well in excess of 50% canopy removal) into adjacent areas.

NEFA has long maintained that logging of stands affected by, and susceptible to, Bell Miner Associated Dieback violates the principals of Ecologically Sustainable Forest Management (as detailed in the ESFM Group Technical Framework brought into effect by IFOA (2.7.1)), notably the principles to maintain the health, vitality and productivity of forest ecosystems. Not by any stretch of the imagination could logging of BMAD affected stands be considered without impact or benign, or be considered to maintain ecological processes or forest productivity, or to restore or maintain forest health and vitality.

The EPA claim that it is up to the responsible Ministers to enforce the clauses of the IFOA relating to ESFM, rather than them. Accordingly NEFA wrote to the then Environment Minister, Rob Stokes, on the 15 June 2014, attaching a detailed report we had prepared, asking him to urgently intervene to stop what we consider to be unlawful logging of forests affected and susceptible to Bell Miner Associated Dieback (BMAD). He passed it on to the EPA to deal with, though they wouldn't because they claim it is not their responsibility and they couldn't care less about it..

On the 29 August 2015 NEFA took the current Environment Minister on a brief tour of BMAD affected forests on the Richmond Range (north from Cherry Tree SF) to show him the extent of the problem and provided him with background information. In response to his questions, on the 31 August 2015 NEFA wrote to the Environment Minister providing him with evidence linking logging and BMAD, asking him to intervene to enforce the IFOA by:
Placing all BMAD affected and susceptible areas under a logging moratorium until such time as appropriate management responses that restore ecosystem health and vitality are identified, trialled and proven to be effective.

Logging is assisting and promoting the spread of lantana through these forests (lantana to west of IFOA crossing 1).
9. Ignoring Threatened Fauna

The Forestry Corporation have once again shown their contempt for threatened fauna. This is exemplified by all their fauna assessments for their IFOA Crossings claiming there were no threatened fauna on any of their routes, even where scratch marks on trees clearly showed the presence of Koalas. While such evidence of Koalas is widespread, it appears that adequate pre-logging Mark-up Surveys and Koala Mark-up Searches were not undertaken in many areas (if anywhere). Any comprehensive searching would have identified high use trees and should have identified high use areas.

During Compartment Mark-up (ahead of logging) the boundaries of exclusion areas and letters identifying the trees to be retained as habitat trees (hollow-bearing, recruitment and feed) are marked on the trees. Also during Mark-up Surveys "An adequately trained person must conduct a thorough search" for "threatened and protected species features", including Koala scats (to identify intermediate use habitat and High Use Areas), essential resources such as Yellow-bellied and Squirrel Glider sap-feed trees, Glossy Black Cockatoo feed trees. dens, nests and roosts of many species, and an array of threatened plants.

The TSL 5.2.1 (c) states "Where any of these features are found, the feature must be recorded, the Harvesting Plan, including the Operational map, must be amended accordingly and the appropriate condition applied". NEFA have looked at the latest version of the harvesting plan (20/3/15) and there is no mention of finding any "threatened and protected species features". Given that the Forestry Corporation found nothing, it would appear that who-ever undertook the Mark-up Surveys was not adequately trained and/or did not thoroughly search.

The impression that Mark-up surveys were not undertaken adequately is reinforced by the Forestry Corporation's apparent failure to identify areas with numerous, and obvious, Yellow-bellied Glider sap-feed trees, Koala high use trees and their failure to identify the numerous Onion Cedars.

NEFA has found that the Forestry Corporation is not undertaking adequate Mark-up surveys in all our audits, as exemplified by their frequent failure to identify obvious Koala High Use Areas, Yellow-bellied Glider Sap-feed Trees and threatened plants. Eventually the EPA decided to check for themselves, noting on their website:

- In June 2012, the EPA instigated a campaign to check Forestry Corporation of NSW compliance with mark-up requirements. The campaign clustered a number of audits over a week on north coast NSW forests from Sydney to the Queensland border.

- The EPA identified that in some areas, mark-up complied with licence requirements, and in other areas the EPA identified the need for improvements. In some areas, marking had not been performed ahead of operations, or was incomplete.

Regrettably, as found here, the EPAs inconsistent and weak responses to such systematic and repeated offences has been ineffective in redressing the problem. In NEFA's 2014 submission to the IFOA Review we stated:

- It is evident that the Forestry Corporation’s failure to locate many species and features, such as threatened plants, Koala High Use Areas, and Yellow-bellied Glider sap-feed trees, is due to their lack of expertise, refusal to do the required surveys and reluctance to allow threatened species to interfere with timber yields.
The inaction by the Forestry Corporation and the EPA at Cherry Tree SF proves that nothing has changed.

**9.1. Koala Habitat**

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”.

**Requirements**

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 triggering of Koala protections is dependent upon these pre-logging searches.

The Harvesting plan recognises that

*Evidence of koalas was found in the compartment ... It is recommended that the cpts are designated Koala intermediate use area.*

*marking-up must be conducted at least 300m in advance of harvesting operations In the event that a koala or scats (as noted in 5.2.2(i)) are found, a koala star search will be conducted to determine koala use area/s.*

**Findings**

Our inspections confirmed that Koalas are present, with numerous scratch marks on some grey gums and three Koala high use trees found. Large numbers of preferred feed trees were logged, though our ability to search around stumps and retained trees in the logging area was compromised by the extensive machinery disturbance, abundant logging debris around stumps and trees, and because in many places logging had occurred months before. There were also extensive areas of dense lantana which precluded searching. On those areas around the base of trees and stumps we were able to search within the logging area we found no evidence of prior searching.

The triggering of protection for Koalas relies on people thoroughly searching for scats ahead of logging. Over significant parts of the area, particularly on higher nutrient soils, there is a dense understorey of lantana from previous logging. This lantana is of sufficient density to preclude scat searching in substantial areas and make it difficult and time consuming in others. When NEFA first inspected the area in March we emphasised that in many areas that “the dense understorey, particularly of lantana, precludes the current prescription from being applied. Which means that, even with the best intention, Koala High Use areas cannot be found or protected over substantial areas. The requirement that ‘marking-up must be conducted at least 300m in advance of harvesting operations’, with trees searched at 10m intervals for Koala scats, is not being implemented”.

After our first inspection we recommended “Given that the current Koala prescription is not, and can not be, implemented over large areas, and the evidence of the presence of Koalas and abundant food trees, an alternative method of identifying core Koala habitat must be urgently implemented”.
More recently we have managed to undertake limited searches in parts of the logging area not overwhelmed by lantana, identifying koala high use trees and the need for "star searches" to identify Koala High Use Areas.

The required 20 Koala scats were easily found under two Tallowwoods adjacent to the track - (left of track) indicating the likely presence of a Koala High Use Area and the need to undertake 'star searches'.

 Nearby a mature Tallowwood was bulldozed out of the ground during track construction and two large Tallowwoods were undermined by the track construction.
In NEFA’s August inspection, searches around two Tallowwoods immediately adjacent to the track to the south-west of log dump 7 found they both had >20 Koala scats about their bases (AMG 476244, 6799222). It was evident that nobody (neither the Forestry Corporation nor EPA) had bothered to search the trees before us. A star search was not undertaken, though it is likely that the track was constructed through a Koala High Use Area. A nearby mature Tallowwood had apparently been bulldozed out of the ground during track construction and 2 others undermined by road construction.

This area still had an intact canopy and thus most of the area was free of lantana, so, aside from the steep terrain, there was no impediment to implementing the required searches before the roading.

In our recent audit NEFA observed a Koala at (AMG 476529, 6799127) which quickly climbed down its tree and scampered away. NEFA also located a Koala high use tree next to IFOA Crossing 9, which the Forestry Corporation should have located even with a cursory search. While lantana was present, it was patchy and the area was easy to search, which had not apparently been done before us. The high use tree was immediately adjacent to the "IFOA Crossing" no. 9, and within the IFOA exclusion area, 25 Koala scats were found under a Steel Box (AMG 474755, 6798952). This constitutes a "trigger tree" which should have been identified by the Forestry Corporation, so that the required star search could be undertaken. The scats were placed on a piece of wood on the edge of the track, when we returned a month later all but one of the scats had been removed, though fresh scats were found under the tree.

Koala "trigger tree" under which 25 Koala scats were easily found, had not been searched by the Forestry Corporation despite being within an exclusion area and having a track constructed next to it. This was identified in September, with the scats left in a pile on the edge of the road, when checked a month later all the scats, bar 1, had been removed - though the tree was still being used as fresh scats were found on the track under the tree.

The construction and operation of the snig tracks constitute Harvesting Operations, and were constructed illegally. It is apparent that there has been a failure to search for Koala scats in accordance with TSL 5.2.1 (a) and 5.2.2. (a) (b). TSL 5.2.1 (b) specifies "Harvesting Operations are prohibited in areas which have not been subject to compartment mark up surveys".
9.2. Black-striped Wallaby

The Black-striped Wallaby is identified as Endangered in NSW. The western part of the 'Border Ranges North and South' is particularly significant for this species, with the high numbers identified within the logging area and to the north in Mallanganee National Park highlighting the particular importance of this area. Black-striped Wallabies have small permanent home ranges, inhabiting dense vegetation during the day and emerging to feed in more open grassy areas at night. They mostly feed on native grasses, with some browse and forbs, and some introduced grasses, obtained (equally importantly) from both daytime refuges and nocturnal feeding areas. Management of the species needs to encompass nocturnal foraging as well as diurnal sheltering habitats.

Requirements

This Black-striped Wallaby requires the development of Site-specific conditions in accordance with TSL condition 1.2. TSL condition 1.2 (f) requires "Any Site-specific condition developed under this condition must be implemented". The EPA have prepared a generic prescription for this species, though they have never bothered to assess its effectiveness and have previously identified that they do not care if it is not complied with (i.e. in response to NEFA's 2009 complaint on Yabbra SF). The generic prescription includes 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.

TSL condition 5.17(a) states:

SFNSW must, 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.

The Harvesting Plan identifies that Black-striped Wallaby has been recorded at 7 locations, specifying:

Removal of no more than 50% canopy cover in the net harvest area. Incorporate the area as a priority site for the regional pest control program.

To the greatest extent practical, protect ground habitat from SFA. Ground habitat includes understorey vegetation, ground cover vegetation, leaf litter and fallen timber.

Hazard reduction work must consider the species ecology, promote and maintain understory mosaic, minimize impact on fallen logs >40 cm diameter.

The OEH website identifies "Preferred habitat is characterised by dense woody or shrubby vegetation within three metres of the ground. This dense vegetation must occur near a more open, grassy area to provide suitable feeding habitat. ... On the north coast, closely associated with dry rainforest but also occur in moist eucalypt forest with a rainforest understorey or a dense shrub layer".

The OEH website identifies threats to Black-striped Wallaby as including:

- Clearing, fragmentation and isolation of habitat for agriculture and forestry.
- Too-frequent burning associated with forestry and grazing resulting in simplification of habitat with loss of mosaic of dense understorey areas and open grassy areas.
- Predation by foxes.
• Weed invasions.

The Species Action Statement for Black-striped Wallaby identifies one of the actions as:

Undertake assessment of the effectiveness of private and public forest management prescriptions.

Findings

As identified throughout this report (ie notably Sections 4, 8, and 10) there are many areas that have been subject to more than 50% canopy removal, and throughout most of the net harvesting area there has been extensive, intensive and deliberate destruction of understorey vegetation. Given the large volumes of fuel left behind, the destruction of understorey vegetation will be significantly compounded by the post-logging burn. There has been no apparent attempt to implement the required mitigation measures identified for this species in accordance with TSL conditions 1.2 (f) and 5.17(a).

As noted in Section 8 this high level of disturbance is expected to increase the extent of both lantana and BMAD. While lantana has been found to be used as refuge for Black-striped Wallaby, it is expected that the increase in both lantana and BMAD will be detrimental to the Wallaby due to the shading out of grasses by lantana in grassy forests and daytime refuges. Similarly the increases in roads and tracks is likely to be detrimental due to likely increased predation by "wild dogs" and foxes.

9.3. Yellow-bellied Glider

Once again NEFA have found that the Forestry Corporation are refusing to apply the requirements for Yellow-bellied Gliders. As with Koalas, they don't look, don't find and don't protect. Undoubtedly the EPA's refusal to investigate, or take any action, in response to NEFA's reporting of a sap feed tree being cut down nearby at Royal Camp, has led the Forestry Corporation to believe that there is no need to implement requirements for this species. This time we found two areas with sap-feed trees, some of which had been damaged in logging.
Requirements
Sap-feed trees are those chosen by Yellow-bellied Gliders to tap for sap by chewing channels into the bark to concentrate sap for feeding. Only very specific trees are chosen. The TSL defines a sap-feed tree as:

“Sap feed tree” means a living tree that exhibits incisions, including V-notch incisions, made by a gliding possum for the purpose of feeding on exuding sap, which have not been fully occluded by bark or scar tissue at the time of compartment mark-up”.

The TSL 5.2.1 (a) (viii)) requires that “An adequately trained person must conduct a thorough search for, record and appropriately mark” Yellow-bellied Glider sap-feed trees. The TSL 5.2.1 (c) states “Where any of these features are found, the feature must be recorded, the Harvesting Plan, including the Operational map, must be amended accordingly and the appropriate condition applied”.

The TSL (5.6 (g) (iii)) requires that "All Yellow-bellied Glider and Squirrel Glider sap feed trees must be retained". As with other habitat trees, they must have debris around them removed or flattened to a height of less than 1 metre TSL (5.6 (h) (ii)). The TSL 6.17 (f) reinforces “All Yellow-bellied Glider sap feed trees must be retained. All Yellow-bellied Glider Sap feed trees must be marked for retention”.

The TSL 6.17 (g) further requires:

Within a 100 metres radius of each retained Yellow-bellied Glider sap feed tree, observation or den site record, 15 feed trees must be retained. Yellow-bellied Glider sap feed trees must not be counted towards these 15 feed trees. Retained feed trees must have good crown development and should have minimal butt damage and should not be suppressed. Mature and late mature trees must be retained as feed trees where these are available.

Similarly the TSL 6.17 (g)(ii) also requires retention of 15 feed trees within 200m of a call detection site record. The TSL 6.17 (g)(iii) specifies that retained trees "must be of the same species as the identified sap feed tree or identified den tree, or should be trees that shed their bark in long strips" and TSL 6.17 (g)(iv) specifies that they "must be marked for retention”.

Findings
Yellow-bellied Gliders have been recorded by calls at a variety of locations along the main roads through the compartments, indicating that they are more widespread. Around each record the requirement is to retain 15 feed trees within 200m. There is a major concentration of records to the east of Log Dump 6 which NEFA briefly inspected and did not observe any trees specifically marked as feed trees for Yellow-bellied Gliders. Similarly part of another concentration of Yellow-bellied Glider records to the north of log dump 14 was inspected as part of the habitat tree Site 2 and no specifically marked trees were identified. NEFA does not consider that there has been any apparent attempt to comply with this prescription.

The feed tree retention requirements around call detection sites are only 1.2 per hectare, though given that for compartment 359 we found the effective retention rate for R trees was only 1.5 R trees per hectare (see section 5), the high probability of crown and butt damage, and the specific species requirements for Yellow-bellied Glider feed trees, NEFA doubts that retention requirements have been met.
The case for failure to comply with retention requirements around sap-feed trees is more clear-cut, as the retention of 15 feed trees within 100m equates to 4.8 feed trees per hectare. As well as species restrictions, they can also not count sap-feed trees. The Forestry Corporation cannot rely upon chance to satisfy this requirement.

During the course of our investigations NEFA identified a number of Yellow-bellied Glider sap-feed trees at one location to the south of log dump 7 and engaged the services of fauna expert David Milledge to investigate our findings. Immediately upon arriving at log dump 7 Mr. Milledge identified Yellow-bellied Glider sap-feed trees some 50 metres to the north, as well as confirming our records and others to the south. The following records have been confirmed by Mr. Milledge, though the comments and opinions are NEFAs. NEFA have looked at the latest version of the harvesting plan (20/3/15) and there is no mention of finding any Yellow-bellied Glider sap-feed trees.

**Case 1**

A patch of 4 Yellow-bellied Glider sap-feed Grey Gums (*Eucalyptus biturbinata*) was located about 50m to the north of log dump 7. These occurred on both sides of the access track and were readily visible from the log dump. At the time of NEFA’s first visit in early March this log dump was being used, and the EPA assessed tree retention in this area soon after NEFA’s initial complaint. Given their location, these trees should have been readily observable by “*An adequately trained person*” conducting “a thorough search”. Given that all four trees were marked for retention as either Hollow-bearing (H) or Recruitment (R) habitat trees, both the Forestry Corporation and the EPA should have identified them as Yellow-bellied Glider sap-feed trees.

50 metres from log dump 7, two Grey Gums marked as H trees had obvious sap-feed marks from Yellow-bellied Gliders, as well as numerous scratch marks from Koalas (AMG 476471, 6799547). They were 60 and 74 cm dbhob.
One tree was observed to have been used recently (based on the presence of a fresh sap run) and was likely to have been in usage at the time of logging. It was considered that the other 3 had not been used for some time and may have been “fully occluded by bark or scar tissue at the time of compartment mark-up”. Though they should have been seen.

Across the track from the two H trees, another H tree (72cm dbhob) and an R tree (55cm dbhob) had sap-feed marks from Yellow-bellied Gliders (AMG 476451, 6799557). Both were Grey Gums with debris left around them. The R tree is suppressed.

Feed tree retention within 100m of these trees was not assessed, though there appeared to be a significant shortfall in the required 15 mature and late mature trees of the appropriate species, and there were a number of stumps of Grey Gums within this area.

**Case 2**

An area with 8 Yellow-bellied Glider sap-feed Grey Gums (*E. biturbinata*) was located to the south of log dump 7. All had long-term usage, though 5 were considered to have been used recently and were likely to have been in usage at the time of logging. It was considered that 3 had not been used for some time and may have been “fully occluded by bark or scar tissue at the time of compartment mark-up”. These trees mostly occurred on a steep slope and should have readily observable by "An adequately trained person" conducting "a thorough search", particularly given their high density and that all the trees were marked for retention as H or R trees and so must have been assessed. There was no indication that they had been recognised as Yellow-bellied Glider sap-feed trees, as if they were this is required to be recorded in a revised Harvesting Plan.

Of the 5 trees actively being used, 2 had suffered significant canopy damage during the logging operation and two others had suffered damage to their trunks. One had debris piled around its base.
A Grey Gum beside a logging track had been assessed as it was marked with a R, though the abundant and obvious Yellow-bellied Glider sap-feed marks on its trunk had apparently been missed (AMG 476412, 6799031). It showed signs of recent Yellow-bellied Glider sap-feeding had, a 40cm dbhob, and its base had been damaged in the logging.

A nearby Grey Gum was marked with a R, though the abundant and obvious Yellow-bellied Glider sap-feed marks on its trunk had apparently been missed (AMG 476435, 6799085). It also showed recent sap-feeding use, had a 40cm dbhob, and extensive canopy and trunk damage.
A nearby Grey Gum had been assessed as it was marked with a R, though the abundant and obvious Yellow-bellied Glider sap-feed marks on its trunk had apparently been missed (AMG 476429, 6799047). It showed signs of recent Yellow-bellied Glider feeding, had a 43cm dbhob, and logging damage to the upper trunk.

A Grey Gum beside a track was marked with a R, though the abundant and obvious Yellow-bellied Glider sap-feed marks on its trunk had apparently been missed (AMG 476473, 6799095). It also showed signs of recent use, had a 48cm dbhob and minor trunk damage.
A Grey Gum marked with a R had abundant and obvious Yellow-bellied Glider sap-feeding marks on its trunk (AMG 476540, 6799073). It also showed signs of recent use, had a 53cm dbhob, was suppressed, had severe crown damage and had debris left around it.

The 5 trees recently used by Yellow-bellied Gliders for sap-feeding were all Grey Gums (E. biturbinata), had diameters of 40, 40, 43, 48 and 55 cm (dbhob), and were marked as recruitment (R) trees. A random search of stumps in their vicinity recorded the following diameters: Spotted Gum 62, 66, 66, 67, 76, 86, Grey Box 59, 68, 70, 70, 70, and Grey Gum 52 cm. The heads of felled Spotted Gums had shed most of their bark and so could not be searched for Yellow-bellied Glider sap-feeding marks. Of the parts of heads of Grey Box and the Grey Gum able to be searched amongst the debris no sap-feed marks were found (note that a thorough search was not undertaken).

These findings are consistent with findings elsewhere in Cherry Tree State Forest: Grey Gums are among the least favoured merchantable tree species and are retained by default, cohorts of the more merchantable tree species with the largest dbhob are being logged rather than retained as R trees, and R trees are frequently damaged during logging. In this case the selective commercial bias seems to have favoured the retention of Yellow-bellied Glider sap-feeding trees as the majority are small Grey Gums. As a consequence a number of Yellow-bellied Glider sap-feeding trees have been retained by default rather than as a result of applying the Licence prescriptions. However, it is probable that a number of larger sap-feeding trees may have been taken (of species other than E. biturbinata) during logging operations although evidence for this has been lost as a consequence of felling.

No trees were observed to have been marked specifically as Yellow-bellied Glider sap-feed trees in the vicinity. Logging had removed most of the largest mature and late mature trees. While retention
rates were not assessed, it is obvious from observations that they have not been achieved, particularly for trees remote from exclusion areas (ie the first four above).

There were also a number of Grey Gums with old Yellow-bellied Glider sap-feed marks in the vicinity Above LEFT: A marked R tree with numerous old YBG feeding marks, a 42cm dbhob, and significant canopy damage from the logging operation (AMG 476481, 6799257). Above RIGHT: A marked H tree had numerous old YBG sap-feeding marks and a 80cm dbhob (AMG 476400, 6799131). LEFT: A marked R tree had old YBG sap-feeding marks and a 45cm dbhob (AMG 476424, 6799098).
**Discussion**

The requirements for Yellow-bellied Gliders are legally very explicit and leave very little room for miss-interpretation. Yet NEFA's audits in the vicinity of Cherry Tree State Forest (i.e. Yabbra, Doubleduke, Royal Camp SFs) have repeatedly found that the Forestry Corporation refuses to implement these requirements and that the EPA are reluctant to enforce them. At Doubleduke SF the EPA went so far as to refuse to investigate two currently-used Yellow-bellied Glider sap-feeding trees we reported to them (despite being shown one). And after the EPA assured NEFA (3 July 2012) they were making the “marking and protection of yellow-bellied glider sap feed trees as one of its priorities”, at Royal Camp SF they were shown (24 August 2012) an obvious felled sap-feed tree by an acknowledges expert, only to later (15 August 2013) justify their decision not to do anything about it on the grounds they “could not determine beyond reasonable doubt whether the incisions had been made by a yellow bellied glider”. This just confirms both their lack of expertise and will.

Because of the EPA's refusal to enforce the requirements for Yellow-bellied Gliders it is apparent that the Forestry Corporation don't see any need to implement the prescriptions. This is exemplified by their treatment of Yellow-bellied Gliders at Cherry Tree SF.

It is evident that Forests NSW have failed to meet the legal requirements of their Threatened Species Licence for Yellow-bellied Glider by failing to identify obvious Yellow-bellied Glider sap-feed trees, and failing to identify, mark and retain 15 appropriate feed trees within 100m of sap-feed trees. We do not have evidence that any Yellow-bellied Glider sap-feed trees were not marked for retention or were logged, though this seems highly likely given the number that we found and the failure of the Forestry Corporation to look for them. It is particularly disappointing (though not surprising given their lack of expertise) that the EPA did not identify this problem when they inspected the area around log dump 7 in March.

For Yellow-bellied Gliders the evidence is that:

a) "An adequately trained person" did not "conduct a thorough search" for Yellow-bellied Glider sap feed trees. in contravention of TSL 5.2.1 (a) (viii);

b) Debris was not removed from around sap-feed trees in accordance with TSL 5.6 (h) (ii); and,

c) 15 appropriate feed trees were not retained within 100m of sap-feed trees as required by TSL 6.17 (g) (i), (iii) and (iv).

### 9.4. Squirrel Glider

An eight hectare Squirrel Glider exclusion area has been identified within the area. NEFA inspected most of the boundary of the Squirrel Glider exclusion area for marking, and contrary to requirements there has been no marking of the boundary, and there had been numerous intrusions into it.

**Requirements**

The TSL (5.1 (f)) requires that "All exclusion zone and buffer zone boundaries must be marked in the field" and (5.1 (h)) requires that "Marking-up must be conducted at least 100 metres in advance of harvesting operations, road construction and road re-opening operations".

The TSL (5.1 (a)) states "All specified forestry activities are prohibited in exclusion zones" and that "Trees must not be felled into exclusion zones" (except by accident). Though the Squirrel Glider
prescription 6.16 (c) allows for 6 trees per 200m to be felled into Squirrel Glider exclusion areas, subject to the crowns not being removed (f).

**Findings**

NEFA inspected most of the boundary of the Squirrel Glider exclusion area for marking, and contrary to requirements there has been no marking of the boundary.

The western boundary was assessed for intrusions. A snig track had been constructed to delineate part of the boundary, though debris from the track has been pushed up to 10 metres into the exclusion zone at many localities (i.e. AMG 475450, 6799333, 475484, 6798393). At the base of the track machinery disturbance had extended into the exclusion area (AMG 475547, 6798457). Tree heads had been felled 25-30m into the exclusion area at two localities (AMG 475455, 6798270, 475456, 6798292), with one removed, and these were not considered accidental. Given the frequency of intrusions, and their nature, NEFA maintains there have been breaches of 5.1. (a) and 6.16 (f).
Incursions into Squirrel Glider exclusion area.
10. Intensifying Logging

The logging of this area is meant to be based on Single Tree Selection (STS) with no more than 40% of the basal area harvested. Seven records of Black-stripped Wallaby within the area also trigger the requirement for 50% canopy retention. NEFA's visual appraisal shows that many areas have been logged far more intensively than allowed.

Requirements

Currently public forestry is regulated by the Integrated Forestry Operations Approval. It authorises two silvicultural methods that can be applied in north-east NSW's forests:

- Single Tree Selection is meant to be the light impact method where no more than 40% of the basal area is harvested in any one operation.
- Australian Group Selection is the intensive method that allows for up to 22.5% of a logging area to be patch clearfelled on 4 occasions at 7 year intervals. Patches are not allowed to be bigger than 50x50m.

The IFOA (5.3) states:

(3) This approval applies only to logging operations where trees are selected for harvesting using Single Tree Selection or Australian Group Selection.

The IFOA (clause 5.10) defines STS:

“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 20cm 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.

Single Tree Selection is the most widely used silvicultural prescription, though it is now often used to undertake the heaviest logging where 80% of the basal area is removed over large swathes of forest. The Forestry Corporation have created a loophole by allowing the 40% to be averaged across the harvest area, to compensate for the heavier logging by excluding logging from a part of the area and claiming the average removal is only 40%. They then return to log the excluded area. While STS was based upon 15 years between logging events, they often return a few months or years later. Despite this being a blatant rorting of the intent of Single Tree Selection the EPA refuse to do anything about it because they claim it is an IFOA requirement and thus can only be enforced by the responsible Ministers.

The Harvesting Plan states:

5.2 Single Tree Selection

- This operation will be managed with the object of harvesting trees that have reached their maximum economic end use, and removing poorer quality and less vigorous trees to allow the remaining high-quality trees to grow on.
- Tree removal and ground disturbance must also maximise regeneration opportunities.
- STS must remove no more than 40% of the basal area across the net harvest area.
- BA removal may exceed 40% in some localized areas, but will be balanced by Visual Protection Zone alone Cherry Tree Rd (50% canopy retention), Black-stripped Wallaby.
Wallaby modified harvest area over compartments 359 & 360 (50% canopy retention), non-harvest areas and tree retention across the tract.

- Trees with dbhob <20cm must not be selected for harvesting under STS (1.5.10 IFOA).

**Findings**

NEFA maintains the intent of both the STS and Black-striped Wallaby prescriptions is that they be applied across the logging area, not, as the Forestry Corporation claim, averaged out so that large areas can be heavily logged well in excess of prescriptions provided this is compensated by lighter logging of other areas. It is self-evident that logging has been well in excess of these prescriptions across much of the logging area, and NEFA maintains that it is likely that overall canopy retention will be less than 50% and basal area retention less than 60% within the nett logging area.

NEFA have not attempted to quantify this, though consider that this over-logging is readily identifiable visually. The following photographs are indicative of the numerous areas that have been subject to more than 40% basal area removal and 50% canopy reduction.
NEFA maintains that numerous areas have been logged in excess of 40% basal area removal in contravention of IFOA clause 5.3 and in excess of 50% canopy removal in contravention of the Black-striped Wallaby prescription (see section 9.2). The EPA refuses to act on IFOA requirements because they claim it is the responsibility of the Ministers.
11. Clearing Cultural Heritage

A nationally recognised cultural heritage site occurs along Cherry Tree Road within the logging area. It was identified as an important site in the Regional Forest Agreement due to its significance to the regional community for its visual appeal. As we have found before at Styx River, the Forestry Corporation have displayed contempt for maintaining this site’s visual values.

While the site was mapped as around 300m wide through these compartments, the Forestry Corporation have reduced it down to 50m each side of the road. Not being content with reducing the required protection, the Forestry Corporation have intentionally placed two log dumps within the zone, and were logging it with total disregard for the prescriptions when first inspected by NEFA. NEFA is particularly concerned that this abuse of a Cultural Heritage site continued after we brought the problem to the attention of the Forestry Corporation, EPA and the Environment Minister.

Requirements

The "Mallanganee Flora Reserve, Lookout and State Forest Road" was identified and mapped in the Regional Forest Agreement process as a Cultural Heritage site comprising the then Mallanganee Flora Reserve and a visual strip along Cherry Tree Road. It is stated “The Mallanganee Lookout, Flora Reserve and the Cherry Tree Forest Road are of regional social significance as widely known landmarks amongst members of the Lismore, Woodenbong, Mallanganee and Tenterfield communities, which are valued for their sightseeing”.

The Forest Agreement for the Upper North East Region (1999) envisioned that such identified cultural heritage sites would be protected into the future through subsequent implementation requirements. The North East NSW Regional Forest Agreement Attachment 4 states:

**Protection and Management of National Estate Values**

1. Parties endorse the findings of the Commonwealth/NSW joint studies of the National Estate in the Upper North East and Lower North East regions (the Joint Study) and agree that National Estate Values exist as documented in publicly available plots of GIS coverages and the following published documents:

   **Upper North East**

   …

   (d) Community Heritage Values Identification and Assessment Project for the Upper and Lower North East Regions, Volumes 1-3, Context Pty Ltd (1998);

This includes "Mallanganee Flora Reserve, Lookout and State Forest Road".

The IFOA (16) states:

(2) Where SFNSW identifies a heritage item in the proposed locations of forestry operations, it must take reasonable measures to ensure that the item is protected from any adverse impacts of those forestry operations.

(3) The measures to be taken to ensure that a heritage item is protected from any adverse impacts of forestry operations must be identified in any site specific (sic) that applies to the forestry operations concerned.

The "Mallanganee Flora Reserve, Lookout and State Forest Road" was identified in the RFA as a mapped feature averaging around 300m wide through these compartments, though the Forestry Corporation have decided that the feature only applies to 50m each side of Cherry Tree Road,
about a third of what was required. The Harvesting Plan identifies this reduced area as a "Special Prescription (FMZ 3B) 50m Visual Protection Zone (50% canopy retention)".

The Harvesting plan identifies that:

Visual protection zone along Cherry Tree Road. Harvesting operations within this area must aim at retaining the visual amenity of the forest by one or more of the following options, or an appropriate alternative:

- Minimise snig tracks within visible forest areas.
- Snig tracks to run perpendicular to the road where practical.
- Retain understorey vegetation where practical to provide visual screening.
- Limit trees removals to maximum 50% of canopy.

Log dumps are permitted within the visual protection zone. Measures should be taken to retain the visual amenity, e.g. minimise dump size, select location not on top on ridgeline.

**Findings**

On our first inspection it was evident that the Forestry Corporation was logging more intensively than was allowed in what was meant to be a visual protection zone along Cherry Tree Road that had been identified as a Cultural Heritage site in the Regional Forest Agreement. At that time they had also constructed Log Dump 8 within the protection zone. We emphasised "The Forestry Corporation need to take their responsibility for maintaining a visual buffer along Cherry Tree Road seriously".
Log dump 8 was constructed slightly back from Cherry Tree Road (in background), though most of it is also located within what is supposed to be the 50m modified harvest zone.
Extensive clearing in the Visual Protection Zone to the west of log dump 8 highlighted in NEFA's original complaint. RIGHT: 120cm diameter stump of what would have been a majestic tree adjacent to road.

On our first visit NEFA found significant and obvious disturbance within the supposed visual protection zone. It was apparent that the Forestry Corporation were not maintaining the visual amenity along Cherry Tree Road, and were instead significantly degrading it.

Since NEFA's complaint the Forestry Corporation have constructed log dump 9 right beside the road, taking in a large section of the supposed visual protection strip, and continued intensive logging with obvious disregard for visual values. Log dump 9, and associated debris piles, measures some 90 by 40m and thus represents a significant part of the supposed visual protection strip. The construction of log dump 9, as with log dump 8, was an intent of the planning process, demonstrating the depth of the Forestry Corporation's contempt for cultural heritage.

Log Dump 9 was constructed right beside Cherry Tree Road (on right) after NEFA raised its concerns, within what is supposed to be a visual cultural heritage site. It is 88m long and 37m wide, it certainly wasn't minimised.
Forestry Corporations careless ongoing mismanagement of visual cultural heritage, undertaken after NEFA raised its concerns. Note that ‘Kurts Shithouse’ is written on the National Park side of the road.

It is evident from the photographs herein that even within the reduced area classed as "Special Prescription (FMZ 3B) 50m Visual Protection Zone (50% canopy retention)" significant parts have had more than 50% of the canopy removed, most of the understorey vegetation removed and the soil exposed. Such abuse does not comply with the Harvesting Plan and, when combined with the two log dumps, does not comply with NSWs obligations to protect Cultural Heritage sites as identified in the Regional Forest Agreement.

Like ESFM requirements and silvicultural prescriptions, the EPA will not do anything about cultural heritage and are intending removing it from their new IFOA. Given that the protection of cultural heritage is a requirement of the RFA and the IFOA, its protection is the responsibility of the Ministers for the Environment and Forestry (at least for a while longer). They are the ones who have the power to do something about such travesties, though apparently they do not have the will.
12. Hauling on the No Haulage Road

NEFA is also concerned that the road to the north appears to be used as the logging road despite being clearly identified as "no haulage", because of the locality of the endangered Ripple-leaf Muttonwood right beside the road and the poor sight distances turning onto the Bruxner Highway.

Requirements

The Harvesting Plan (6.4) notes:

**NOTE:** Haulage is NOT permitted north through Mallanganee NP due to flora protection issues and inadequate site distance at the top of the range onto Bruxner Hwy. Bulmer Rd is not suitable for haulage due to numerous steep, narrow sections with blind corners.

Findings

Contrary to the harvesting plan, Cherry Tree Road through to Bulmer Road and onto the Bruxner Highway has been heavily trafficked, has signs alerting drivers to its use by log trucks, and is apparently the principal haulage route. Local residents have complained to NEFA that this road, rather than the identified haulage route of Butlers and Deep Creek Road, has been used throughout the logging. Nothing has been done to highlight or protect the location of the Ripple-leaf Muttonwood adjacent to Cherry Tree Road.

We identified this as a potential problem to the Environment Minister in late August. As of late September we confirmed that this route was still being used for haulage. At that time all traffic from the current logging was exiting the area along Pennefathers Road and turning north onto Cherry Tree Road in the direction of the Bruxner Highway, despite this road clearly being identified as "No Haulage" on the Harvesting Plan map and in the Plan. At that time Butlers Road was not being used. NEFA have looked at the latest version of the harvesting plan (20/3/15) and there is no change to haulage limitations.
Extract from Harvesting Plan showing the intersection of Pennefathers Rd and Cherry Tree Road, with Cherry Tree Rd to the north clearly identified as "No Haulage".

intersection of Pennefathers Rd (background) and Cherry Tree Road (foreground), clearly showing most traffic turning to the north onto the "No Haulage" road. Photo was taken facing east.