FORESTS NEW SOUTH WALES, CENTRAL REGION

STANDARD HARVEST PLAN CONDITIONS FOR NATIVE FOREST OPERATIONS UNDER THE IFOA

Approved: Kathy Jones:
Regional Manager
Date: 18/10/2011

1. Approvals and Responsibilities

The Contractor/Licensee is responsible to follow the direction of authorized Supervising Forest Officer and implement conditions specified in the relevant Harvesting Plan, Codes of Practice and IFOA Licenses. The contractor must receive a clearance certificate before moving between operations.

The Supervising Forest Officer (SFO) - is responsible to implement tree marking to meet silvicultural conditions and licence conditions and monitor contractor performance and log segregation to ensure compliance with harvest plan, code of logging practice and IFOA licence condition. The SFO must authorize use of existing snig track crossings, snigging across roads and trails and movement of dumps up to 200 m from the mapped location. The SFO is responsible for maintaining a diary of key events, a record of dump usage, temporary closures and undertaking regular Operational Inspection Reports (OIRs).

The Regional Manager must approve major amendments to harvesting plans, including activities requiring a schedule 6 assessment under the TSL prior to implementation.

2. Operational Conditions

Operational Conditions relating to the Threatened Species Licence, Environment Protection Licence and Fisheries Licence in Lower North East Region are specified in the Technical Guidance Notes 2005 booklets. A summary and interpretation of some of these conditions is provided below.

2.1 Drainage Feature Protection

Conditions of EPL Schedule 4: Section D Protection of Drainage Features Apply, except for conditions relating to Unmapped Drainage Lines in compartments where UMDL harvesting is permitted.

Riparian zone widths – Inherent Hazard 1 and 2 Compartments

Stream Order	EPL Filter Strip TSL Protection zone (hard)	EPL Protection Zone TSL Protection zone (soft)	EPL Operational Zone
Unmapped	0 (BMP) Or 5	0 (BMP) Or 5	0 (BMP) Or 10
1st Order	5	5	10
2nd Order	5	15	10
3rd Order	5	25	10
4th Order or greater	5	45	10

BMP – Best Management Practice Guidelines for Logging Unmapped Drainage Lines – Section 4.

Riparian zone widths – Inherent Hazard 3 Compartments

Stream Order	Filter Strip (hard)	EPL Protection Zone TSL Protection zone (soft)	EPL Operational Zone
Unmapped	10	0	10
1st Order	10	0	10
2nd Order	20	0	10
3rd Order	30	0	10
4th Order or greater	50	0	10

NOTE: ONLY PROTECTION ZONE (SOFT) WILL BE MARKED IN FIELD

Drainage Depressions – 5m EPL Buffer Strip

Operational conditions to apply to Riparian Zones and Filter strips

Zone	Licence condition	Summary
EPL Buffer Strips (Drainage Depressions)	Conditions 15,16, 21-23 of Schedule 4 of the EPL must apply (Buffer strips).	Fall in and fall out. Minimise disturbance. Don't operate when soil is saturated.
Modified harvest zone (unmapped drainage lines)	Refer to SFO training package, Management of Unmapped Drainage Lines Conditions 1-3 of BMP apply	Fall in and fall out. Minimise disturbance. Groundcover rehabilitation requirements, 70% groundcover, furrow infill and drain. Harvesting machinery entry for 5m into zone.
Machine exclusion zone (unmapped drainage lines)	Refer to SFO training package, Management of Unmapped Drainage Lines Conditions 1-3 of BMP apply	Fall in and fall out. Minimise disturbance. Groundcover rehabilitation requirements, 70% groundcover, furrow infill and drain.
EPL Filter Strip (hard) And TSL Protection Zone (hard)	Conditions 6, 8, 11-14, 14A & 14B 17, 18, 19, 19A, 19B, 19C, 20 of Schedule 4 of the EPL must apply (Filter strips) Conditions 5.7a,d – i of the TSL must apply Operations within Protection Zones (hard)	Trees not to be felled into. Accidentally felled trees may be removed (not if pulp or salvage) provided that: -The crown is cut off from trunk and left where it has fallen unless tree can be lifted using mechanical harvester. -The wheels or tracks of harvesting machinery must remain outside protection zone (hard) -The SFO documents the incident -Resulting log furrow in filled with soil, drained onto a stable surface, at least 70% ground cover must be achieved within 5 days -Cannot reposition tracks within adjacent Protection Zone (soft)for the sole purpose of retrieving accidentally felled tree from filter strip/Protection Zone (hard), can only reposition tracks to retrieve accidentally felled tree if repositioning is associated with felling of trees within net harvest area away from Protection Zone (soft) 70% Groundcover must be achieved on all disturbed soil surfaces within EPL Filter strips within 5 days of creation. Harvesting Machinery must not enter filter strips or Protection Zones (hard) except for construction of and use of road crossing or snig track crossing
EPL Protection Zone TSL Protection	Conditions 20A – 20J of Schedule 4 of the EPL must apply (Protection Zones) 5.7b, j – q TSL must apply	Trees in Protection zones (soft) must not be felled Trees may be felled into Protection zone (soft) The crown must be cut off from trunk and left where it has fallen unless tree can be

Zone	Licence condition	Summary
Zone (soft)	Operations within Protection Zones (soft)	lifted using mechanical harvester. Machinery may operate in the outer five meters of a protection zone for the purpose of cutting and removing timber logs located in an operational zone where: the technique of directional felling could not be used the only practical method of felling that tree so that it falls outside the protection zone (soft) is to enter the protection zone (soft) with harvesting machinery the tree is felled away from the protection zone (soft) the wheels or tracks remain 5 meter of the boundary of the protection zone and NHA walkover techniques only , minimise skewing Blade up at all times **Cannot reposition tracks within a protection zone (soft) for the sole purpose of retrieving accidentally felled log from filter strip/protection Zone (hard) Can be moved only if needed to gain access to timber log in Operational zone** **Resulting log furrow in filled with soil, drained onto a stable surface, at least 70% ground cover must be achieved within 5 days** **70% Groundcover must be achieved on all disturbed soil surfaces within EPL Protection Zone within 5 days of creation.** **No operations allowed when soil is saturated** **Machinery only to enter Protection Zone (apart from detail above) for the purpose of constructing extraction track or snig track crossing.**
EPL Operational Zone	Conditions 20K – 20U of Schedule 4 of the EPL must apply (Operational Zones)	Fall in and fall out. Minimise disturbance by using walkover techniques and minimise skewing. **log furrows in filled with soil, drained onto a stable surface, at least 70% ground cover must be achieved within 5 days** **70% Groundcover must be achieved on all disturbed soil surfaces within EPL Protection Zone within 5 days of creation.** **Don't operate when soil is saturated.** Snig tracks may only be constructed (blade down) where the construction of a snig track immediately adjacent to the operational zone would result in a side cut. SFO to document these instances.
EPL Buffer Strips (Drainage Depressions)	Conditions 15,16, 21-23 of Schedule 4 of the EPL must apply (Buffer strips).	Fall in and fall out. Minimise disturbance. Don't operate when soil is saturated.

2.2 Roads and Road Crossings

The Conditions under Schedule 5 of the EPL apply to roads and road crossings.

2.3 Log Dumps

Location

Field location of log dumps must utilise the most level site available, consistent with the location indicated on the Operational Map. It is permissible for the SFO to move the location up to 200m from the indicated position to achieve this. If additional log dumps are required, the SFO must obtain approval from the Harvesting Forester.

Treatment – EPL Schedule 4 Conditions 26-32

Run-off from log dumps must not be discharged into drainage features.

Location of Dump and Log Dump debris	**IH1**	**IH2**	**IH3**
Dump Located from outer boundary of protection zone	Outside	10 m	20 m
Log Dump Debris must be located from outer boundary of protection zone	Outside	5m	15 m

Bark Management

The following 'bark management' practices will be implemented in lieu of section 16.2 of the Forest Practices Code:

On a log dump, bark should be moved by an excavator. Pushing bark around the dump with a blade should be avoided. Where bark has been pushed with a blade, an excavator must shake the soil out of the bark prior to it being heaped (this will facilitate burning of the bark heap).

Bark heaps must not be located adjacent to, or under the crowns of, retained trees.

Where a bark heap is located to the side of an active log dump, the bark heap must be surrounded by a 5m mineral earth break.

Upon completion of each log dump, bark heaps must be positioned in the centre of the log dump with the excavator, ensuring that the bark is essentially soil-free and 'fluffed up' ready for burning.

Timber off-cuts must be stacked separately, away from the bark heap.

Future Intent

Dumps must be re-shaped, drained to produce a stable surface. For dumps not planned to be re-used for harvesting within the next 10 years soil should be stockpiled prior to use and re-spread at the completion of use with the aim of establishment natural regeneration. The SFO must note instances where compaction of the dump means natural regeneration is unlikely to result and further treatment to achieve a regenerated condition is required.

2.4 Snig and Extraction Tracks

Conditions 38-82 of Schedule 4 of the EPL Apply.

Technique

Wherever practicable, walkover extraction techniques be used in preference to snig track construction.

The SFO must approve in writing the use of snigging/extraction equipment on roads and all roads must be returned to their pre-harvesting condition by the logging contractor immediately after a road has ceased being used for harvesting.

Drainage of Snig Tracks

EPL Table 3: Maximimum Distance of Water flor along snig tracks or extraction track surface (metres measured along ground surface). The table may be interpolated to derive site-specific maximum spacings.

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

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Crossbank Height

The minimum unconsolidated crossbank height must be **35 cm**, and the minimum consolidated crossbank height must be **25 cm**. The EPA recommends a maximum unconsolidated height of **50cm**.

Drainage Feature Crossings

Use of existing snig track crossings is permitted with SFO approval (subject to conditions specified in Section 2.5 below).

All **new snig track crossings** must be authorised by the Regional Manager.

In Inherent Hazard 3 compartments snig tracks must not cross watercourses, unless by a using a permanent snig track crossing structure.

Snig tracks must be drained between 5 and 20 m of a drainage feature (where practicable).

Drainage feature crossing design, construction, management and monitoring must follow all of the many requirements of Conditions 39-62 of the EPL.

Wet Weather

All snigging and extraction must cease when water is running in tracks or tracks are likely to be significantly rutted.

- Maximum allowed soil disturbance limits for snig and/or extraction tracks: rut or ruts with a depth of 20cm below the natural surface of the ground and a length of 10m. (Forest Practices Circular 2008/4)

2.5 Summary of TSL Conditions

The Threatened species licence conditions for Lower North East Region are set out in the TSL Booklet – Technical Guidance Note 2005 – 3 A and these must be adhered to.

Exclusion Zone Category	**TSL Exclusion Zone**	Removal of accidentally felled trees if at least one HQ log? (see note **1**)*	Machine entry to 5m for felling HQ logs in NHA away from exclusion zone? (note **2**)	Felling of HQ logs into zone at 6/200 m? (see note **3**)	Marking in the field	Use Existing Road/Snig Track (**note 4**)	Snig Track and Road Re-opening/ Construction (**note 5**)	IFOA licence condition	TSL condition
Total/Solid	Heath and scrub				•lll•	Sch6			5.10
	General frog 10m around dams					Sch6			5.12
Machinery-in	General bird nest and roost protection		✓		•lll•	✓			5.13
	Bat roost protection		✓			✓			5.14
	Frogs: Green & Golden Bell Frog Giant Barred, Fleays, Stuttering Frog Philoria spp Giant Burrowing Frog		✓			✓			6.2 6.3 6.4
	Bats: Golden tipped Bat Large-footed Myotis		✓			✓			6.20 6.21
	Snakes: White crowned Snake Pale Headed Snake		✓			✓			6.5 6.6
	Rufous Scrub Bird		✓			✓			6.10
	Threatened and protected flora		✓			✓			6.22-6.26
Accidentals	Wetlands	✓			lll	Sch6			5.9
	Rainforest and rainforest exclusion zones	✓				✓		10A	5.4
Limited	HCV Old Growth	✓	✓	✓	ll	✓	RM	18	5.3
	Rare Non-commercial Forest Type	✓	✓	✓		✓	RM	18	5.5
	FMZ 2 and 3A	✓	✓	✓		✓	RM	18	
	Ridge and Headwater Habitat	✓	✓	✓		✓*			5.8
	Rocky outcrop and cliff protection	✓	✓	✓		Sch6			5.11

	Threatened species habitat protection Large Forest Owl Hasting river Mouse Spotted tail Quoll Yellow Bellied Glider den Squirrel Glider Glossy Black Cockatoo nest/roost	✓	✓	✓		✓	Sch6		6.9 6.13 6.15 6.17 6.16 5.13
Riparian	TSL Riparian Habitat	✓	✓	✓		✓	RM		5.7

Note Fix bars/dots to match tree mark code

✓ = Activity permitted (with conditions)

1, 2, 3 – Refer to table notes for conditions

* TSL conditions are not breached where a tree is **accidentally** felled into any exclusion zone. However, accidentally felled trees may only be removed from the exclusion zones indicated in this table.

Table Notes:

(1) Removal of Accidentally Felled Trees

An accidentally felled tree may be removed, but only if the tree contains a high quality log. The following conditions apply:

- the crown must be cut off from the trunk and left where it has fallen, except where the whole of the tree is lifted out of, or lifted and moved within, the zone using a mechanical harvester; and
- In removing the tree/log any disturbance to the ground and soil must be minimised.
- Harvesting machinery that has entered the exclusion zone for the purpose of felling a tree within the net harvest area (see 2 below) may also be used to remove a tree that has been felled into the exclusion zone accidentally, or as allowed in 3, below.
- The wheels or tracks of harvesting machinery must not (to any significant extent) be repositioned or moved solely for the purpose of removing a tree felled into the exclusion zone.

(2) Machine entry to 5m for felling HQ logs in NHA away from exclusion zone

Harvesting machinery is permitted to operate in an exclusion zone for the purposes of felling a tree within the net harvest area that contains a high quality log where:

- The technique of directional felling could not be used to fell the tree so that it falls outside the exclusion zone.
- The only practicable method of felling the tree is to enter the exclusion zone.
- The tree is felled away from the exclusion zone.
- The wheels or tracks of harvesting machinery remain wholly within 5 meters of the boundary of the exclusion zone.
- The use of the harvesting machinery involves the use of walkover techniques (only) and minimal ground disturbance.

(3) Felling of HQ logs into zone at 6/200

The felling of trees across the boundary of an exclusion zone is prohibited except where no more than six (6) trees containing high quality logs are felled across the boundary in any 200 meter length of the boundary of an exclusion zone, whatever 200 meter length of boundary is considered:

- An accidentally felled tree may be removed from the zone, but only if the tree contains a high quality log. These trees do not count toward the 6/200 rule.
- Trees fallen under the 6/200 rule must be felled in such a way so as to avoid damage to trees growing in the exclusion zone.

(4) Use of Existing Snig Track or Road

Schedule 6 requires NPWS approval prior to using a track through the specified exclusion zones. These approvals, where given, will usually be specified in the site-specific harvesting or roading plans prior to commencement of operations.

(5) Snig Track and Road Re-opening and Construction

RM = Regional Manager approval is required prior to constructing a road or snig track through these exclusion zones. These approvals will usually be specified in the site-specific harvesting or roading plans prior to commencement of operations.

3. Tree Marking Code

All exclusion zone and buffer zone boundaries must be marked in the field, either by physical tree markings or as a boundary on a portable GPS unit using an approved map image, except where specified forestry activities will not come within 50 metres of such boundaries. The Harvesting Forester will direct the contractor as to which boundaries will be marked using a GPS unit, and which boundaries must be marked by the SFO using physical tree markings. This direction must be recorded in the SFO notes.

Within the Net Harvest Area, retained trees must be marked, except where the understorey consists of thick impenetrable lantana greater than one metre high or other impenetrable understorey. In these cases the SFO must document and justify such situations as it becomes apparent during compartment mark-up in the SFO diary.

Description	Symbol
RETAINED TREES **Retained trees may fill several roles (*eg* recruitment and feed tree)** TSCL condition 5.6.g.(ii) (flatten/remove logging debris and minimise disturbance to ground and under storey within 5m radius) applies to trees retained with a letter code (except K).	
Retained trees not to be removed or damaged (*eg* grower)	One horizontal line or ring
Hollow-bearing tree	**H**
Recruitment tree	**R**
Eucalypt feed tree	**E**
Yellow-bellied Glider v-notch feed tree or record	**YB**
Yellow-bellied Glider retained feed tree	**One horizontal line or ring**
Squirrel Glider sap feed tree, record or nest	**SG**
Koala high use tree	**K**
Koala retained feed tree	**One horizontal line or ring**
Glossy black cockatoo feed tree, record or nest	**GB**
Owl nest and/or roost	**OWL**
Raptor nest	**N**
BOUNDARIES	
Solid Exclusion zones with no boundary exceptions. Licence conditions not breached if tree accidentally felled into	**Four horizontal bars with dot above and below**
Machinery Machinery entry 5m to fell timber log in NHA away from protn. Zone.	**Three horizontal bars with dots above and below**
Accidentals Can remove accidentally felled timber logs. Groundcover rules apply	**Four horizontal bars**
Limited Can remove accidentally felled timber logs. Groundcover rules apply Machinery entry 5m to fell timber log in NHA away from protn. Zone. 6 trees (containing timber log) in every 200m can be felled into.	**Three horizontal bars**
Riparian Protection zone to be marked in field	**Two horizontal bars**
Unmapped drainage line marking Modified harvesting zone, including 5m machinery exclusion zone, marked 10m from banks	θ
Edge of net harvest area (*eg* unmerchantable) Retained trees and critical boundaries to be marked within 30m beyond the boundary	⊙

Description	Symbol
Tree heads may fall across the line, provided they comply with boundary and tree retention rules (eg 5m debris)	
TREES TO BE REMOVED	
Individual tree	**• or dots**
Directional felling mark	**🡐 over •**
Possible Pole	**• with 'P'**
Possible Girder	**• with 'G'**
SITES MARKED FOR INFORMATION	
Compartments boundary	**O**
Private property	**PP**
Dump site with optional dump number reference	**D**
Road/Track line	**I**
Approved crossing site with optional reference (crossing A)	↕ **A**
Cancellation mark	**X**
Edge of identified AGS 'groups'	*
Slope angle indication (commences here)	*eg* **25°**
Dangerous Tree/Potential Dangerous Tree (with arrow if required)	∅
FLORA AND FAUNA FEATURES (Retain)	
Frog record	**F**
Hastings River Mouse record	**HRM**
Smoky Mouse record	**SM**
Quoll latrine	**QL**
Quoll den	**QD**
Quoll record	**Q**
Bat roost	**BR**
Bat record	**B**
Phascogale den	**PD**
Philoria frog seeps and soaks	**PHS**
Cave, tunnel or mineshaft	**CTM**
Threatened plant	**TP**

4. Best Management Practices for Unmapped Drainage Lines

In compartments where Unmapped Drainage line harvesting is permitted the following best management practice conditions apply.

1.0 Machinery exclusion zone: 0 to 5m from drainage line.

1.1 Machinery is excluded within 5m of the edge of drainage lines, except for the construction and use of a crossing. The edge of the drainage line is defined consistent with the EPL. This zone is marked with the θ symbol.

2.0 Modified harvest zone: 0 to 10m from drainage line.

This zone is marked with the θ symbol.
Ground disturbance is to be minimised within this zone and disturbance must be rehabilitated as outlined below. Machinery is only to enter the outer 5m of this zone where essential and under the following conditions:
For mechanical harvesting operations: mechanical harvesting and shovel extraction with the harvester is permitted,
For manual falling harvesting operations: log extraction with a grapple skidder or dozer is permitted only where machinery does not have the capacity to use a snig chain/rope
For all operations: the construction or use of an authorised crossing.

2.1 Ground cover maintenance

2.1.1 Machinery operating within modified harvest zones 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 for the construction of a road, extraction track or snig track crossing, or for safety reasons. Crossings are to be minimised.

d) Not snig along drainage depressions and drainage lines.

e) Not operate when the soil is saturated.

2.1.2 Earthworks must not be undertaken within the modified harvest zone except for the construction of a road, extraction track or snig track crossing, consistent with EPL conditions to avoid soil disturbance.

2.1.3 Any crossings of unmapped drainage lines must be consistent with the conditions for crossing drainage lines in the EPL.

2.2 Ground cover rehabilitation

2.2.1 Soil disturbance created by machine operation in the modified harvest zone is to be rehabilitated by applying litter, twigs or mulch to achieve at least 70% surface cover on the disturbed area within one day of the creation of the disturbance (by contractor).

2.3 Log furrow rehabilitation

2.3.1 All log furrows produced by log extraction from the modified harvest zone must be:

a) Infilled with soil and covered with litter, twigs or mulch to achieve at least 70% surface cover within one day of the creation of the furrow.

b) Drained, 10m from the bank of the unmapped drainage line, so water running down any log furrow is dispersed onto undisturbed forest floor within one day of the creation of the furrow.

c) Drained, if required, with a snig track crossbank, 10m from the bank of the unmapped drainage line, where a snig track will discharge water directly into the furrow (all by contractor).

3. Tree falling conditions

3.1Tree selection and extraction

3.1.1 Trees may be felled into and from within the modified harvest zone.

3.1.2 Tree removal within the modified harvest zone and buffer on buffer trees from adjacent areas will be targeted single tree selection of high quality products only (quota, veneer, PPG, graded smalls.

3.1.3 Trees must be marked for removal within the modified harvest zone.

3.1.4 Minor debris from understorey trees accidentally falling into or across drainage lines is acceptable.

3.1.5 Directional felling should be used where possible to direct trees located within the modified harvest zone out of the zone, for ease of straight line extraction. Any such disturbance is to be rehabilitated with 70% groundcover.

3.1.6 Trees felled from within or into the modified harvest zone must be extracted in the direction of the line of the log to minimise soil disturbance.

3.1.7 If a tree is accidentally fallen into or across a drainage line:

a) Forests NSW will take appropriate action, including the issuing of Penalty Infringement Notices, where trees are deliberately or negligently felled into or across a drainage line.

b) Forests NSW will determine appropriate action on a case by case basis, that may involve the removal of substantial debris from within the banks of the drainage line where safe to do so. Consideration will be made of the potential fire risk, potential benefits of leaving the debris in place and other factors

3.2 Excluded trees

3.2.1 Trees may not be felled from within or into the modified harvest zone where:

a) The ground slope in the zone of the anticipated disturbed area exceeds 21 degrees. The anticipated disturbed area is the area the SFO assesses as likely to be disturbed by tree falling and extraction (log furrow, snig track, area swept by log during extraction). The disturbed area does not include the area impacted by a tree head, ie trees may be felled into the zone where the ground slope exceeds 21 degrees only if there is to be no extraction disturbance. If trees are to be felled into the modified harvesting zone consideration should be given to the possibility of trees “spearing” into the drainage line.

b) The tree is growing within the banks of the unmapped drainage line.

c)The tree would fall into or across drainage lines to avoid disturbance to the drainage line or banks.

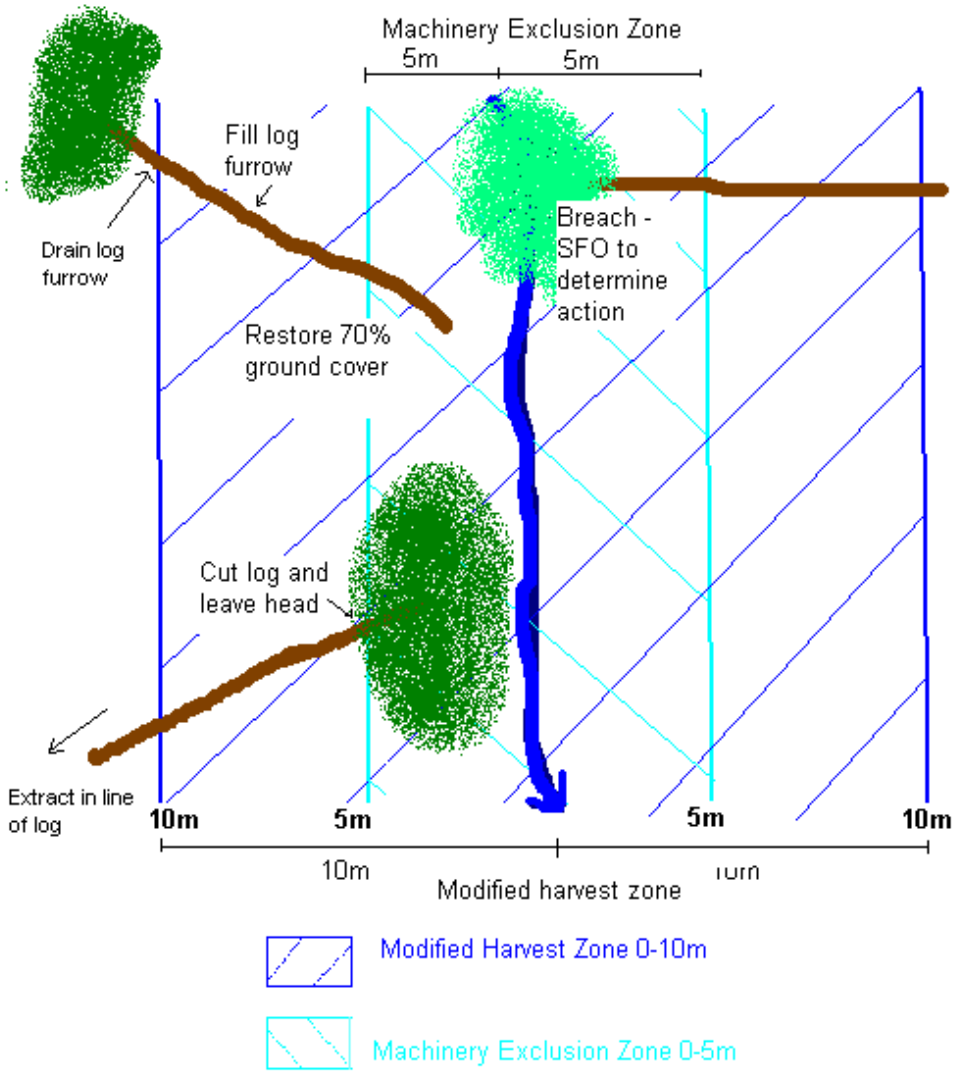
d) There is evidence of localised occurrence of mass movement, such as earth slumps, topples, falls, slides and/or flows.

e) There are regolith class 4 soils within the zone.

f) There is less than 70% groundcover from pre-harvesting burning within the modified harvesting zone

g) There are TSL species-specific or other exclusions, including where 200m/100m frog/bat species specific exclusions extend over unmapped drainage lines.

h) Threatened Fish License habitat class 1 or 2 occurs and the unmapped drainage line is unbroken (by a drainage depression) from the mapped stream.

i) Unmapped drainage lines can only be logged in accordance with seasonality restrictions.

j) The tree serves the purpose of being a retained tree under TSCL requirements (such as habitat trees, recruitment trees and eucalypt feed trees).