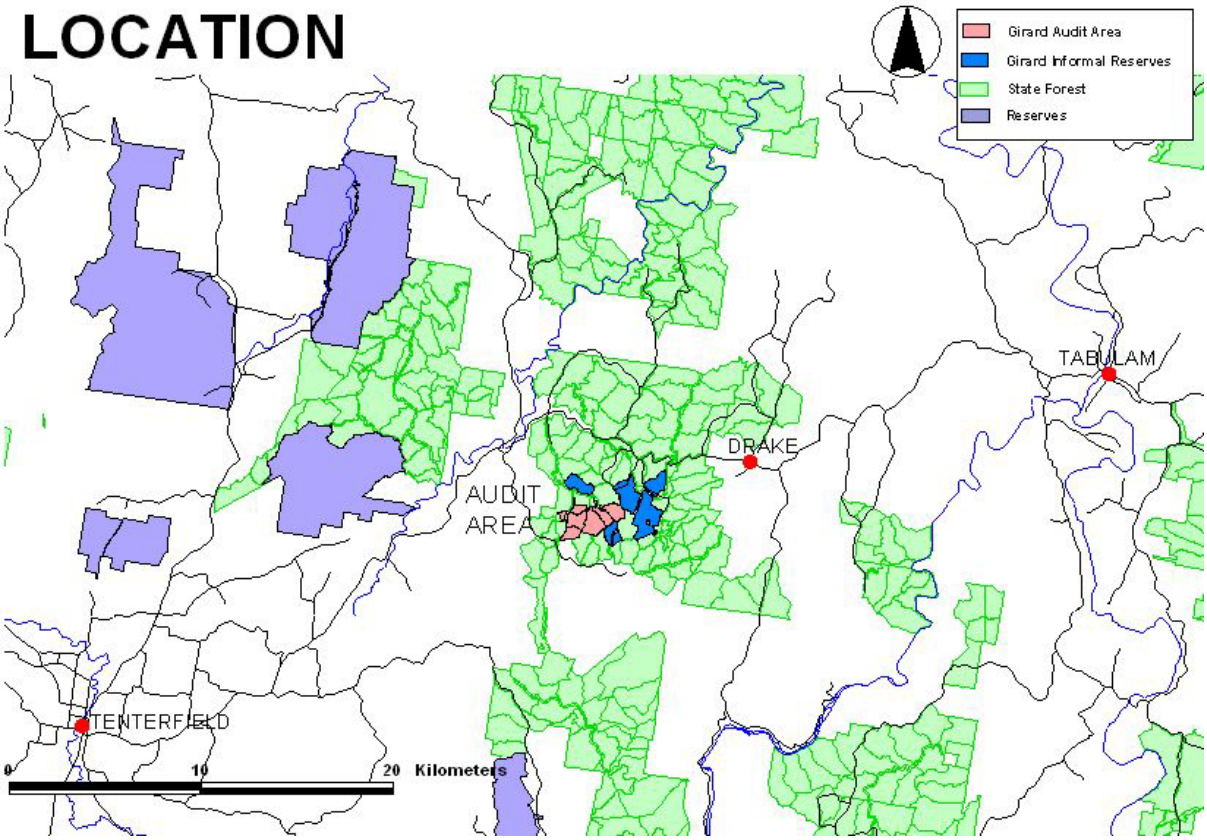
PRELIMINARY AUDIT OF GIRARD STATE FOREST COMPARTMENTS 44, 45, 46, 54, 55 and 56

Dailan Pugh, August 2010
For North East Forest Alliance

INTRODUCTION

This report is the result of a 2 day field assessment of logging operations in compartments 44, 45, 46, 53, 54, and 55 of Girard State Forest undertaken on behalf of the North East Forest Alliance (NEFA) on the weekend of the 7 and 8 August 2010. This assessment was undertaken by Dailan Pugh in company with consultant zoologists David Milledge and Georgia Beyer and consultant botanists Annette McKinley, Barbara Stewart and Andrew Murray. A number of other people assisted at various times.

The audited compartments encompass 515ha in Girard State Forest, to the west of Drake in the upper catchment of the Clarence River valley in north-east NSW. Of this area, 333 hectares are available for logging. Detailed audits were only undertaken of 6 ha, representing less than 2% of the total loggable area, though incidental observations were made elsewhere. It is emphasised that only a small part of the area was inspected and that therefore the breaches identified herein only represent a sample of those that occurred.



As in Yabbra and Doubleduke State Forests, this brief audit of Girard State Forest has revealed that there has been a systemic failure by Forests NSW to comply with its licence conditions for logging. Breaches have been documented of 2 conditions of their Integrated Forestry Operations Approval, 24 conditions of their Threatened Species Licence, 9 conditions of their Fisheries Licence and 10 conditions of their Environment Protection Licence.

Of particular concern is that Forests NSW heavily logged a 9 hectare stand of 50m tall high quality oldgrowth forest that had been specifically incorporated into a *Special Prescription Zone* (FMZ3B) to enhance and protect its values. The logging undertaken destroyed the oldgrowth values this area was meant to protect and thus contravened the North East Regional Forest Agreement signed by the State and Commonwealth Governments in 2000.

This oldgrowth stand was dominated by giant trees, some over 2 metres in diameter and over 50 metres tall, towering over a rainforest understorey and inhabited by threatened species such as Stuttering Frogs, Sooty Owls, Powerful Owls, Golden-tipped Bats, Yellow-bellied Gliders and Koalas.

All of the big old trees were required to be retained to satisfy standard prescriptions, though only two thirds of them were spared. Forests NSW left inappropriate defective trees to meet prescriptions, piled debris around bases of retained trees ready for burning, trashed the rainforest understorey, trashed streams that were meant to be protected, and dropped trees into adjoining rainforest exclusion areas. Not bad for what was meant to be a "Special Prescription Zone" contributing towards our national reserve system.

A detailed audit of another area with special fauna values revealed that exclusion areas established for the Stuttering Frog had not been marked and had been intruded into, that the required retention of trees for Yellow-bellied Gliders was inadequate with not a single one of the required feed trees marked, and that only 16% of the required numbers of habitat trees had been marked for retention.

As in Yabbra and Doubleduke State Forests, this brief audit of Girard State Forest has revealed that there has been a systemic failure by Forests NSW to implement many of the measures required to protect threatened species (as listed under the *Threatened Species Conservation Act* 1995) and their habitats as required under the conditions of Forests NSW's Threatened Species Licence, most notably:

- the failure to identify roost, den and nest sites for threatened fauna species;
- inadequate marking up and protection of exclusion areas;
- inadequate protection of understorey habitat; and,
- inadequate marking up, retention and protection of required habitat and feed trees.

As in Yabbra State Forest, there has been a systemic failure by Forests NSW to properly implement the measures required to protect streams and water quality by the Environment Protection Licence (issued in accordance with the *Environment Operations Act* 1997) and Fisheries Licence (issued in accordance with the *Fisheries Management Act*, 1994).

Forests NSW were advised that this audit was to take place two weeks in advance. Sight unseen, they were also advised that the above breaches were expected to be found in Girard State Forest as they are so systemic that they are now expected in all logging

operations in the region. While it was evident that there had been some attempt to audit operations and improve marking up the extent of breaches is beyond easy remediation.

The author also accompanied Forests NSW on a site inspection to show them the major breaches revealed by this audit. Forests NSW's own breach reports covering these compartments were subsequently reviewed. Of the 13 breaches they identified this year (one additional breach is unidentifiable), 9 were identified before I announced our audit and, of these, 3 were independently found in our brief audit with the remaining 6 all relating to trees being dropped and pushed into streams. Of the 4 identified after I announced our audit, 3 related to habitat and recruitment trees and, significantly, one related to a major intrusion into a wildlife corridor and FMZ2 area.

The records indicate that no action has yet been taken for a single breach, other than the contractors being talked to occasionally. The poor identification by Forests NSW of breaches and the lack of any meaningful penalties is a major part of the problem.

This is the third audit undertaken in this program and adds to the findings of the NEFA audits of compartments 162 and 163 in Yabbra State Forest and compartments 144, 145 and 146 of Doubleduke State Forest. It demonstrates that the numerous breaches identified in those State Forests were not isolated cases and that Forests NSW are routinely and comprehensively breaching licence requirements across the region. It is particularly worrying that many of these breaches are similar to those routinely found in audits in the late 1990's (as documented in NEFA's Yabbra audit report). Not only are these breaches now systemic across the region, they have apparently been going on for over 10 years as compliance has deteriorated.

Over a decade ago the NSW Government deliberately removed third party recourse to the courts to make Forests NSW comply with its statutory obligations. At that time the Government assured NEFA that we could rely upon the regulatory agencies to enforce environmental laws. Time has shown that the regulatory agencies have failed their responsibilities and simply overseen a slide in standards and the loss of numerous trees, forests and animals that were required to be protected.

Dailan Pugh OAM,
August 2010

SUMMARY

Documents relied upon and their legal authority:

- **North East Forest Agreement (2000)** NSW and Commonwealth Governments, under the NSW Forestry and National Park Estate Act 1998
- **IFOA;** Integrated Forestry Operations Approval for Upper North East Region, under the Forestry and National Park Estate Act 1998.
- **TSL**: Threatened Species Licence, under the Threatened Species Conservation Act 1995.
- **EPL**: Environment Protection Licence, Appendix A, Schedule 4 and Schedule 5, under Environment Operations Act 1997.
- **FL**: Fisheries Licence, under the Fisheries Management Act, 1994.

SUMMARY OF LICENCE BREACHES FOUND AND THEIR REGIONAL CONTEXT

Condition	Intent	Breach in this audit	Frequency across audits
INTEGRATED FORESTRY OPERATIONS APPROVAL			
IFOA 5(3)	Limiting the intensity of "Single Tree Selection" logging to removal of 40% of basal area.	In the measured stand of oldgrowth in a special prescription zone, 51% of the basal area was removed. Removal appeared to be more excessive elsewhere.	Appears to be common, though first time audited.
IFOA 9(1)	Implementing the Forest Management Zoning System	Breaches of FMZ 2 and 3A identified by FNSW. Breaches of FMZ3A identified in this audit. Logged an FMZ3B area without applying basic prescriptions, certainly did not identify, "*maintain or enhance the values that the area is zoned to protect*". Assessed most FMZ 8 areas as part of pre-harvesting, though missed some significant drainage lines. Failed to reclassify any FMZ8 areas.	Regular breaches of integrity of FMZ2 and 3A exclusion areas. Mapping and delineation of unmapped drainage lines was more comprehensive than at Yabbra (where it was systemic), though still some failures. Failure to reclassify FMZ8 areas is systemic.
THREATENED SPECIES LICENCE			
TSL 3(a)	Planning to take account of licence requirements.	Known records of a range of threatened species (particularly Koala and Yellow-bellied Glider) were not properly taken into account in planning. Claim that suitable roost trees for micro-bats not present clearly erroneous.	
TSL 3(b)	All required species-specific requirements to be included in Harvesting Plan.	Known records of a range of threatened species (particularly Koala and Yellow-bellied Glider) and rare forest types and required prescriptions were not mentioned in the harvesting plan.	
TSL 5.1 (a) i	Forestry operations generally excluded from exclusion zones	Examples found of forestry operations in exclusion zones for Stuttering Frog and rainforest.	Occasional. More common where exclusion zones need to be applied to stream banks rather than streams.
TSL 5.1(f)	Requires marking of exclusion zone boundaries on the ground.	In many localities, particularly away from roads, exclusion boundaries have not been marked. Examples found for streams and Stuttering Frog.	Often
TSL 5.2.1 (a)	Requires a trained person to search for nests, dens, scats and critical habitat features for a range of threatened species as part	The frequent failure to mark up exclusion zones and mark habitat and feed trees, along with the failure to find the targeted features, is evidence that this requirement is not being	Systemic

	of marking-up logging areas.	adequately implemented.	
TSL 5.2.2 (a)	Requires marking-up at least 300m in advance of logging in preferred Koala habitat.	The whole of the area (outside rainforest) represents preferred habitat, yet the evidence is that at least some areas were not marked up prior to logging.	Systemic
TSL 5.2.2 (b)	Requires thorough searches for Koala scats in advance of logging.	The failure to mark up some areas and the failure to locate scats where Koalas were found is evidence that this was not adequately done.	Systemic
TSL 5.4 (a)	Protection of rainforest	At two localities destruction of rainforest was recorded, once apparently due to poor marking and once due to poor felling.	Regular
TSL 5.6 (a) (i)	Retention of 10 hollow-bearing habitat trees per 2ha for animals	Required numbers of habitat trees not retained (even including unmarked trees). Marking of habitat trees for retention measured as low as 1 per 1.2ha.	Systemic
TSL 5.6 (a)(ii)	Retained habitat trees meant to be largest in stand and have minimal butt damage.	Many of largest trees required to be retained logged. Some retained trees have major butt damage.	Systemic
TSL 5.6 (a)(iii)	Retained trees to represent the range of species with hollows	Logging biased towards most commercial species and species retained which FNSW have previously claimed don't have hollows.	Significant discrepancies with treatment of Brush Box
TSL 5.6 (b)(i)	Retention of 10 mature trees per 2 ha as recruitment hollow-bearing trees	Recruits are the most heavily targeted size class for logging, with significant shortfalls in retention requirements. Marking of recruitment trees for retention measured as low as 1 per 1.4ha. 40% of marked trees at one site undersized.	Systemic
TSL 5.6 (b)(ii)	Retained recruitment trees meant to be healthy	Many retained trees are suppressed, have poor crowns and have butt damage. 70% of marked trees at one site suppressed.	Systemic
TSL 5.6 (g)(ii)	Damage to retained trees must be minimised by keeping debris away, and minimising disturbance around base	Debris left and/or pushed around bases of many retained trees, with extensive soil and understorey disturbance. At audit sites 70-80% of trees had debris around bases. Cases of deliberate piling of butts against retained trees about log dumps.	Systemic
TSL 5.6 (g)(iii)	Trees required for retention must be marked.	There is only partial marking of habitat and recruitment trees (mostly near tracks). No marking of Yellow-bellied Glider sap feed trees or stags.	Systemic
TSL 5.17(a)	To protect ground habitat – understorey, ground cover, logs.	Machinery damage to understorey and soils is excessive, extreme and not minimal.	Systemic

TSL 6.3 (a)	To apply 30m exclusion zones on streams within 200m of records of Stuttering Frog	Design requirements not complied with and required areas not protected.	Systemic
TSL 6.3 (b)	To measure exclusion zones for frog from top of bank.	Measured from centre of mapped stream, which can be wrongly mapped or a long way from bank.	Systemic
TSL 6.9(d)	To retain 8 hollow-bearing trees per hectare in areas with high Greater Glider densities to provide prey for owls.	While the requirement to retain additional habitat trees is identified there has been no apparent attempt to apply it. Trees required to be retained were logged at one site,	
TSL 6.9(e)	To maximise large patches of habitat included as owl exclusion areas and exclude long linear strips.	Maps of excluded areas changed to improve targets for owls by including small patches and long linear strips. FMZ3B area also added as an owl exclusion area.	
TSL 6.17 (f)	To retain and mark all Yellow-bellied Glider sap feed trees	Locality of sap feed tree apparently misplaced (to outside compartment) and obvious tree not detected or marked.	Systemic
TSL 6.17(g)i	To retain 15 Yellow-bellied Glider feed trees within 100m of observation records and sap feed trees	No evidence that this has been complied with (except by default), particularly as the known sap-feed tree appears to have been misplaced.	Systemic
TSL 6.17(g)ii	To retain 15 Yellow-bellied Glider feed trees within 200m of call records	No evidence that this has been done anywhere (except by default) and it appears not to have been complied with in at least some areas.	Systemic
TSL 6.17(g)iv	To mark required Yellow-bellied Glider feed trees for retention	Searches of areas where feed trees were required to be retained failed to find a single tree that had been marked,	Systemic
FISHERIES LICENCE			
FL 7	Requires boundaries of exclusion and buffer zones on streams to be marked in the field.	This was done for some mapped and unmapped streams but not others.	Common
FL 7.1(b)	Requires that exclusion zones, buffer zones and special operational zones must be established along watercourses to protect habitat and water quality.	One mapped stream and some unmapped streams did not apply exclusion and buffer zones. Operational zones appear to be infrequently applied.	Failure to identify exclusion and buffer zones rare for mapped streams, occasional to common for unmapped streams. Failure to apply operational zones is systemic.
FL 7.1(c)	Establishes minimum widths for each zone and requires that they be measure from the bank (where it exists).	One mapped stream and some unmapped streams did not apply such zones.	Rare for mapped streams, occasional to common for unmapped streams.

FL 7.4.	Prohibits most forestry activities from exclusion zones, except accidents.	Exclusion zones not established on one mapped stream and some unmapped streams and subjected to severe forestry activities.	Rare for mapped streams, occasional to common for unmapped streams.
FL 7.5	Excludes most forestry activities from buffer zones, except for accidents.	Buffer zones not established on one mapped stream and some unmapped streams subjected to severe forestry activities.	Occasional for mapped streams, occasional to common for unmapped streams
FL 7.8	Requires that machinery use in special protection zones be limited to minimise disturbance	There is apparent disregard for limitations on the use of machinery in protection zones.	Systemic
FL 7.9	Allows for snig tracks in special operational zones though requires reinstatement of ground cover.	There is apparent disregard for the requirement to reinstate ground cover in operational zones.	Systemic
FL 8.4.1.	Requires that crossings must avoid disturbance to stream beds and banks, avoid siltation, and attempt to maintain natural flows	Crossings have caused significant disturbance to stream beds, altered natural flows and are initiating siltation. Heavy sediment loads noted in some creeks.	
FL 8.4.3(b)	Requires reshaping and stabilising crossings when finished	There did not appear to have been any attempt to reshape and stabilise crossings.	
ENVIRONMENT PROTECTION LICENCE			
EPL 6	Requires that filter strips, protection zones and operational zones must be established along watercourses.	One mapped stream and some unmapped streams did not have such zones applied.	Rare for mapped streams, occasional to common for unmapped streams.
EPL 15	Requires that 5m buffer strips be retained along each side of drainage depressions	There is no evidence that these were established anywhere, and they were often trashed.	Systemic
EPL 22	Requires that machinery disturbance within buffer strips be minimised.	Evidence of extensive disturbance and trees being snigged down drainage depressions.	
EPL 30	Requires that debris from log dumps must be located outside filter strips, protection zones and buffer strips.	At one site extensive debris from a log dump, including stumps, were pushed into and over a drainage feature.	
EPL 46	Requires that drainage features must be crossed using stable structures.	Most snig tracks observed were simply bulldozed across drainage features and were not stable structures.	
EPL 50	Requires that crossings must be designed to covey the peak flow from 1:5 year storm event	There did not appear to be any attempt at design, with significant erosion expected in such events.	

EPL 51	Requires that crossings must be designed to withstand the peak flow from 1:10 year storm event	There did not appear to be any attempt at design, with significant erosion expected in such events.	
EPL 53	Requires minimising disturbance	There did not appear to be any attempt to minimise disturbance with large amounts of spoil, along with logs and boulders, deposited in some streams.	
EPL 54	Requires reshaping and stabilising crossings when finished	There did not appear to have been any attempt to reshape and stabilise crossings.	
EPL 56	Requires minimising deposition of spoil	Large amounts of spoil, along with logs and boulders, deposited in some streams	

CONTENTS

1. FOREST MANAGEMENT ZONES

Forest Management Zones are required to be implemented by the North East Forest Agreement (2000) between the NSW and Commonwealth Governments and by the Integrated Forestry Operations Approval, both of which are made pursuant to the NSW *National Park Estate Act* 1998.

Four of these zones are counted as contributing towards the national Comprehensive, Adequate and Representative (CAR) forest reserve system, with the *Special Prescription Zone* 3B being the only one that allows modified logging:

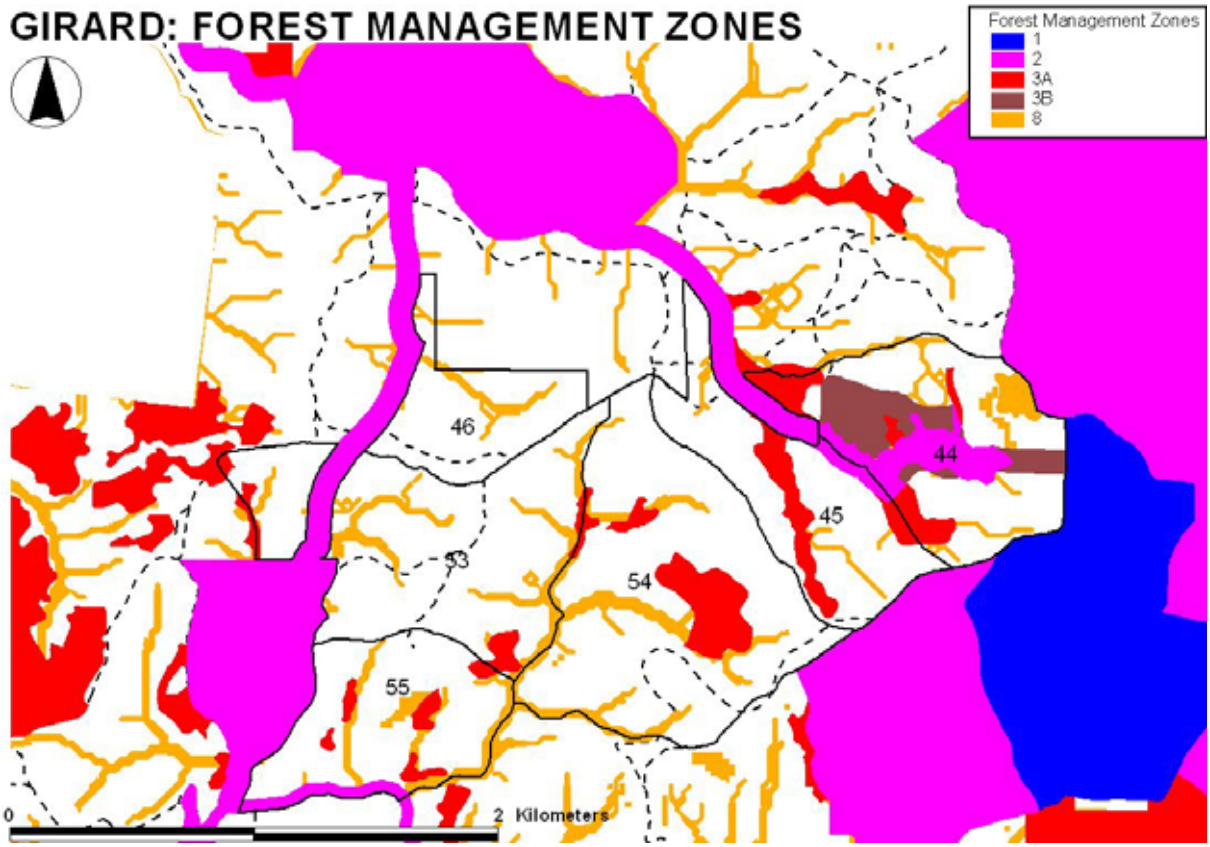
> *Special Protection Zone (FMZ 1)*. These areas are dedicated and managed to maximise the protection of natural and cultural values
>
> *Special Management Zone (FMZ 2)*. These areas are established following public comment and are gazetted and managed for the protection of natural and cultural conservation values where it is not possible or practicable to include them in the Special Protection Zone.
>
> *Harvesting Exclusions Zone (FMZ 3A)*. These are areas where harvesting is excluded but other management and production activities preclude zoning as Special Protection Zone or Special Management Zone.
>
> *Special Prescription Zone (FMZ 3B)*. These areas are established for the protection and management of identified values whilst also allowing other management and production activities.

Forests NSW have identified a breach of FMZ 2 in compartment 45 (see Appendix 5.4, no4) and another of FMZ 3A rainforest in compartment 44 (see Appendix 5.4, no8). This audit has identified two breaches of FMZ3A rainforest in compartment 44 (one which appears to be the one identified by Forests NSW).

The FMZ 3B area was apparently established as part of the Tenterfield Environmental Impact Statement process to protect a 9ha stand of high site quality oldgrowth forest and a riparian wildlife corridor. While sensitive logging is allowed in FMZ 3B, the overarching requirement is to "*maintain or enhance the values that the area is zoned to protect*". Any logging, other than the most selective tree removal, does destroy the oldgrowth values of the stand and thus the principal value this zone was protecting.

The oldgrowth was logged far more intensively than allowed by standard logging prescriptions and thus the oldgrowth ecosystem was structurally removed (not-with-standing the retention of some oldrowth trees) and heavy logging and understorey disturbance severely compromised the functioning of the wildlife corridor link.

FMZ8 is an interim zoning of areas where field investigation is required to determine final Forest Management Zone classification as part of pre harvest planning. Forests NSW showed me maps that indicated that many unmapped drainage lines in this area had indeed been mapped. Despite this a number of drainage lines had been omitted from consideration and had consequently been literally trashed. Even where values were confirmed the areas were not identified for inclusion in the appropriate FMZ zone.



The IFOA 9(1) requires that:

> *In carrying out, or authorising the carrying out of, forestry operations in State forests, SFNSW must give effect to the document entitled, "Forest Management Zoning in State Forests" (State Forests of New South Wales, December 1999).*

1.1. FMZ 3A

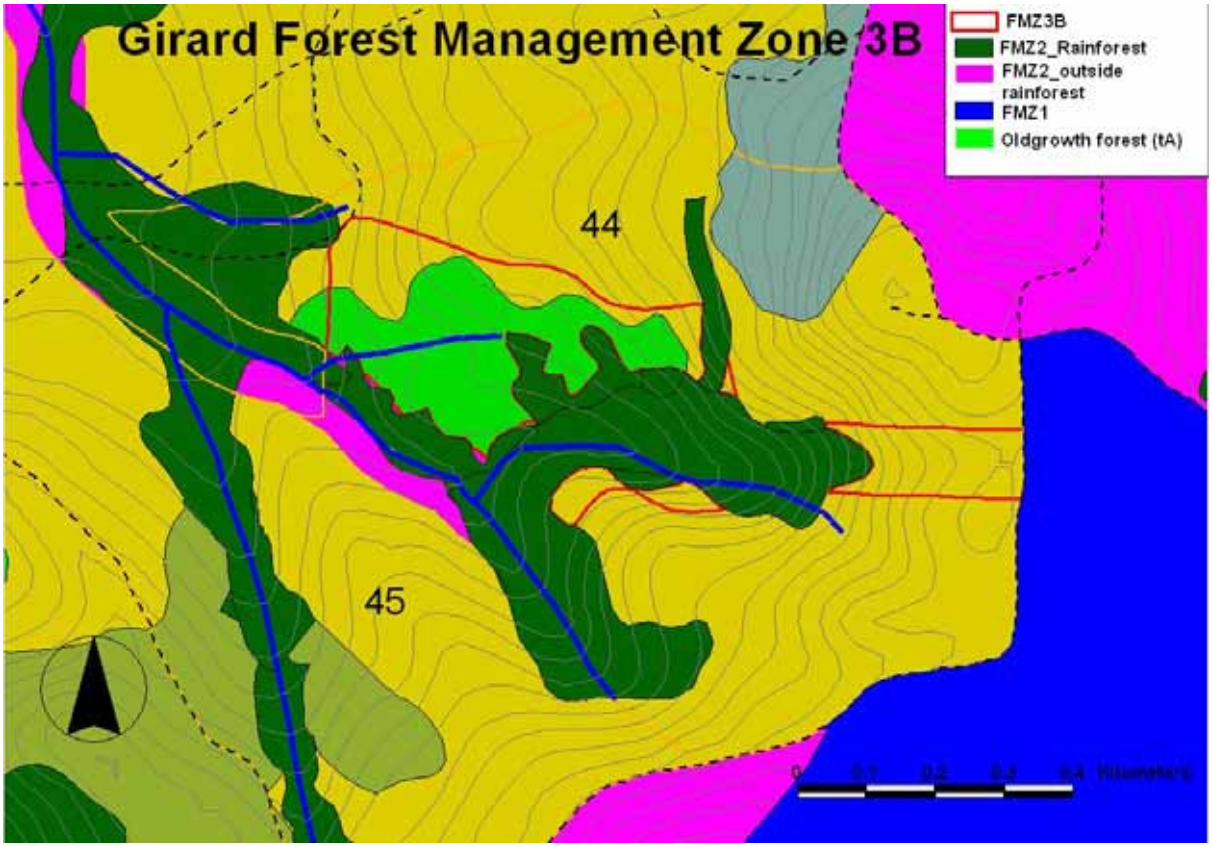
Most of the 3A within the audit area is rainforest, though there is a small area of "New England Stringybark" FMZ 3A in the north west of compartment 53. This is shown on the Harvest Plan Operational Map, though is not identified or described in the Harvesting Plan.

Two breaches of FMZ3A boundaries were identified in Compartment 44 involving the felling of trees into rainforest. Given that most FMZ3A areas here are rainforest this represents a breach of TSL 5.4. (a). At one site the boundary of the rainforest/FMZ3A appears to have been incorrectly marked (approx 431930, 6797370) and at another poor felling seems to be responsible (approx 492000, 6797280). Forests NSW (App. 5.4, no 8) have also identified the former breach.

PHOTOS 1&2: Trees dropped across boundaries of FMZ3A areas adjacent to the FMZ3B area in Compartment 44. Note that in the first photo the boundary of the exclusion area seems to have been incorrectly marked in this locality and this may be why the breach occurred. At the second site poor felling appears to be responsible (note the exclusion markings on the sapling in the centre of the photo).

1.2. FMZ 3B

There are 13 hectares of FMZ 3B in compartment 44 that incorporated most of a 9ha stand of high site quality oldgrowth forest, dominated by trees up to 50m tall with trunks over 2m diameter, and situated adjacent to subtropical rainforest (FMZ2 and 3A). This stand was mapped as oldgrowth forest of the highest quality (tA) in the Comprehensive Regional Assessment. The FMZ3B includes a wildlife corridor linking this stand through to a FMZ1 reserve.



This FMZ3B area is described in the harvesting plan as an "*old educational preserve that is no longer required for this purpose*". The harvesting plan provides no further information on this area other than stating *"Harvesting operations must aim at retaining and protecting the significant trees within the stand ie the largest overmature trees >200cm dbh"*. The Harvest Plan Operational Map identifies "non-aboriginal heritage" values in this area.

The original 1983 Tenterfield Management Plan, the 1995 Tenterfield Management Area EIS and the 1992 Archaeological Survey of Historical Sites Report, Tenterfield Forest Management Area EIS Study, were all reviewed for information on this area, though it was not identified as being of historical or heritage importance.

On the 1995 EIS maps this area is classed as Preferred Management Priority, and appears to be Class 1.1.3 (Special Emphasis Education) and/or 1.1.7 (Special Emphasis Flora and Fauna Protection). PMP classification was the forerunner to the FMZ system. The original PMP classification was initially made by the District Forester. PMP 1.1.3 *"covers areas that have special natural or cultural features, demonstrate forest values or forest practices, or*

promote environmental awareness", while PMP 1.1.7 "*covers areas containing habitats of flora and fauna of special significance and areas reserved for general habitat protection …".*

While the reasons for the selection of this area are not detailed, it is apparent that the intent was to protect a wildlife corridor along the creek for "*fauna of special significance* " and this stand of oldgrowth forest for its "*special natural features"*.

PHOTOS 3&4: Retained trees from the oldgrowth stand. All the largest trees (over 1.4m diameter) were required to be retained to satisfy standardl logging prescriptions, though 40% were logged. Note the debris pushed against the 2.0 m diameter Blue Gum and rainforest exclusion area ready for burning, and the almost complete destruction of the rainforest understorey in the logging area.

The Forestry Commission's 1989 "Forest Preservation in State Forests of New South Wales" gives sizes of "Outstanding Trees Preserved on State Forests". There are no outstanding trees recorded in the Tenterfield area. Record sizes in NSW given for the dominant trees in the FMZ3B area are:

New England Blackbutt : 1.19m
Silvertop Stringybark: 1.6m, 1.63m, 1.63m.
Tallowwood: 1.53m, 2.23m, 2.45m, 2.47m, 2.66m, 2.80m, 2.88m, 2.98m.
Sydney Blue Gum: 2.19m, 2.53m.
Brush Box: 1.82m, 2.18m, 2.50m, 2.53m, 2.55m, 2.66m

Within a part of FMZ 3B this audit recorded Tallowwoods with diameters of 2.06m and 2.48m, a Brush Box with a diameter of 2.44m and a Sydney Blue Gum with a diameter 2.34m. When compared to the record trees identified above, these sizes emphasise the high quality of the oldgrowth stand and its significance at both a state and local scale.

PHOTO 5: with a 2.48 metre diameter this Tallowwood was the largest tree measured in the stand. It is likely to be over a thousand years old. Unfortunately, contrary to licence requirements, large volumes of debris were pushed against its base, creating a funeral pyre waiting for the post-logging burn.

It is apparent that the Harvest Plan limit on logging of trees greater than 2m diameter is a dishonest sham, aimed at doing nothing apart from supporting the cynical claim that "special" prescriptions are being applied. In the audited area there were only 6 trees found that were over 2m in diameter and they were all required to be retained under standard prescriptions. In fact there were a number of trees just under 2m in diameter that were logged. Of the 18 trees (7.8 per ha) 139cm or larger, all were required to be retained to satisfy standard prescriptions (ie 8 hollow-bearing trees per hectare) yet 7 (39%) of them were logged.

It is significant that the Owl Landscape plans include the FMZ3B as an exclusion area counting towards targets for both Powerful and Masked Owls. Prior to logging, this area would have had special significance as large forest owl habitat because of the generally lower quality habitat included in owl landscape exclusion areas elsewhere in Girard State Forest. The results of this survey and previous surveys indicate that this stand of oldgrowth forest was of particular significance for Stuttering Frog, Sooty Owl, Powerful Owl, Golden-tipped Bat, Yellow-bellied Glider, Greater Glider and possibly Koala, Spotted-tailed Quoll and Pugh's Frog.

Within the oldgrowth stand logging did not satisfy the standard requirements for retention of large old habitat and recruitment trees, left inappropriate defective trees to meet prescriptions, piled debris around bases of retained trees ready for burning, excessively cleared the rainforest understorey, trashed a mapped stream and an unmapped one, trashed drainage depressions, and impacted on adjoining rainforest (FMZ3A) exclusion areas. Standard prescriptions required for all native forests throughout the region were not applied, let alone any "special" prescriptions. See section 2 for the outcome of a detailed audit of this area.

In the 1999 Forests NSW document "Managing our Forests Sustainably: Forest Management Zoning in NSW State Forests" 'FMZ 3B Special Prescription' is described as:

> *Areas where other management and production activities are also facilitated. These activities (which in some cases may include timber, forest product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect.*
>
> *Areas within this zone are designed to meet the requirements of JANIS "Values Protected by Prescription" in the National Forest Policy Statement. They are designated for both protection of the values contributing to the CAR reserve system and for other management activity including timber production under certain prescribed conditions.*
>
> *MANAGEMENT GUIDELINES FOR ZONE 3 SPECIAL PRESCRIPTION*
>
> - *The priority is to protect and manage identified conservation values whilst allowing other management and production activities, modified where required, which enhance or maintain those values.*
> - *The zone contributes to timber production, other forest product or materials extraction and/or other management objectives, only where identified conservation values can be satisfactorily protected.*
> - *Each individual Zone 3 area will have prescribed 'activities not permitted', and 'special conditions' which must be implemented to facilitate certain activities. These activities and conditions for each Zone 3 area will be approved by the Regional Manager and then be included in State Forests' Geographic Information System (GIS) data base.*
>
> *The Regional Manager is authorised to determine activities not permitted and to approve appropriate special conditions.*

For Zone 3B "*timber and other forest product extraction*" are identified as activities "*that need particular consideration to be permitted with special conditions*".

The logging undertaken with the FMZ3B area was contrary to "Forest Management Zoning in NSW State Forests" and thus contravenes the IFOA in that Forests NSW:

- misidentified the values of the area;
- did not identify or protect the values contributing to the CAR reserve system;
- did not design and implement the logging operation to maintain or enhance the values that the area is zoned to protect;
- did not Include any meaningful special prescriptions; and
- did not document special conditions in State Forests' Geographic Information System (GIS) data base.

The North East Forest Agreement (2000) between the NSW and Commonwealth Governments states:

- Special Prescription Zone (FMZ 3B). *These areas are established for the protection and management of identified conservation values, whilst also allowing other management and production activities. These activities (which in some cases includes timber, Forest Product and materials extraction) are minimised in their design and implementation to maintain or enhance the values that the area is zoned to protect. A case by case assessment of these areas will be undertaken to determine which forestry activities can occur. The decision is dependent on the specific values involved.*

The CAR Reserve System on Public Land has the following three components:

- *Dedicated Reserves*. ...
- *Informal Reserves*. ...
- *Values protected by Prescription. These comprise those elements of habitat protected by Regional Prescriptions as detailed in the Integrated Forestry Operations Approval covering the Upper North East region and areas within the Harvesting Exclusions and* ***Special Prescription Zone*** *under the Forest Management Zoning system that, due to the size or shape, do not meet the Informal Reserve category outlined above. The Integrated Forestry Operations Approval complements the Dedicated and Informal Reserve network and includes additional levels of protection for rare non-commercial forest types, Old Growth forest, rainforest and threatened species in all areas that have been identified to be primarily managed for sustainable production*

The logging of the FMZ3B area contravenes the North East Forest Agreement (2000) in that the logging operation did not identify, maintain or enhance the values that the area was apparently zoned to protect.

PHOTO 6: An area of excessive tree removal adjoining the FMZ3A exclusion area.

PHOTO 7: Logging in the wildlife corridor section of the FMZ3B area. A drainage depression has been trashed to right of photo.

PHOTO 8: Measuring a Brush Box tree just under 2m in diameter illegally felled in the buffer of a trashed mapped drainage line within the FMZ3B area.

As well as excessive tree removal the damage to the understorey and soils was also excessive, with retention of the rainforest understorey well below that required to satisfy TSL requirements (5.17(a)) for ground habitat protection:

> *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.*

Rather than minimising damage to the understorey, Forests NSW maximised it and are proud of the result.

1.3. FMZ 8

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

In the 1999 Forests NSW document “Managing our forests Sustainably: Forest Management Zoning in NSW State Forests” FMZ 8 is described as:

> *An interim zoning of areas where field investigation is required to determine final Forest Management Zone classification. Field investigation will be undertaken as part of pre harvest planning.*

These areas require field validation before allocation to a specific Forest Management Zone and are:

...

ii Areas of modelled GIS data where field verification is required to accurately map the features.

The correct information will be mapped onto the harvesting plan ...

Management will be for protection under the same requirements as FMZ 3A until field investigation allows determination of final FMZ classification.

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

The Harvesting Plan identifies FMZ8 areas as requiring "further assessment" stating:

Modelled IHC 4 areas, mapped drainage features, modelled drainage lines requiring further assessment: Further assessment of the modelled streams is to be undertaken by the SFO. Appropriate prescriptions are to be applied and noted on the harvesting operational map" .

Forests NSW showed me maps where the location of a number of unmapped drainage lines had been identified as drainage lines. Field inspections verified that a number had been identified and delineated in the field. Other unmapped drainage lines were found that had not been identified on maps and had not been identified in the field (see section 4 of this report), and some appeared to have been identified on maps but not in the field. This is a significant improvement on what was found at Yabbra.

Not-with-standing this there does not appear to have been any attempt to reallocate any FMZ 8 areas, even when found to be drainage lines, to the appropriate FMZ category. It is assumed that Forests NSW do not do this as they do not want to remove these areas from the net harvest area (where they escape logging they use them to meet tree retention targets). This is contrary to the document "Forest Management Zoning in NSW State Forests" and thus is contrary to IFOA condition 9(1).

2. MARKING UP

Two sites were chosen for detailed post-logging audits. Both sites were chosen from maps based upon their identified conservation values and on the understanding that they required higher rates of tree retention than the general logging area. Theoretically these areas should be exemplary areas.

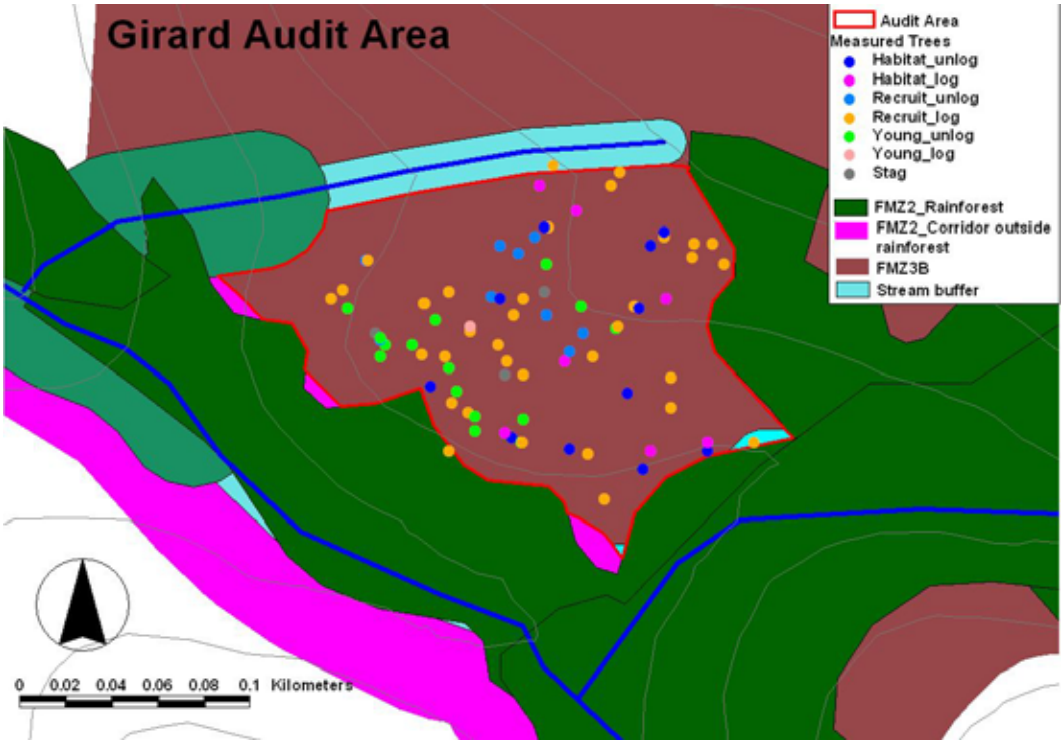
At the first site every tree, including stumps from felled trees, over 20cm diameter was recorded. This was used to obtain a comprehensive audit of tree retention. It turned out to be an area where there had been an attempt to fully implement tree and exclusion marking requirements.

At the second site all marked trees were recorded and thorough searches were made for marked exclusion boundaries. It turned out that tree marking was highly deficient and there was no marking of exclusion boundaries.

In the process of undertaking general assessments and auditing these areas numerous other breaches were identified, though only some of these are documented herein.

2.1. AUDIT AREA 1

A detailed audit was undertaken of 2.3ha of a logged stand of oldgrowth forest within the FMZ 3B area in compartment 44. This area was selected before inspection on the basis that it was mapped as oldgrowth forest (tA) by Aerial Photo Interpretation (API) in the Comprehensive Regional Assessment (CRA) and was within the FMZ3B area. It was expected to represent the highest level of hollow-bearing tree retention that could be expected across the logging area, which also appeared to be the case.



Note: 2 logged trees appear to be located in exclusion areas, though for the purpose of this aspect of the audit were counted as being within the audit area.

All eucalypt and brush box trees and stumps over 20cm dbh outside marked exclusion zones were measured, with diameters measured (at breast height for standing trees and across tops of stumps for logged trees). Some rainforest trees occurred around the margins of the area, though the rainforest understorey which would have existed had mostly been bulldozed away. Estimates were also made of crown development (poor, moderate, good), butt damage (% circumference), growth stage (young, mature, late mature, senescent), suppression (Y/N), and whether significant debris (unflattened) was left within 5m of base of tree. All FNSW tree markings were recorded.

For reporting trees were grouped into classes based upon diameters, so as to obtain the best fit for growth stages based on observations of retained trees. This then enabled extrapolation of stumps to growth stages. It is recognised that stumps were mostly cut below chest height and so diameters are overstated when compared to trees measured at chest height, though this is not expected to have resulted in a significant bias for these purposes, particularly as some stumps are likely to have been missed due to being buried under the piles of debris (ie the numbers and basal areas of trees removed is likely to be understated).

TABLE 1. OUTCOME OF AUDIT OF 2.3HA of LOGGED OLDGROWTH FOREST IN CMPT 44.

Diameter (cm)	Growth Stage	Retained	Logged	Marked habitat	Marked recruit	Suppress	Significant Debris
139-248	Late mature to senescent	11	7	11	0	2	7
55-138	Mature to late mature	9	35	2	6	5	6
25-54	young	15	1	0	4	9	12
Stags		3	0	-	-	-	3
Basal Area		42.1 m^2	44.6 m^2				

The findings were:

1) Of the 78 live trees and recent stumps counted,
    i) 37 (47%) are/were Blue Gums, 15 (19%) are/were Tallowwood, and 26 (33%) are/were Brush Box
    ii) The original basal area is estimated to be 86.8 m^2 and the residual basal area is 42.1 m^2 (49%), meaning 51% was removed.

2) Of the 35 trees retained
    i) 13 are Blue Gums, 9 are Tallowwood, and 13 are Brush Box
    ii) 11 (4.8 per ha) of the 18 largest trees (late mature/senescent) were retained and 9 (3.9 per ha) of the 44 next largest (mature/late mature) were retained.
    iii) 25 have significant amounts of debris within 5m of bases
    iv) 16 were classed as suppressed

3) Of the 13 marked Habitat trees (note that one marked and subsequently crossed out was omitted):
    i) 6 are Blue Gums, 5 are Tallowwood, and 1 is Brush Box,
    ii) 8 have significant amounts of debris within 5m of bases, and
    iii) 2 were classed as suppressed

4) Of the 10 marked Recruitment trees
    i) 5 are Blue Gums, 1 is tallowwood, and 4 are Brush Box
    ii) 4 were under 55cm dbh and classed as “young”,
    iii) 7 had significant amounts of debris within 5m of bases,
    iv) 7 were classed as suppressed, and
    v) 1 had significant butt damage (60% of circumference).

Because the density of Greater Gliders in this area exceeds 1 per hectare the TSL owl prescription (6.9d) requires the retention of 8 hollow-bearing (habitat) trees per hectare of the net logging area and the general recruitment tree prescription requires the retention of 10 mature/late mature recruitment trees per 2 hectares. Across the 2.3ha this gives a retention requirement of 30 habitat and recruitment trees. It is evident that sufficient habitat and recruitment habitat trees were not marked or inadvertently retained to meet requirements, and that many of those marked did not satisfy the criteria.

Based on this audit (Table 2) 11 large (over 139cm diameter) likely hollow-bearing trees (late mature/senescent) were retained, compared to the 19 required to be retained to satisfy standard owl prescriptions. Based on this audit (Table 2) only 9 recruitment trees (mature/late mature) were retained compared to the 12 recruitment trees required to be retained to satisfy tree retention prescriptions.

Only 67% of the trees required for retention were retained.

Four of the trees marked as recruitments do not satisfy the criteria of being mature/late-mature.

TABLE 2. OUTCOME OF AUDIT OF TREE RETENTION REQUIREMENTS, Note that condition 6.9 effectively requires the retention of an additional 3 hollow-bearing trees per ha. FIGURES NOT ADDITIVE.

TSL	Requirement	Requirements for whole audit area	Retained (based on this audit)	Marked
5.6a	10 hollow-bearing trees per 2 ha (largest dbh)	11.5	11	13 (includes mature trees)
5.6b	10 recruitment trees per 2 ha (mature, late mature)	11.5	9	10 (includes undersized trees)
6.9d	8 hollow-bearing trees per ha	18.4	11	13 (includes mature trees)
	TOTALS	**29.9**	**20**	**23**

TSL condition 5.6(a)(iii) requires:

> Retained hollow-bearing trees must represent the range of hollow-bearing species that occur in the area. Preference should be given to selecting those species or trees which are most suitable for the threatened species known or likely to occur in the area.

And TSL condition 5.6(b)(iii) requires:

> Retained recruitment trees must represent the range of species in the mature and late mature growth stages that occur in the area. Preference should be given to selecting those species or trees which are most suitable for the threatened species known or likely to occur in the area

Table 3 shows that overall, fewer Blue Gums have been retained than required and that more Tallowwoods have been retained than required. The discrepancies between original distribution and trees marked for retention is even greater. It is evident that in marking trees Forests NSW had no regard for retention of the required species composition.

It is most revealing that Forests NSW marked for retention 1 Brush Box as a habitat tree and 4 Brush Box as recruitment trees. It was also noted that in the lower elevations of compartment 45 large numbers of Brush Box had been marked to meet tree retention requirements. This displays a fundamental dishonesty on behalf of Forests NSW, as in the regrowth zone (ie compartments 162 and 163 Yabbra SF) they do not retain any large old Brush Box as habitat or recruitment trees, claiming that they do not develop hollows and thus don't need to be retained. If the rules they apply to Brush Box in the regrowth zone were applied here, then total habitat tree retention would drop down to 9 trees (3.9 per ha) and recruitment trees would drop down to 4 (1.7 per ha).

Forests NSW can not have it both ways and DECCW must develop a policy for dealing with Brush Box.

TABLE 3. OUTCOME OF AUDIT OF SPECIES MIX.

Species	Original no.	Original %	Retained %	Marked Habitat %	Marked recruit%
Blue Gum	37	47	37	46	50
Brush Box	26	33	37	8	40
Tallowwood	15	19	26	39	10

The Threatened Species Licence 5.6 (g)ii states:

> *In the course of conducting specified forestry activities, logging debris must not, to the greatest extent practicable, be allowed to accumulate within five metres of a retained hollow bearing tree, recruitment tree, stag, …. Logging debris within a five metres radius of retained trees must be removed or flattened to a height of less than one metre. Disturbance to ground and understorey must be minimised to the greatest extent practicable within this five metres radius.*

In the 9ha audit area, 25 of the total of 35 trees retained have significant amounts of debris within 5m of bases. Of the 13 marked habitat trees 8 have significant debris around bases. Of the 10 marked recruitment trees, 7 had significant amounts of debris within 5m of bases. Of the 3 stags all had significant amounts of debris within 5m of bases. The single tree marked to be retained for timber production (as a "grower") had its base damaged in the logging and had large volumes of debris stacked around it. In most cases large volumes of debris have been stacked around and against retained trees. Those trees that did not have significant debris mostly had significant ground and understorey disturbance.

Logging of this area was supposed to be undertaken using Single Tree Selection, which means that no more than 40% of the basal area of trees 20cm or more may be removed.

The Harvesting Plan goes so far as to identify the expected basal area removal as 35% of the net harvest area. Within the audit area some 51% of the basal area was removed, and this appeared to have occurred in many other areas of these forests.

The Integrated Forestry Operations Approval "5. Description of forestry operations to which this approval applies", 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 definition is: "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.*

While it is often argued that the 40% removal can be averaged over the net logging area, the reality is that this is most often used as a smokescreen to allow maximum utilisation logging. The second area audited also appeared to have more than 40% of the basal area removed, though this was not quantified. This was certainly the case in compartment 163 of Yabbra State Forest, where it is obvious that the required basal area was not retained though no attempt was made to accurately quantify the actual retention.

In this case the audit area was of part of a stand of oldgrowth forest, within a special prescription FMZ3B area where *"Harvesting operations must aim at retaining and protecting the significant trees within the stand ie the largest overmature trees >200cm dbh"*. There can be no excuse for not ensuring that less than 40% of the basal area was removed.

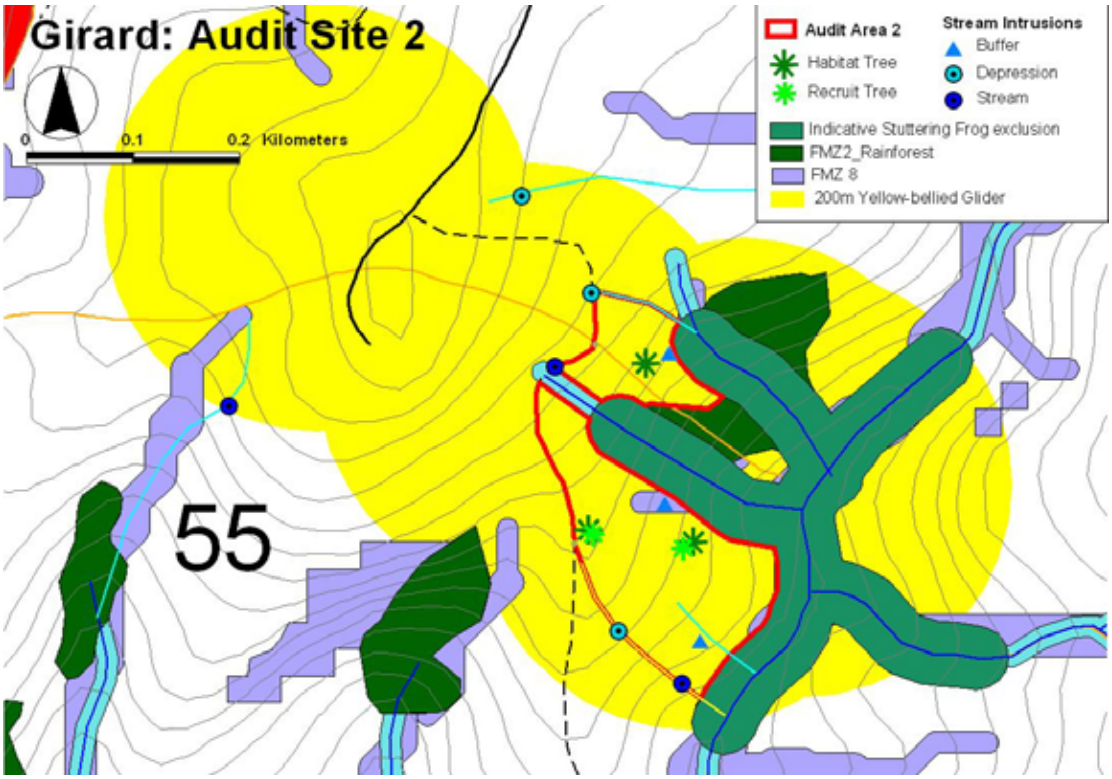
2.2. AUDIT AREA 2

An audit of tree and exclusion area marking was undertaken within 3.7 ha of the net logging area in the vicinity of the boundary of Compartments 53 and 55. This area was similarly chosen before inspection based on the presence of the exclusion area for Stuttering Frog and the requirement for application of the Yellow-bellied Glider prescription. Given the identified values of the area it was reasonable to expect a higher level of care than normal, though this was not found to be the case.

This audit was principally aimed at assessing marking up, though it was considered that habitat tree (including unmarked trees), recruitment tree (including unmarked trees), Yellow-bellied Glider feed tree retention (including the unmarked trees), and basal area retention were well below requirements. Habitat and Recruitment trees particularly so.

Across the 3.7 ha area there were only three habitat trees and two recruitment trees marked for retention (see Appendix 5.2). This is a marking rate of one habitat tree per 1.2ha and one recruitment tree per 1.4ha. This is obviously grossly deficient (as noted above, retention rates of unmarked trees were higher, though remained obviously deficient).

Of the three marked habitat trees one had 55% of its butt with significant damage, two had moderate amounts of debris left around them and one had large amounts of debris piled against its base (see Appendix 5.2). Of the two marked recruitment trees one had significant butt damage (40%), one was suppressed and both had large amounts of debris stacked against their bases (see Appendix 5.2).



The TSL (6.17) requires that

> *ii Within a 200 metres radius of a Yellow-bellied Glider call detection site record, 15 feed trees must be retained. 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.*
>
> *...*
>
> *iv. The feed trees retained in condition 6.17 (g) (i) and (ii) must be marked for retention.*

The audit area is situated within 200m of 4 Yellow-bellied Glider observation records. Across the 3.7 ha audit area, and the adjoining modified harvesting areas for Yellow-bellied Gliders, not a single tree was observed to be marked as a feed tree. In this area mature to late mature Blue Gums are the principal species required to be retained to satisfy prescriptions, though retention of these trees was inadequate and trees required to be retained were logged.

PHOTO 9: Marked habitat tree in Compartment 53, note the significant damage.

The audit area incorporates exclusion buffers to mapped and unmapped drainage lines and to potential Stuttering Frog habitat.

In the case of the Stuttering Frog a 30m exclusion buffer is required to be applied to all streams within 200m of the record. Rather than being applied from the centreline of mapped streams (as is done in harvesting plans and on the above map) it needs to be measured and marked from the stream bank to satisfy the TSL condition 6.3 (b):

> *The width of exclusion zones must be measured from the top of the bank of the incised channel or, where there is no defined bank, from the edge of the channel.*

Forests NSW failed to mark the boundary of the exclusion zone on the ground in contravention of TSL 5.1 (f), though for one site it is claimed that that this was because of the dense understorey. Because Forests NSW instead relied upon their GPS and applied the exclusion zone to the centre of streams irrespective of whether there was a defined bank they did not satisfy 6.3(a) or 6.3(b), in one area the stream was also incorrectly mapped. (Appendix 5.4, no10).

Forestry operations are prohibited in exclusion zones (5.1 (a) i), except where trees are accidentally felled into them or where machinery needs access to fell a tree outside the zone. Two localities were identified where forestry activities extended up to the banks of streams within what were meant to be Stuttering Frog exclusion zones (GDA 430280, 6796453 and 430276, 6796312). The latter of these corresponds with the 3 breaches identified by Forests NSW (Appendix 5.4. no.10). See above map and photos below.

PHOTOS 10&11: 2 incursions into 30m exclusion zone required to be implemented for Stuttering Frog. Note the person standing on the edge of the bank in both photos from which the buffer is meant to be applied. In the photo to the left large numbers of trees have been deliberately felled into the exclusion. In the photo on the right debris (at base of vines) was pushed into the exclusion area. No attempt had been made to mark the boundary of the exclusion zones.

2.3. OTHER TREE MARK UP ISSUES

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Inappropriate trees were found to be marked for retention. One (in the Special Prescription Area) had no hollow, was incapable of developing them and had debris stacked so as to ensure it burnt down in the post-logging burn (photo 12). Many retained trees have

significant butt damage (ie photos 14 and 15) and many others have debris stacked around them (ie photos 16, 17 and 18). The retention of trees with butt damage and the stacking of debris around them ensures that their lifespans will be reduced, which often appears to be the intent.

Poor retention and loss of habitat trees in post logging burns is a frequent problem. This is why the TSL specifies that retained trees should have "*minimal butt damage*" and that "*logging debris must not, to the greatest extent practicable, be allowed to accumulate within five metres*" of a tree required to be retained. While Girard has not yet been subject to a post-logging burn, at Yabbra numerous large old trees were burnt to the ground in the post-logging burn.

PHOTOS 12&13: Tree retained as habitat tree in wildlife corridor section of FMZ3B zone, aside from being half dead the tree had no hollows and is now incapable of forming them (GDA 432641, 6797203). Note the debris stacked against base ready for burning and the extensive damage to the wildlife corridor behind.

PHOTOS 14&15 Trees retained (outside audit area) in FMZ3B zone, note the significant butt damage.

PHOTOS 16, 17 &18:Other examples of Habitat and recruit trees with debris stacked against bases (GDA 431007_6797482, 430993_6797485, 431017_6797358)

At places in compartments 44 and 45 habitat and recruitment trees are marked within filter strips along unmapped drainage lines. In some cases the same tree is both marked as a recruitment tree and the boundary of the exclusion area. Forests NSW maintain that even when exclusion zones are applied to unmapped drainage lines they remain part of the net harvest area (this may be why they refuse to allocate FMZ8 to the appropriate exclusion

zone). Forests NSW therefore use trees in these areas to meet habitat tree requirements, which can be contrary to requirements to retain habitat trees scattered throughout the logging area.

PHOTO 19: Trees marked as habitat and recruitment trees within marked filter strip on bank of unmapped drainage line in Compartment 45, these were 2 of 9 trees marked within close proximity (GDA 431183, 6797494).

3. SPECIES REQUIREMENTS

Within these compartments there were documented records of 11 threatened species: Stuttering Frog, Glossy –Black-Cockatoo, Powerful Owl, Sooty Owl, Wompoo Fruit-dove, Painted Honeyeater, Golden-tipped Bat, Greater Broad-nosed Bat, Eastern Bentwing-bat, Rufous Bettong and Yellow-bellied Glider. This audit also recorded the Koala.
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A review of the Harvesting Plan, Harvest Plan Operational Map and Threatened Species Pre-logging and Pre-roading Survey Report for Compartments 44-46 and 53-55 reveal a large number of discrepancies in species records, most significantly with many species mapped within or adjacent to the compartments failing to be documented or duly considered in the Harvesting Plan or Threatened Species Survey Report

1. The Spotted-tailed Quoll is listed in the Harvesting Plan as being in close proximity but is not shown on the harvesting map or shown in the Threatened Species Survey Report.
2. The Koala, Eastern Bent-winged Bat, Greater Broad-nosed Bat, Sooty Owl, and Painted Honeyeater are shown as being within the compartments on maps but not in the Threatened Species Survey Report or in the Harvesting Plan.
3. The Wompoo Fruit-dDove is shown as being within the compartments on maps but is not mentioned in the Harvesting Plan.
4. The Square-tailed Kite, Little Bentwing-bat and Eastern False Pipistrelle are shown on maps as being in close proximity in adjacent compartments but are not mentioned in the Threatened Species Survey Report or in the Harvesting Plan.
5. The 1992 Fauna Report prepared for the Tenterfield MA EIS documents records of Pugh's Frog and the Glandular Frog in the vicinity of the compartments but these records have not been cited in any of the pre-logging documentation.
6. Other threatened fauna species likely to occur in the area such as Stephen's Banded Snake, Eastern Pygmy-possum, Long-nosed Potoroo and Parma Wallaby have also been omitted from consideration.

New England Stringybark Protection is shown on the Harvest Plan Operational Map and yet this rare non-commercial forest type is not referred to in the Harvesting Plan or identified as being a component of the 3A zoning in Table 10.

The Threatened Species Licence (3a) requires that *"SFNSW must prepare planning documentation that demonstrates that operational planning has taken account of the requirements of the conditions of this licence ..."* and that (3b) "*The Harvesting or Operational Plan must state which Species-specific conditions will be applied in the area of operations."* The failure to show the location of the Quoll limits the ability to search for dens, the failure to consider the Koala means that it was not targeted in surveys and "mark up", the failure to consider the location of the apparent observation record of the Yellow-bellied Glider in the Threatened Species Survey Report or Harvesting Plan makes it less likely the required prescription would be implemented, and the failure to consider the Eastern False Pipistrelle and Greater Broad-nosed Bat apparently resulted in the Threatened Species Survey report claiming that suitable micro-bat roosts were not found. The failure to consider New England Stringybark in the Harvesting Plan makes it less likely the required prescription would be implemented. These are examples of breaches of Threatened Species Licence clauses 3a and 3b.

The TSL (5.2.1 (a)) requires that :

> *An adequately trained person must conduct a thorough search for, record and appropriately mark the following threatened and protected species features during or before the marking-up of a compartment.*

The licence goes on to identify a variety of features, relevantly including nests of Powerful, Sooty and Masked Owls, Spotted-tailed Quoll dens, Koala scats, Glossy Black-Cockatoo feed trees, Yellow-bellied Glider sap feed trees and dens, and habitat of Pugh's Mountain Frog.

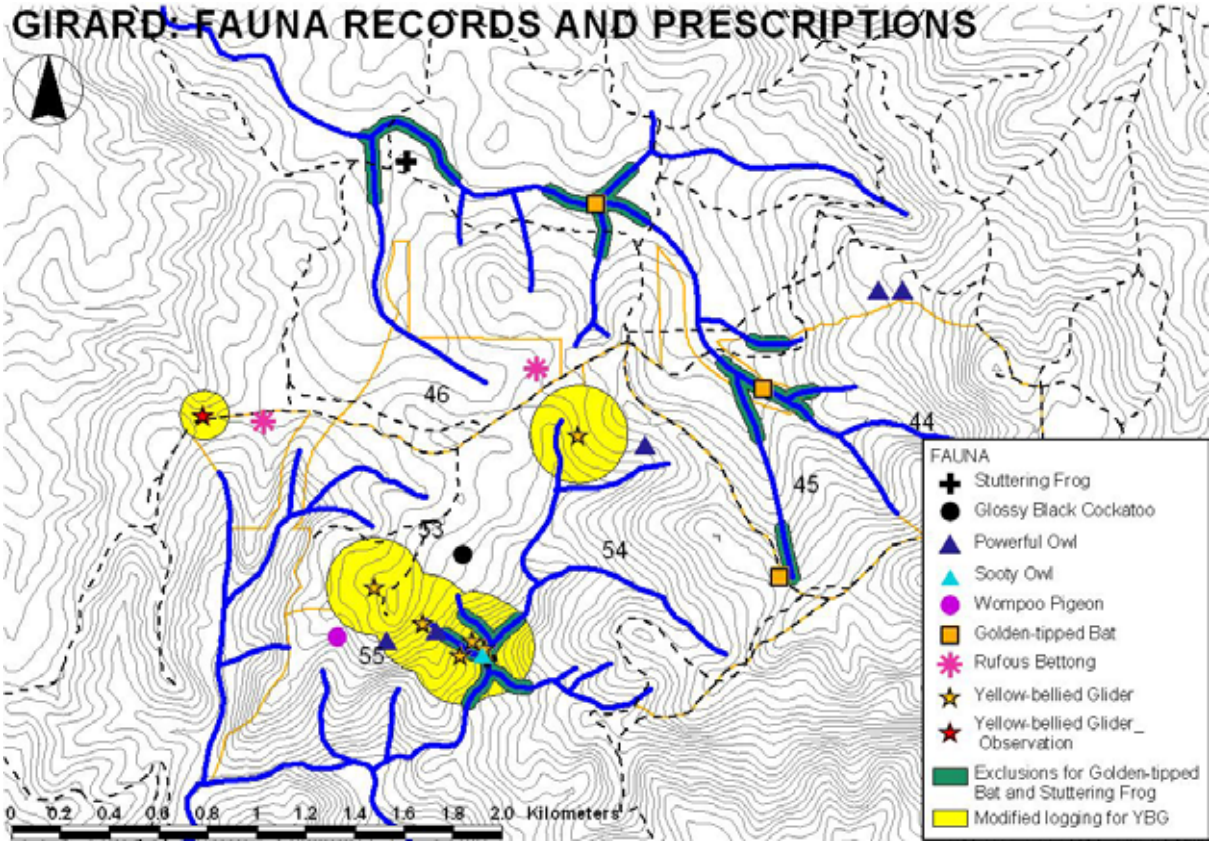
The fact that Forests NSW did not find any such features in these compartments does not mean that they do not occur, as it is more than likely that they all do. There can be no doubt that multiple Yellow-bellied Glider dens occur in the area, that the Koalas are not constipated and do leave scats, that there is more than one owl nest, that micro-bat root trees are present and that Glossy Black-cockatoos have favourite feed trees scattered about. The problem is that they are not being found. They question is whether an adequately trained person is doing the required searches.

At Yabbra it was proven that Yellow-bellied Glider sap-feed trees were not being found (even where common), and at Doubleduke it was found that logging was taking place in advance of marking-up.

In Girard the evidence from the Audit 2 area (see section 2.2) is that, in some areas, no marking in advance of logging operations occurred at all. The failure by Forests NSW to mark habitat and recruitment trees far from roads and tracks in many areas supports the view that in areas there is no pre-logging mark-up survey being undertaken. This view is further corroborated by the failure of Forests NSW to identify or mark a single Yellow-bellied Glider feed tree (see section 3.2), here and in Yabbra and Doubleduke.

The evidence is that Forests NSW are not adequately complying with TSL 5.2.1 (a).

Observations of threatened and significant fauna made during the course of this survey are documented in Appendix 5.1 and have been reported to Forests NSW.



3.1. KOALA

The omission of the Koala from consideration in the Threatened Species Survey Report and Harvesting Plan is particularly significant as the Harvest Plan Operational Map shows a Koala record in the adjacent compartment less than a kilometre away and the "Koala Fire Trail" is within the harvestable area of Compartment 46. This should have been enough to make the Koala a target species for particular attention. Yet the Koala is not identified as having been recorded or as requiring surveys in the Threatened Species Survey Report. It is similarly ignored in the Harvesting Plan.

Outside rainforest, all the forest types within these compartments are identified in the TSL as either having primary browse trees for Koalas as dominant species (Types 47, 60, 62 and 163) or secondary species (Types 46, 53, 93, 122 and 167). The TSL (5.2.2 a) requires that in compartments which contain preferred forest types marking up must be conducted at least 300 metres in advance of harvesting operations, with an adequately trained person thoroughly searching for Koala scats around the bases of feed trees at ten metre intervals (5.2.2 (b)). A Koala "Star" search is required where Koalas are sighted or a significant number of Koala scats are found (TSL 5.2.2 (c))

During this audit a mother Koala with a baby on its back was located in compartment 55 on the edge of a heavily logged area. Not only do they occur here they also breed. As noted above, the evidence is that Forests NSW are not adequately implementing pre-logging mark-up surveys. Their failure to find any Koala scats or other evidence of Koalas before logging the area where the Koala was found in compartment 55 adds to this evidence.

3.2. YELLOW-BELLIED GLIDER

A Yellow-bellied Glider record with a 100m feed tree retention zone is shown in compartment 48, with its 100m buffer extending into compartment 53, but it is not referenced in the Harvesting Plan or Threatened Species Survey Report. This record is apparently for either an observation record or a sap feed tree. The failure to duly consider this record is a failure to comply with TSL 3(a) and 3(b).

A brief inspection of the area revealed an old Yellow-bellied Glider sap feed tree adjacent to the road in Compartment 53 (GDA 429274, 6797252). This was readily observable and should have been picked up in even a cursory inspection. It appears likely that the locality marked across the road was misplaced and that this tree was the one intended to be referenced. This tree was not marked for retention in accordance with TSL 6.17(f).

PHOTO 20: Old Yellow-bellied Glider sap feed tree Compartment 53

A search in the vicinity of this sap feed tree and the area representing the combination of 200m modified logging buffers around the cluster of 5 observation records in compartment 55 were searched for trees marked as Yellow-bellied Glider feed trees. In contravention of TSL 6.17(g)iv not a single tree was found to be marked for this purpose and marking for habitat and recruitment trees was found to be deficient. It appeared that the required numbers of feed trees were not retained in these areas, particularly as compliance with the prescription would have precluded removal of Blue Gums throughout much of these areas. It appears that TSL6.17 (g) was not complied with in any part.

During spotlighting a Yellow-bellied Glider was heard calling on the boundary of compartments 44 and 45, from the vicinity of the FMZ3B area. No Yellow-bellied Gliders were recorded in this vicinity in the pre-logging survey and so the appropriate prescription was not applied (although prescriptions are not being applied in any case).

3.3. OWLS

Powerful, Masked and Barking Owls have been dealt with according to the "Landscape Approach" specified in condition 6.9 of the TSL Licence which requires retention (and exclusion from logging) of set percentages of modelled habitat over broad areas.

The Girard Planning Unit (14) encompasses 11, 778 ha of Girard State Forest (basically south of Bruxner Highway) and the 889ha Demon Nature Reserve. The Licence requires that 25% of this area, or 3167ha be reserved for owls. Within this Planning Area the Powerful Owl appears to be adequately reserved within exclusion areas.

The Barking Owl has only 48 ha of modelled habitat which is required to all be reserved. The Barking Owl modelled habitat is along Slaty Creek and is within exclusion zones, though these do not satisfy the licence requirements (regarding size and shape) and only 22ha can be protected within the Licence constraints (though nothing can be done about this). However the revised version of owl landscapes provided by Forests NSW includes these areas (see below).

There is 2,730ha of modelled Masked Owl Habitat within the planning area and, because none is in the existing reserve, 1,425ha is required to be retained on State Forest by the licence.

One significant restriction specified in the licence (6.9. e) is:

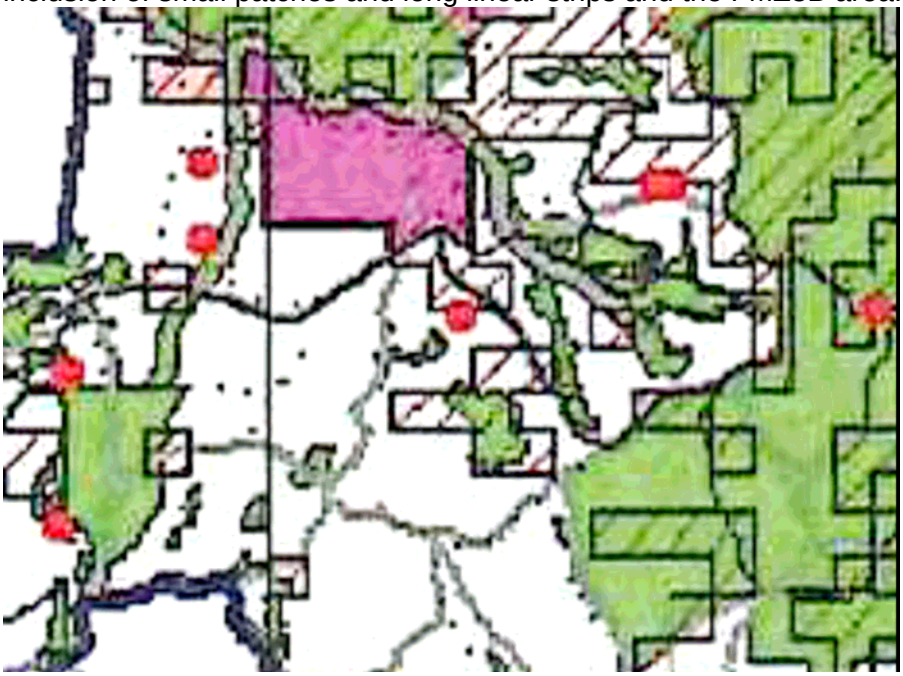
> *Of the areas to be retained in SFNSW estate outside of statutory reserves, referred to condition 6.9.2 (d) above, a minimum of 30% must be retained in patches at least 50 hectares in size. The shape of exclusion zones should minimise the boundary to area ratio. Long, linear strips must not be counted towards meeting the requirement to retain these patches.*

In response to my request Forests NSW provided me with the map "Final Owl Landscape, Planning Unit 14 (Girard)" which included area calculations and appeared to limit area calculations to larger patches and definitely excluded long linear strips. These area calculations identified that for the Masked Owl there was a stated total shortfall in habitat retention requirements of 138ha.

Subsequent to my further enquiries regarding the FMZ3B area I was sent a revised map "Owl Landscapes, Planning Unit 14" which showed 25ha more habitat being reserved than what is required to satisfy the Masked Owl target. From the map provided this target increase appears to have been achieved by including numerous small exclusion areas and long linear strips in contravention of TSL condition 6.9. e. What is most significant is that it includes the FMZ3B as counting towards targets for both Powerful and Masked Owls, despite this area not being shown as contributing on the earlier map.

EXTRACT FROM FORESTS NSW "OWL LANDSCAPES, PLANNING UNIT 14" (Apparently dated 2003) Green, purple and pink areas apparently contribute to Owl Landscape targets – note the

inclusion of small patches and long linear strips and the FMZ3B area. Red dots are owl records.



BURNT AT THE STAKE 1

4. STREAM PROTECTION

The treatment of streams within the area is of particular concern. It is appreciated that attempts have been made to exclude logging from the buffers of most mapped and unmapped streams, though trees are still regularly dropped into them. Forests NSW have made 6 breach reports for the felling and bulldozing of trees into riparian areas (App 5.4) and this audit revealed an additional one (TDF 5, App 5.3).

The principal problem is that one mapped stream and a number of unmapped streams and drainage depressions have been trashed in a most careless fashion. Compounding this problem is the disregard for minimising disturbances when constructing stream crossings and the failure to rehabilitate such crossings when logging is finished.

This refusal to obtain Environmental Protection Licences is now common practice in the Upper North East forestry region, occurring in over 90% of compartments. It appears Forests NSW refuse to obtain licences in most cases because it stops independent regulation and allows them to regulate (or not) themselves. Despite this deliberate avoidance of legal accountability, the Harvesting Plans still claim that EPL requirements will be implemented, which effectively means that the contractor undertaking the works is legally required to implement them.

The Harvesting Plan (p4) identifies that it is a non-scheduled operation and that the EPL does not apply, though notes *"All EPL conditions will apply to harvesting and roading operations".*

4.1. TRASHED DRAINAGE FEATURES

One mapped drainage line, three unmapped drainage lines (and associated drainage depressions) and two drainage depressions were found to have been intensively disturbed and seriously degraded (Appendix 5.3). The damage appeared so wanton that the only apt description is that they were trashed.

The Environment Protection Licence (EPL 6) and Fisheries Licence (FL 7.1(a),(b)) require that 5m filter strips/exclusion zones with 5m protection/buffer zones be applied to all unmapped drainage lines and first order streams. Forestry activities are to be excluded from these, except for the accidental felling of trees (FL 7.4, 7.5). The FL requires disturbed ground to be reinstated (FL 7.4, 7.5). The EPL (19B, 20J) requires that 70% ground cover must be achieved on all disturbed soil surfaces within 5 days.

At one site (TDF1, Photo 21) in the FMZ3B area no protection what-so-ever was applied to around a 100 metres of a mapped stream and no attempt has been made to rehabilitate it. Near to this an unmapped drainage line (TDF2) has been partially delineated and then heavily disturbed, with boundary markings buried in the debris (photos 22 and 23). Similarly, what appears to be an unmapped drainage line (TDF4) has been buried in debris (photo 28). Another unmapped drainage line (TDF5) has had a tree dropped in it. In all these cases neither filter strips/exclusion zones nor protection/buffer zones have been applied.

The Environment Protection Licence (EPL 6) and Fisheries Licence (FL 7.1(a)(b)) establishes that 10m wide special operational zones be established adjacent to the buffer

zones. Except for roading, machinery is required to minimise soil disturbance by using walkover techniques and raising blades (FL 7.8, EPL 20Q). While the Fisheries Licence permits the construction of snig tracks etc (FL 7.9) the EPL only allows them under limited circumstances (20R) and requires them to be documented (20S). The FL require that disturbed ground be reinstated (FL 7.9(c)). In general special operational zones appear to be ignored (see photos 21, 30, and 31). The practice of clearing pads in steep country to stabilise a machine while it cuts down trees (photo 30) would seem to be prohibited in special operational zones, particularly when they are not rehabilitated.

The Environment Protection Licence (EPL 15) requires that 5m wide buffer strips be applied along each side of all drainage depressions. Within these areas machinery disturbance is meant to be minimised, with blades raised and trees not snigged along them (EPL 22). There is no evidence that any drainage depressions were protected and at a number of sites they were subject to intensive disturbance (sites TDF2, TDF3, TDF4, TDF5, TDF6, photos 25, 27 and 29), often having logs snigged down them (ie photo 29).

The EPL (30) requires that debris from log dumps must be located outside filter strips, protection zones and buffer strips. Contrary to this, at one site (TDF2, photos 24, 25) debris from Log Dump 8 was pushed into and across a drainage feature, with much of it ending up in the centre of the stream. EPL (39) requires that spoil from snig track or extraction tracks construction, upgrading or maintenance must not be placed in filter strips, protection zones or buffer strips, which was similarly breached at site UDC1. The fact that these blatant breaches occurred in the FMZ3B area shows how poorly its values were safeguarded.

PHOTO 21: Trashed mapped drainage line from bottom left to centre top, FMZ3B area in Compartment 44 (TDF1, App5.3). There was no marking (remaining) and at least 3 large trees and many rainforest trees and shrubs had been removed, the intensive disturbance precluded any identification of what used to be there.

The Fisheries Licence (FL7) requires the boundary of any exclusion zone or buffer zone to be marked in the field. This was found to be done in some areas but not others, for example none of the streams in the vicinity of audit Area 2 were found to have their boundaries marked (part compartments 53 and 55).

PHOTO 22: Unmapped Drainage Line in FMZ3B area in Compartment 44 (TDF2, App5.3). The large tree on the right has two bars at right of base, the centre of the stream is in the centre of photo.

PHOTOS 23&24: Unmapped Drainage Line in FMZ3B area in Compartment 44 (TDF2, App5.3). Left photo: debris pile located to the left of above photo, mixed in with debris (centre right) is a sapling marked with two bars, indicating other side of drainage line somewhere in vicinity. Right photo: looking down stream from crossing, note the billets and soil pushed into centre of drainage feature.

PHOTOS 25&26: Unmapped Drainage Line in FMZ3B area in Compartment 44 (TDF2, App5.3). Note that whole tree stumps and large volumes of debris have been bulldozed into the drainage line.

PHOTO 27: Trashed drainage depression in wildlife corridor section of FMZ3B area in compartment 44 (TDF3, App 5.3). As well as being cleared and filled with debris there was significant machinery disturbance. Lucky this is a special prescription area!

PHOTOS 28&29: Compartment 55 Drainage line on left, note the person standing in centre of stream. Drainage depression on right, note extensive bulldozing of bed.

4.2. STREAM BUFFER INCURSIONS

Aside from drainage features that were trashed, four other incursions into stream buffers and failures to rehabilitate protection zones were documented (Appendix 5.3).

PHOTOS 30&31: First is pad constructed for harvesting within operational zone of unmapped drainage line in compartment 55, with spoil extending within buffer zone to 8.4m from centre of drainage line (person standing at base of spoil). Second is incursion into operational zones of marked unmapped drainage line in compartment 44, extending into the buffer zone 8m from stream. Note lack of any remediation.

4.3. UNREHABILITATED DRAINAGE CROSSINGS

Six crossings of drainage features were identified as being of particular concern (Appendix 5.3).

The Environment Protection Licence requires that drainage features must be crossed "using stable structures comprising either causeways, culverts or bridges" (EPL 46), *"designed, constructed, upgraded and maintained to wholly convey a peak flow from a 1:5 year storm event"* (EPL 50), *"designed, constructed, upgraded and maintained to withstand the peak flow from a 1:10 year storm event"* (EPL 51), and *"undertaken in a manner which prevents disturbance to the bed and banks of the drainage feature to the greatest extent practicable"* (EPL 53). During construction one requirement is to *"prevent to the greatest extent practicable the deposition of spoil into the drainage feature"* (EPL 56).

The EPL applies to both drainage lines and drainage depressions. In relation to crossings, the Fisheries Licence is primarily restricted to drainage lines (including unmapped) and streams. It requires that crossings must avoid disturbance to stream beds and banks, avoid siltation, and attempt to maintain natural flows (8.4.1).

Most of the numerous crossings across drainage lines and drainage depressions observed were constructed carelessly, with large volumes of debris deposited directly into the drainage channels below the crossings (UDC1, UDC 4, UDC5, UDC6 - App5.3), including logs (UDC1) and boulders (UDC 6). There did not appear to have been any thought gone into design.

PHOTOS 32&33: Crossings of unmapped drainage line in compartment 45 (UDC3, App5.3). Two crossings were made 57 metres apart (also UDC2) despite only one crossing being needed. The creek was still flowing but there had been no attempt to rehabilitate the crossings.

PHOTOS 34,35&36: Track constructed across head of drainage line in Compartment 5 (UDC5, App5.3, Breach 13, App5.4). This breach was identified by Forests NSW in April and use of the track has long since finished. Note the lack of any remediation aside from cross banks and the initiation of erosion. This is upstream from the record of the Stuttering Frog and about 50m above its exclusion zone.

In relation to UDC4 and UDC5 (Photos 34, 35, 36), these were identified by Forests NSW (App 5.4. no13) as breaches in April with the comment "*Bulldozer driver opening old road for snig track, pushed through 2 unmapped drainage lines"*, though were excused on the basis of *"New to the job and didn't understand the licence"*. Despite large amounts of fill being pushed into the drainage lines and both crossings being situated upstream (50-80m) from a Stuttering Frog exclusion zone, Forests NSW concluded that there was no

environmental harm and simply explained the licence to the operator without undertaking any remedial action.

Both the Environment Protection Licence and Fisheries Licence require that disturbed areas resulting from construction in drainage features must be reshaped to achieve a stable cross section and soils stabilised within 5 days, except where the soil is saturated and temporary measures can be implemented (EPL 54, FL 8.4.3(b)). There did not appear to have been any attempt to rehabilitate any snig track crossings, aside from constructing cross-banks across tracks 5-20m away. The large volumes of material forming some crossings and the tracks forming dams is going to result in significant problems in the future.

PHOTOS 37&38: Crossing across drainage depression at head of deep gully in compartment 55 ((UDC6, App5.3). Note the excessive unrehabilitated soil disturbance and the boulders (with person standing on them) pushed into centre of stream.

5. APPENDICIES

5.1. THREATENED AND OTHER SIGNIFICANT FAUNA SPECIES RECORDS
Compartments 44-46 and 53-55, Girard State Forest, 7- 8 August 2010

species	GDA Easting	GDA Northing	Cmpt	notes
Little Lorikeet *Glossopsitta pusilla*	432871	6799693	(Crooked Creek camp)	small flock 5+ over
Superb Lyrebird *Menura novaehollandiae*	431800-431900	6797300-6797400	44	numerous scratchings about creeklines, distributional limit
Powerful Owl *Ninox strenua*	431900	6796800	45	1 calling early evening
Sooty Owl *Tyto tenebricosa*	431600	6796600	45	1 gave wake-up call early evening
Sooty Owl *Tyto tenebricosa*	431780	6796530	45/54	1 called in with playback, responded strongly, aggressively
Sooty Owl *Tyto tenebricosa*	430938	6796387	54	1 called in with playback, responded aggressively, flew low overhead
Sooty Owl *Tyto tenebricosa*	431330	6797450	45	1 responded to call playback 30m upslope, did not come in
Koala *Phascolarctos cinereus*	431002	6797543	45	adult female with well-grown young on back, both in healthy condition, in tall slender Small-fruited Grey Gum *Eucalyptus propinqua*
Greater Glider *Petauroides volans*	431135	6797272	54	1 in New England Blackbutt *Eucalyptus andrewsii* 5m off road
Greater Glider *Petauroides volans*	431018	6797338	54	1 in senescent New England Blackbutt *Eucalyptus andrewsii* on road
Greater Glider *Petauroides volans*	431088	6797451	45	pair in Sydney Blue Gum *Eucalyptus saligna* 6m off road
Greater Glider *Petauroides volans*	431157	6797454	45	1 in New England Blackbutt *Eucalyptus andrewsii* 15m off road
Greater Glider *Petauroides*	431254	6797511	45	1 in Tallowwood *Eucalyptus microcorys*

volans				10m off road
Greater Glider *Petauroides volans*	431376	6797534	45	pair in New England Blackbutt *Eucalyptus andrewsii* 5m off road
(Yellow-belied Glider *Petaurus australis*)	429272	6797256	53	Small-fruited Grey Gum *Eucalyptus propinqua* feed tree on roadside, old feeding scars
Yellow-belied Glider *Petaurus australis*	431330	6797450	45	1 responded to call playback 50m upslope, did not come in

D.R. Milledge, 9 August 2010

5.2. MARKED HABITAT AND RECRUITMENT TREES

1.

Crown Development (P:poor, M:moderate, Good). Butt damage (% circumference),
Growth Stage (Y:young,M: mature, LM: Late Mature, S:senescent). Suppressed (Y/N)

	SPECIES	DIAMETER (cm)	CROWN (P/M/G)	BUTT D. %	GROWTH (Y/M/LM,S)	SUPPRESS Y/N	GDA
HABITAT	Tallowwood	110	M	55	LM	N	430259 6796443
RECUITMENT	-						

Has debris been minimised, removed and/or flattened within 5 m? No, moderate amounts
Comments: No other habitat trees or recruitment trees marked in vicinity on this spur.

2.

	SPECIES	DIAMETER (cm)	CROWN (P/M/G)	BUTT D. %	GROWTH (Y/M/LM,S)	SUPPRESS Y/N	GDA
HABITAT	Blue Gum	135	G	0	M	N	430205 6796287
RECUITMENT	Brush Box	62	G	40	M	N	430209 6796282

Has debris been minimised, removed and/or flattened within 5 m? No, large amounts around Brush Box, some around Blue Gum.
Comments: see below

3

	SPECIES	DIAMETER (cm)	CROWN (P/M/G)	BUTT D. %	GROWTH (Y/M/LM,S)	SUPPRESS Y/N	GDA
HABITAT	Tallowwood	118	G	0	LM	N	430304 6796276
RECUITMENT	Tallowwood	96	M	0	M	Y	430293 6796269

Has debris been minimised, removed and/or flattened within 5 m? No, large amounts around both trees.
Comments: Aside from these two pairs, no other habitat trees or recruitment trees marked in vicinity on this spur.

5.3. STREAM INCURSIONS

Trashed Drainage Features

- **TDF1** Filter strip on first order stream not delineated and cleared. Compartment 44 (GDA 431862, 6797392)
- **TDF2** Unmapped drainage line and depression, partially with buffer markings, trashed. Compartment 44 (above GDA 431679, 6797452 to below 431640, 6797425)
- **TDF3** Drainage depression trashed. Compartment 44 (below GDA 432641, 6797203).

- **TDF4** Unmapped drainage line and depression trashed – Stuttering Frog habitat. Compartment 55 (GDA 430292, 6796143)
- **TDF5** Unmapped drainage line and depression trashed, tree dropped into drainage line. Compartment 53 (GDA 430142, 6796599)
- **TDF6** Drainage depression trashed. Compartment 45 (GDA 431190, 6797512)

Stream Buffer Incursions

- **SBI1** Protection zone intruded into, up to 8m from unmapped creek, with extensive unrehabilitated clearing. Compartment 44 (GDA 431896, 6797673).
- **SBI2** Mapped stream buffer and protection zone intruded into. Compartment 53 (GDA 430280, 6796453)
- **SBI3** Mapped stream buffer and protection zone intruded into, unrehabilitated. With debris bulldozed to near bank. Compartment 55 (GDA 430276, 6796312)
- **SBI4** Mapped stream buffer and protection zone intruded into, unrehabilitated. With debris bulldozed to 8.4m from centre of stream. Compartment 53 (GDA 429309, 6796183)

Unrehabilitated Drainage Crossings

- **UDC1** Unmapped drainage line crossing, spoil and logs pushed into channel, unrehabilitated. Compartment 44 (GDA 431679, 6797452)
- **UDC2** Unmapped, but marked, drainage line crossing, unrehabilitated. Compartment 45 (GDA 431139, 6797486)
- **UDC3** Unmapped, but marked, drainage line crossing, unnecessary as 57 metres above UDC2, unrehabilitated. Compartment 45 (GDA 431183, 6797494)
- **UDC4** Unmapped drainage line/depression crossing, spoil pushed into drainage line, unrehabilitated. Compartment 53 (GDA 430207 6796509)
- **UDC5** Drainage line crossing, spoil pushed into drainage line, unrehabilitated. Compartment 55 (GDA 430173, 6796440)
- **UDC6** Unmapped drainage line/depression crossing, spoil and boulders pushed into drainage line, unrehabilitated. Compartment 53 (GDA 429868, 6796403)

5.4. FORESTS NSW REPORTED BREACHES

1. *Poor retention of marked recruitment trees*, 5 August - Compartment 45 (GDA 43111, 6797800)

2. *Required number of Habitat and Recruitment trees not marked in the field*, 5 August – Compartment 45 (GDA 43106, 679732)

3. *Debris around H tree*, 6 August – Compartment 45 (GDA 43175. 6797500)

4. *Wildlife corridor, ridge and headwater and riparian protection not marked wide enough in the field. Harvesting has occurred in the area resulting in these protection areas being harvested. A significant area of the buffer has been marked too narrow* [width reduced from 50m down to a minimum of 19m], 5 August - Compartment 45 (GDA 043113, 679792)

5. *Head in unmapped filter strip*, 26 July - Compartment 54 (GDA 430742, 6796718)
6. *Head of tree landed in a 1st order filter strip*, 26 July - Compartment 54 (GDA 430757, 6796704)
7. (unstated), 26 July- Compartment 54 (GDA 430791, 6796702)
8. *Tree felled into Rainforest*, 21 June - Compartment 44 (GDA 432075, 6797393)
9. *Dozer driver pushed tree into unmapped drainage line*, 10 April - Compartment 53 (GDA 429360, 6797230)
10. *Harvesting disturbance within frog 30m protection zone*, *Thick viney scrub prevented boundary marking. Drainage line is incorrectly mapped*, 11 May - Compartment 53 (GDA 430324_6796298, 430287_6796299, 430246_6796320)
11. *Head of tree felled into unmapped filter strip*, 27 April - Compartment 54 (GDA 430920, 6797210)
12. *Dozer driver pushed tree into unmapped drainage line*, 12 April - Compartment 53 (GDA 429360, 6797230)
13. *Bulldozer driver opening old road for snig track, pushed through 2 unmapped drainage lines*, 5 April – Compartments 53&55 (GDA 430210_6796500, 430175_6796440)
14. *Head of tree in unmapped filter strip*, 29 March - Compartment 53 (GDA 430235, 6796735)

BURNT AT THE STAKE 2