

FORESTS N.S.W.

SOUTHERN REGION: EDEN



HARVESTING PLAN HP_ED_2001T_09 Compartment 2001

1: SAFETY CONSIDERATIONS

1.1: EMERGENCY PLAN INFORMATION.

(a) **Mobile Phone reception on work site:**

Next G Good Poor Nil Digital ? Good | Poor ? Nil
 Nearest reliable reception: High points within the compartment and along Cobargo-Bermagui Road.

(b) **Forests NSW Radio from work site:**

Channel No:
 Call to:
 Call sign from:

Contractor Radio at work site:

UHF Channel No:
 Contractor Radio:
 Call to Bush Boss:

(c) **Emergency meeting point for ambulance:**

Wallaga Lake-Bermagui Road and Cobargo-Bermagui Road Junction.
 1:100000 map sheet: Narooma.
 AMG zone: 56.
 AMG Grid reference: E234999 N5966560.
 Lat/Long for GPS: 36° 24' 34"S 150° 02' 41"E.

(d) **Closest Helicopter Landing Place:**

Wallaga Lake-Bermagui Road and Cobargo-Bermagui Road Junction.
 1:100000 map sheet: Narooma.
 AMG zone: 56.
 AMG Grid reference: E234999 N5966560.
 Lat/Long for GPS: 36° 24' 34"S 150° 02' 41"E.

(e) **Procedure for obtaining Ambulance assistance:**

Dial "000" OR Call Eden Forestry Office for Ambulance assistance.
 Dial "112" only as an alternative to "000" if you have a GSM digital mobile phone and you are outside your own provider's GSM network coverage area.

"000" Operator Question.

Response

- | | |
|---|---|
| 1. Police, Fire, Ambulance? | Ambulance Wollongong. |
| 2. <u>Suburb</u> (<i>State Forest name</i>): | Bermagui. |
| (<i>Nearest town or named locality</i>): | Bermagui. |
| (<i>Nearest Ambulance station</i>): | Bermagui. |
| 3. <u>Address</u> : (<i>Nearest named State forest road</i>): | Meads Creek Road. |
| 4. <u>Nearest Road Junction</u> : | Wallaga Lake Road and Spotted Gum Road |
| 5. <u>Local Government Area</u> : | Bega Valley Shire Council. |
| 6. <u>Nature of the problem</u> : | Give details of accident, number and condition of casualties. |

7. Where is the accident: Work site location – (Centre of the compartment)

1:100000 map sheet: Narooma. AMG zone: 56.

AMG Grid reference: E235052 N5967183.

Lat/long for GPS: 36°24' 13"S 150° 02' 44"E.

8. Directions to navigate from Ambulance Station to meeting point:

Directions from Bermagui:

- Head north along Wallaga Lake-Bermagui Road for approximately 2km to Cobargo–Bermagui Road junction.

9. Injuries?: Give detailed information about the condition of the casualty.

10. Call back No: Give your Mobile Number or Eden Office: 1300880548.

11. Name of Reporter: Give own name.

1.2: SITE SPECIFIC IDENTIFIED HAZARDS.

Assessment of existing hazards was undertaken at the time of planning. These hazards are in the attached table and where appropriate, control strategies have been applied. Where no control strategy has been described, the contractor must develop appropriate strategies as part of the contractors Safety Management Plan. A copy of the hazard assessment and control strategies is provided to assist in the development of the contractors Safety Management Plan for this harvesting area.

Identified hazards requiring risk assessment and control strategy in Safety Management Plan

IDENTIFIED HAZARD	SUGGESTED CONTROL STRATEGY
1. Adjoining roads of various traffic levels	Warning signs at intersections, road closure and traffic control measures.
2. Overhead hazards associated with dumps	Assess overhead hazard within two tree lengths (based on the tallest surrounding trees) of the dump. Assess risk, & if necessary remove hazard or relocate dump site.
3. Hazardous or dead trees	Refer to FNSW Safety Standard 1.3.9. Assess area within two tree lengths of work site. Assess risk, mark any Distinctly Dangerous Trees with the symbol “ A -” and if necessary remove hazard or move work site. Use machinery to assist with hazard removal if possible. Contractor is responsible for implementing control strategies during harvesting.
4. Dust from passing vehicles along dirt haulage routes	Restrict speed to minimise dust generation, slow down when passing vehicles. Turn on driving and hazard lights to increase visibility
5. Underground cables & pipelines	Minimise ground disturbance across or along cables & pipelines. Increase depth of earth cover as per BVSC & Telstra Duty of Care attached to this harvesting plan and see Section 5g Other Special Prescription Areas Contractor is responsible for implementing control strategies during harvesting.

6. Overhead hazards associated with powerlines	Assess trees within two tree lengths of the powerlines. Directional fall where safe to do so. Refer to FNSW Safety Standard 1.3.12 Working Near Powerlines (and other services) attached to this harvesting plan Contractor is responsible for implementing control strategies during harvesting.
7. Underground water tank	Ensure all operators are aware of the location. Do not drive machinery or walk over tank. SFO to tape off if required.
8. School bus stop	Cobargo-Bermagui Road and Wallaga Lake Road is part of a school bus route. Haulage vehicles are to take particular care between 7:25 a.m. to 8:30 a.m. and 4:00 p.m. to 5:00 p.m. weekdays. Tree felling within two tree lengths of the bus stop must not occur without prior inspection of the bus stop to see if it is occupied and then tree felling should only occur with the presence of a "lookout person:"

The planned locations for 1, 2, 5, 6, 7 & 8 are shown on the attached Operational Map.

b Traffic management/road closures

- The logging contractor is responsible for traffic control on all roads when felling is within two tree lengths (based on the tallest surrounding trees) of a road or extracting on roads or loading is occurring within 10 metres of a road. The contractor must ensure that Spotted Gum Road, Maculata Trail, Scenic Forest Drive (West & East), Neilson Road, Rays Road and all other internal forestry roads are closed to all traffic when trees within two tree lengths of Spotted Gum Road, Maculata Trail, Scenic Forest Drive (West & East), Neilson Road Rays Road and all internal forestry roads are being felled.
- Scenic Forest Drive East, Neilson Road and Rays Road are used to access private freehold. In the event Scenic Forest Drive East, Neilson Road and Rays Road are closed during harvesting. The road closures must be restricted between the hours of 10am and 2:30pm to accommodate private access on these roads unless prior consultation has occurred with the private freehold owners.
- The Supervising Forester should put in place a communication strategy with adjoining neighbours to enable freehold owners to access there properties during times of road closures.
- The duration of closure on Scenic Forest Drive East, Neilson Road and Rays Road must be kept to a minimum to accommodate private access on these roads.
- The unlicensed section of Scenic Forest Drive West running parallel and adjacent to Black Lagoon must **not** be used by 4wd traffic or harvesting machinery without prior documented approval of the Supervising Forest Officer (SFO) or Supervising Forester. Disturbance to this section of road must be kept to an absolute minimum. Safety barrier fences should be placed at either end of this section of road to indicate the road is closed to all traffic during logging.
- Within Compartment 2001 the contractor is to install baulk drains on Spotted Gum Road immediately west of the junction with Maculata Trail. The location of the baulk drains are to be approved by the SFO and are to drain onto stable ground and not directly into drainage features and as per the EPL.
- In the event that felling of trees occurs within two tree lengths (based on the tallest surrounding trees) or loading is occurring within 10 metres of Cobargo-Bermagui Road or Wallaga Lake Road then RTAs' Traffic Control at Work Sites TCP 83 attached to this harvesting plan must be implemented.

- Assessment of Cobargo-Bermagui Road and Wallaga Lake Road has been carried out by a qualified Traffic Control Selector for the traffic control requirements. Sight distance clearing is required at the junctions of 2001-1 Road and Cobargo-Bermagui Road, 2001-3 Road and Wallaga Lake Road, Spotted Gum Road and Wallaga Lake Road, 2001-5 Road and Wallaga Lake Road, 2001-8 Road and Wallaga Lake Road, Scenic Forest Drive (West) and Wallaga Lake Road, and 2001-11ext and Wallaga Lake Road. RTA Traffic Control at Work Sites TCP 83 attached to Rooding Plan HP_ED_2001_09 must be implemented.
- **Forests NSW Supervising Forester must be notified well in advance of any proposed road closures along Cobargo-Bermagui Road and Wallaga Lake Road. The duration of closure on Cobargo-Bermagui Road and Wallaga lake Road must be kept to a minimum to accommodate general public access on these roads.**
- Assessment of Cobargo-Bermagui Road and Wallaga Lake Road have been carried out by a qualified Traffic Control Selector for the traffic control requirements. RTA Traffic Control at Work Sites (TCP SE003 attached to this plan) must be implemented where haulage vehicles access these roads of feeder roads.
- Warning of timber harvesting operations must be **displayed 200 metres either side** of all thoroughfare road approaches leading to areas where harvesting operations are in progress.
- Cobargo-Bermagui Road and Wallaga lake Road are part of school bus route. Particular care must be exercised between 7:25 a.m. to 8:30 a.m. and 4:00 p.m. to 5:00 p.m. weekdays.

c Supervision of 'operator in training'

All new operators entering the work site must be inducted by the reading of the Harvesting Plan and the Site Safety Plan and hold all relevant licences and accreditations. No person is permitted to commence work unless they have been adequately trained and accredited. The training must give instruction in the performance of the work, instruct as to any dangers associated with that work and in any safety precautions which ought to be taken. Field and bush supervisors must ensure that an employer does not permit an untrained employee to operate, without competent supervision, any power driven tool, machine or equipment.

1.3 Site visitors

(a) Authorised

i) All authorised visitors to active timber harvesting/roading operations must wear the following personal protection equipment:

- an approved safety helmet
- suitable heavy duty footwear, with firm ankle support and non-slip soles
- approved high visibility clothing
- eye and ear protection if appropriate

ii) Immediately upon arrival at an active timber harvesting/roading operation, visitors must report to the Supervising Forest Officer (SFO) or bush supervisor who will determine points from which operations can be safely viewed.

iii) The following minimum safety distances must be observed while operations are active:

- Manual tree felling - at least 2 tree lengths (based on the tallest surrounding trees).
- Log dump operations – 12 metres from the working area (edge of dump perimeter)
- Mechanical harvesting – 2 tree lengths (based on the tallest surrounding trees) and when the driver is advised.
- Active snig track – at least 2 tree lengths (based on the tallest surrounding trees).
- Road & crossing maintenance &/or construction – at least 2 tree lengths (based on the tallest surrounding trees).

(b) Unauthorised

i) All unauthorised visitors to active timber harvesting/roading operations must not approach within 100 metres of a person operating timber haulage or harvesting equipment (clause 63(1)(a)) or interfere with such equipment (clause 63(1)(b)) Forestry Regulations 2009. In addition unauthorised visitors must wear the personal protection equipment outlined in 5.4(1)(i) above.

ii) Failure to observe the above guidelines will result in the following procedure:

- All operations to cease immediately.
- Unauthorised visitors to be advised that they are in contravention of clause 63(1)(a) or 63(1)(b) of Forestry Regulations 2009 and to leave the site or move outside the 100 metre restricted area immediately.
- Notify the Forests NSW Office of unauthorised visitors.

2: AREA IDENTIFICATION

Management Area: Eden.
State Forest: Bermagui. 142.
Management Section: Quaama.
Compartment(s) Number: 2001.
Event Id Number 14081

Table 1: Area of Plan by Logging Coupes (hectares)

Compartment: 2001		
Area of Compartment: 271.4 ha		
	Coupe	Net Area (ha)
Proposed for Harvesting	1	206.3
TOTAL		206.3

3: DESCRIPTION OF PROPOSAL

(a) Forest Stand condition/Harvesting History:

This compartment contains an early mature even aged overstorey with an understorey consisting of even aged regrowth and coppice regenerated from earlier operations. Spotted Gum dominates the stand with Stringybark, Silvertop Ash, Iron Bark, Bloodwood and Coastal Grey Box also being present. Compartment 2001 was clearfelled in the 1930's and then Timber Stand Improvement occurred in the 1950's. A sawlog harvesting operation was conducted between 1976 and 1978. A sawlog and minor product harvesting operation occurred in 1982, and between 1986 and 1988. A minor product harvesting operation occurred in 1990.

(b) Thinning Harvesting of Early Mature Regrowth Native Forest:

Early mature stands originating from past logging activities and wildfire events will be manually thinned under site specific silvicultural regimes aimed at removing high quality sawlogs, girders and poles whilst retaining quality future sawlogs and solid wood products. Thinning reduces the number of competing stems in a stand and concentrates the growth potential onto the remaining crop trees. This process will maintain the uniform age structure that characterises regrowth forests.

(c) Roadworks:

The road works required are those associated with this harvesting operation.

(d) Post-harvest Burning:

Post-harvest burning to reduce fuel loads and create a suitable seed bed may be carried out under prescribed conditions. A separate Burning Plan will be prepared for this operation. Post-harvest burning should be confined as far as practicable to the net harvest area. Site specific burning exclusions associated with flora, fauna, cultural heritage, riparian and other exclusion zones are explained within the relevant sections of this Harvest Plan and indicated on the Operational Map.

- To facilitate post-harvest burning of this compartment care must be taken to remove logging debris away from retained trees and to keep logging debris heaps less than 1m in height where possible.
- Where practicable, snig track patterns should be designed to double as bare earth control lines to prevent fire entering specified exclusion zones i.e. Cultural Heritage sites, Sepp14 Swamps, private freehold. Where this is not practical, the SFO is to assess the need for a bare earth break to be constructed close to the harvesting exclusion boundary and seek advice and approval from the Supervising Forester for the additional earth works.
- The burn area will be divided into hazard zones and prioritised depending on proximity to residential areas, topography, fuel loads and ecological values. Harvest scheduling will avoid areas adjacent to residential areas (primarily east of Wallaga Lake Road) during the summer months to minimise additional elevated fuel loads.

4: FOREST CONDITION & SILVICULTURE

4.1: FOREST TYPE:

Table 2: Compartment Forest Types

Compartment 2001	Forest Type (Res. Note 17)
	75 Spotted Gum – Yellow/White Stringybark

Reference: Baur GN "Forest Types in New South Wales" FC NSW Res. Note No. 17 2nd ed. 1989.
Pre-harvest Survey Report Compartment 2001, Bermagui State Forest, Forests NSW Southern Region: Eden, 2009.

4.2: SILVICULTURAL OBJECTIVES AND PRESCRIPTIONS:

(a) Silvicultural Prescriptions for Thinning Operations:

- The principal objective of this operation is to remove a representative range of species and size classes of the early mature stands containing high quality products (e.g. quota sawlogs, veneer, girders or poles), while minimising damage to retained stems. As a result of harvesting, canopy openings will promote growth of the retained regrowth and early mature component for future sawlog production. Care must be taken to avoid damage to the retained future crop. This will be achieved by "thinning across the range of size classes", to reduce the number of competing stems in the stand and to concentrate growth potential onto the remaining final crop trees.
- Within the FMZ 4 area bounded by Wallaga Lake Road and Scenic Forest Drive East (i.e. Bermagui Dirt Surfers Bike Track area) no more than 40% of the standing basal area is to be removed.

- Within the remaining FMZ 4 no more than 60% of the standing basal area is to be removed.
- The current standing basal area estimate for Compartment 2001 is 25m²/ha.
- Tree species retained for future product must be representative of the stand prior to harvesting and have a healthy crown with good economic growth and seed producing potential.
- Damage to regrowth and advanced regrowth must be minimised where practicable and safe to do so.
- Retained stems should represent the range of species and size classes of the early mature stands and be of suitable form.
- Volumes obtained from areas harvested in the vicinity of Compartment 2001, estimate the merchantable sawlog volume to be removed is: 26 m³/ha.
- Where achievable thinning should aim to retain vigorous stems to grow on for a subsequent cutting cycle capable of producing a net merchantable increment.
- A minimum of four (4) trees per hectare, in the dominant or co-dominant class, with suitable crowns, shall be retained for seed production. These should include retained habitat and future sawlog trees.
- Where safe to do so, seed trees are to be retained around each log dump to assist regeneration of the disturbed area. The number of retained seed trees will be determined by the SFO based on the size of the log dump, but will generally be 3 - 5 trees with healthy, seed producing crowns. These trees are not additional to those specified in the condition above.
- To minimise damage to advanced regrowth areas that contain one or two scattered early mature trees should be excluded from harvesting. These trees are not additional to those specified in the condition above.
- Subject to occupational health and safety considerations, directional felling techniques are to be utilised to minimise damage to retained trees, to avoid hang-ups and to maintain values of reserve areas and drainage lines.

5: SPECIAL REQUIREMENT AREAS

(a) Forest Management Zone Classification:

Forest Management Zone 3aC Exclusion (Catchment 50m width from mean high water mark) is located adjacent to Black Lagoon (Batemans Marine Park) and Narira Creek as indicated on the Harvesting Plan Operational Map.

- All harvesting activities must be excluded from this zone.
- Post log burning is to be excluded from this area as far as is practicable.
- Where it is considered likely that fire applied externally will enter this exclusion zone through natural spread, a carefully planned ignition pattern and sequence should be applied.
- Existing snig tracks, roads, moisture differentials, ignition patterns and constructed hand trails should be utilised to avoid fire encroachment into this zone.

Forest Management Zone 3bC-Catchment Modified Prescriptions 50% Canopy Retention (50m width) is located adjacent to the above FMZ3aC 50m exclusion zone as indicated on the Harvesting Plan Operational Map. The Forest Management Zone 3bC –Catchment Modified Prescriptions 50% Canopy Retention area within this compartment forms part of the net harvestable area for this harvesting operation. Harvesting operations within this area must be conducted under the following prescriptions:

- A minimum of 50% canopy retention must be achieved across the entire area delineated as FMZ 3bC (Catchment) on the Harvesting Plan Operational Map. This canopy retention is not additional to the tree retention prescriptions included in this plan. Additionally, the harvested materials are to be comprised of sawlogs where possible.
- Walkover extraction techniques must be used in this zone area instead of snig track construction.
- Logging debris in particular tree heads must be distributed across the zone and not windrowed.
- Post log burning is to be excluded from this area as far as is practicable.
- Where practicable, snig track patterns within the FMZ 4: General Management should be designed to double as bare earth control lines to prevent fire entering the FMZ 3bC. Where this is not practical, the SFO is to assess the need for a bare earth break to be constructed close to the harvesting exclusion boundary and seek advice and approval from the Supervising Forest Officer for the additional earth works.
- Where it is considered likely that fire applied externally will enter this exclusion zone through natural spread, a carefully planned ignition pattern and sequence should be applied.
- Existing snig tracks, roads, moisture differentials, ignition patterns and constructed hand trails should be utilised to avoid fire encroachment into this zone.

Forest Management Zone 3bV (Visual 50m width) is located along the northern side of Cobargo–Bermagui Road and the enter western side and approx 90 percent of the eastern side of Wallaga Lake Road as indicated on the Harvesting Plan Operational Map. Forest Management Zone 3bV (Visual variable width) is located in the north-western section (i.e. west of Dump P) of Compartment 2001, west of Dump S and south-west of Dump M as indicated on the Harvesting Plan Operational Map. Forest Management Zone 3bV is located over the entire area to the east of Dump C. The Forest Management Zone 3bV (Visual) areas within this compartment forms part of the net harvestable area for this harvesting operation. Harvesting operations within this area must be conducted under the following prescriptions:

FMZ 3bV (Visual) to the east of Dump C as delineated on the Harvesting Plan Operational Map:

- The extent of harvesting in this area will be determined in consultation with the local community.
- As a general rule, no more than 35% of the basal area should be removed from this zone.
- Trees must be marked for removal within this area by the SFO. Trees targeted to be removed from this area are to be comprised of "High Quality products"
- A proportion of the larger diameter trees should be retained and evenly spaced throughout this area.
- To facilitate burning within this area windrowing of fallen trees heads should be avoided wherever practical. Tree heads, where safe to do so, should be cut and compacted to the ground up to reduce elevated fuel loads.

No more than 45% of the basal area should be removed across the remaining area delineated as FMZ 3bV (Visual) on the Harvesting Plan Operational Map. This canopy retention is not additional to the tree retention prescriptions included in this plan. Additionally, the harvested materials are to be comprised of sawlogs where possible.

- The visual impact of harvesting operations within this compartment must be monitored twice weekly by the SFO to ensure that the canopy retention prescriptions are achieving the desired outcome of protecting the visual values of this zone. The SFO is to utilise vantage points along the Cobargo-Bermagui Road, Wallaga Lake Road and for the section of 3bV in the north-western section of this compartment, Neilson Property and vantage points from Fairhaven. The SFO is required to increase the level of canopy retention where current prescriptions are not adequately maintaining the visual values of this area, but under no conditions is the level of canopy retention to be dropped below the prescriptions set out in this Harvesting Plan.

Forest Management Zone 7 (Non Forestry Use: Overhead Power Lines) is located on sections of the eastern boundary and north-eastern section of Compartment 2001 as indicated on the Harvesting Plan Operational Map (Also refer to Section G Other Special Prescription Areas).

The remaining area within this compartment is classified FMZ 4 (general management).

(b) Critical Boundaries:

Freehold property is located on the entire northern and eastern boundaries of Compartment 2001, as indicated on the Harvesting Plan Operational Map.

- The freehold property boundary must not be crossed during harvesting operations.
- Ensure no build-up of fuel within 10m of the freehold property boundary in order to assist post-harvesting burning.
- **Where practicable, extraction tracks should be constructed close to the boundaries of the harvested area to act as bare earth breaks around post-harvesting burns. Where this is not practical, the SFO is to assess the need for a bare earth break to be constructed close to harvesting boundaries and, where required the SFO should advise the Operations Forester Eden of this need and estimated works involved. On approval from the Operations Forester Eden the SFO shall engage the contractor to undertake the work concurrent with harvesting, with Forests NSW to be billed appropriately. Where the harvesting configuration does not have suitable machinery to undertake break works, the Operations Supervisor Eden needs to be notified to arrange alternative means of break construction.**
- Consideration must be given to fuel moisture differentials, prevailing winds and ignition patterns.

To facilitate post harvest burning consideration should be taken in the placement of bare mineral earth breaks in the following areas:

- The area to the east of Log Dump C in particular the eastern and northern extremities of the harvested area only.
- The northern compartment boundary north of Dumps O and P.
- Where reasonable and practicable adjacent to the compartment boundary of the non harvest area to the East of Dump J. Prior to this earth break being constructed the operation Forester Eden is to be notified and consulted in regards to placement of the break. Note a mineral earth break must not be constructed adjacent to the SEPP 14 Swamp exclusion zone.

(c) Research and Inventory Plots:

Nil.

(d) Recreational Values:

Bermagui Dirt Surfers Club Mountain Bike Track (Occupational Permit No.34196) is located in the eastern section bounded by Scenic Forest Drive East and Wallaga Lake Road as indicated on the Bermagui Dirt Surfers Bike Track Map. The intent of FNSW is to have this area available to be used by club member as soon as it is safe following the harvesting operations. To facilitate FNSW intent harvesting operations within this area must be conducted under the following prescriptions:

- Within the FMZ 4 area bounded by Wallaga Lake Road and Scenic Forest Drive East (i.e. Bermagui Dirt Surfers Bike Track area) no more than 40% of the standing basal area is to be removed.
- To minimise damage to the bike track directional felling is to occur where safe to do so.
- Where practicable, snig tracks should be constructed in such away to minimising damage to the bike track.
- Where practicable walk over techniques should be used where crossing of the bike track is required.
- The bike track must be progressively tidied up at the time of harvesting.
- Logging debris must be pulled away from the track surface.
- Where safe to do so obvious overhead hazards are to be removed (i.e. dangerous trees, hang-ups, widow makers). Where hazards cannot be safely removed the location is to be documented in the SFO harvesting plan diary notes and the hazard identified in the field with "Ø↑" as per FNSW Safety Standard 1.3.9.
- Install rollover drains where part of the track is to be used as a snig track.
- Standard EPL conditions are to be applied on sections of road that are also part of the bike track.
- The immediate car park area is to be excluded from forestry activities.
- Wooden bridges, metal grates and wooden walk ways are not to be damaged by forestry activities including burning. Where harvesting occurs within 100m of these items the SFO is to inspect and record the condition of the wooden bridges, metal grates, and wooden walk ways prior to harvesting.
- Special consideration must be given to snig track configuration and harvesting in the vicinity of Switch Back Trail (as shown on the Bermagui Dirt Surfers Operational Map) to ensure this section of track is not damaged.
- A risk assessment to determine re-opening of the bike track will be conducted with representatives of the Bermagui Dirt Surfers Club soon after harvesting operations have been completed in that area.
- Recreational access to the forest will be restricted from the general forest area during active harvesting operations. Access following harvesting may be limited for a period of time due to safety considerations.

Lilly Pilly Walking Track is located in the western section of Compartment 2001. The intent of FNSW is to have this area available to be used by the public as soon as it is safe following the harvesting operations. To facilitate FNSW intent harvesting operations within this area must be conducted under the following prescriptions:

- To minimise damage to the walking track directional felling is to occur where safe to do so.
- Where practicable, snig tracks should be constructed in such away to minimising damage to the walking track.
- Where practicable walk over techniques should be used where crossing of the walking track is required.
- The walking track must be progressively tidied up at the time of harvesting.
- Logging debris must be pulled away from the track surface.
- Where safe to do so obvious overhead hazards are to be removed (i.e. dangerous trees, hang-ups, widow makers). Where hazards cannot be safely removed the location is to be documented in the SFO harvesting plan diary notes and the hazard identified in the field with “Ø↑” as per FNSW Safety Standard 1.3.9.
- Install rollover drains where part of the track is to be used as a snig track.
- Recreational access to the forest will be restricted from the general forest area during active harvesting operations. Access following harvesting may be limited for a period of time due to safety considerations.

(e) Occupational Permits and Grazing Permits:

Bermagui Dirt Surfers Club Mountain Bike Track (Occupational Permit No.34196) is located in the eastern section bounded by Scenic Forest Drive East and Wallaga Lake Road as indicated on the Bermagui Dirt Surfers Bike Track Map. See Section (5d) Recreational Values above for management prescriptions.

Bega Valley Shire Council has an Occupational Permit (No. 13180) within Compartment 2001. This permit covers the area of land where the underground pipeline is located, as indicated on the Harvesting Plan Operational Map. See (5g) Other Special Prescription Areas below for management prescriptions.

(f) Crown Leases:

Nil.

(g) Other Special Prescription Areas:

Visual

The visual integrity of this compartment should be maintained. Harvesting operations within this area must be conducted under the prescriptions stated under Section 5a Forest Management Zone Classification.

- The visual impact of harvesting operations within this compartment must be monitored twice weekly by the SFO to ensure that the canopy retention prescriptions are achieving the desired outcome of protecting the visual values of this compartment. The SFO is to utilise vantage points within the Bermagui Township, along Wallaga Lake Road, Cobargo-Bermagui Road Scenic Forest Drive East and from the township of Fairhaven. The SFO is required to increase the level of canopy retention where current prescriptions are not adequately maintaining the visual values of this area, but under no conditions is the level of canopy retention to be dropped below the prescriptions set out in this Harvesting Plan.

Under ground cables, water mains and reservoirs

A Telstra underground cable (average depth 500mm) is located adjacent to Cobargo-Bermagui Road in the south-western corner, the south-western mid section and south-west of Dump I of this compartment as indicated on the Harvesting Plan Operational Map (Also refer to the attached Roding Plan).

A Telstra underground cable (average depth 500mm) is located in the area to the east and north-east of Dump C, and travels along the entire eastern side of Scenic Forest Drive East as indicated on the Harvesting Plan Operational Map (Also refer to the attached Roding Plan).
Note: Dual Telstra cables are located in the area to the east of Dump C, north of Dump I, west of Dump K and south-east of Dump L.

A Telstra Optic Fibre Cable is located in the area to the east and north-east of Dump C, and travels along the eastern side of Scenic Forest Drive East until approximately 2001-10 Road where the optic fibre cable goes under Scenic Forest Drive East and travels in a north westerly direction to Wallaga Lake Road. The cable then crosses under Wallaga Lake Road and travels in a north-easterly direction on the western side of Wallaga Lake Road as indicated on the Harvesting Plan Operational Map (Also refer to the attached Roding Plan).

Note: The optic fibre cable easement is located within the overhead power line and Bega Valley Shire Council (BVSC) underground water pipe easements (western side of Wallaga Lake Road).

The actual location of the cables in the field was located by Telstra Qualified Cable Locators and is identified in the field by cable markers and yellow/pink/black striped flagging tape.

- Where the Telstra cables are to be crossed by new roads, extraction tracks or road drainage is to be installed in the vicinity of the cables, FNSW and the harvesting contractor must follow Telstra “**Duty of Care**” as per Telstra requirements attached to this harvesting plan. This means wherever a new road (2001-8 Road, 2001-9 Road, 2001-10 Road), extraction track or road drainage structure is to be constructed (i.e. rubber flaps, mitre drains etc) the person responsible for conducting the work must dig down to locate the cable depth before establishing the new road, extraction track or road drainage structure. This is to be carried out with a shovel or hand tools and **NOT a BACKHOE or MACHINERY** so digging is controlled close to cables.
- Care must be taken to avoid damage to these cable lines. No ground disturbance is allowed at the cable line area and within 5.0 m of the lines.
- Where the Telstra Underground Cables and Optic Fibre Cable are located under existing roads (2001-1 Road, 2001-3 Road and Scenic Forest Drive (East & West) the road surface is to be gravelled or built up to a minimum depth of 600mm at that point and as far as practicable minimise brushing off of the surface and avoid digging into the ground within 10m on either side of the cable.
- Care must be taken in placement of Log Dumps I, J, K, L, M, O and W the extraction pattern to Log Dumps C, I, J, K, L, M and O to avoid causing damage to these cable lines.
- Care must be taken in the re-opening of Crossing C4 and the snigging pattern from the area south of C4 to Dump M to avoid causing damage to the Optic Fibre cable line.
- No pushing of trees is allowed within 5.0m of the Telstra cable lines. All trees within this vicinity must be manually felled, where it is safe to do so.

A BVSC underground water main is located on the northern side of Cobargo-Bermagui Road for approx 120m west of the junction of Bermagui-Cobargo Road and Wallaga Lake Road. The underground water main is located on the western side of Wallaga Lake Road for its entire length as indicated on the Harvesting Plan Operational Map. The actual location of the pipe is identified in the field by blue tipped concrete posts.

Note: The BVSC underground water main easement on the western side of Wallaga Lake Road is located within the overhead power line and Telstra's underground cable and optic fibre cable easement.

- Care must be taken to avoid damage to this water pipe. No ground disturbance is allowed at this water pipe area and within 5.0m of this line.
- Care must be taken in the construction of 2001-8 Road. Where 2001-8 Road crosses the water main the road surface is to be built up to a minimum depth of 600mm at that point and as far as practicable minimise brushing off of the surface and avoid digging into the ground within 10m on either side of the water main.
- Care must be taken when constructing access onto Wallaga Lake Road off 2001-3 Road where 2001-3 Road crosses the water main the road surface is to be built up to a minimum depth of 600mm at that point. Where 2001-3 Road travels over/along the water main the road surface is to be inspected twice weekly to ensure road sinkage/compaction is not occurring. In the event sinkage/compaction occurs the road surface is to be built up to a minimum depth of 600mm at that point and gravelled. As far as practicable minimise brushing off of the road surface and avoid digging into the ground within 10m on either side of the water main.
- Where the BVSC underground water main is located under existing roads (Spotted Gum Road, Scenic Forest Drive West the road surface is to be gravelled or built up to a minimum depth of 600mm at that point and as far as practicable minimise brushing off of the surface and avoid digging into the ground within 10m on either side of the cable.
- Care must be taken in placement of Log Dumps M and O and the extraction pattern to Log Dumps M, O, Q and U to avoid causing damage to this water pipe.
- Care must be taken in the re-opening of Crossing C4 and the snigging pattern from the area south of C4 to Dump M to avoid causing damage to the Optic Fibre cable line.
- No pushing of trees is allowed within 5.0m of the water pipe. All trees within this vicinity must be manually felled, where it is safe to do so.

A privately owned underground water main is located to the north-east of Neilsons Road as indicated on the Harvesting Plan Operational Map. The actual location of the pipe is identified in the field by pink and black flagging tape.

- Care must be taken to avoid damage to this water pipe. No ground disturbance is allowed at this water pipe area and within 5.0m of this line.
- Where the privately owned underground water main is located under 2001-4 Road the road surface is to be gravelled or built up to a minimum depth of 600mm at that point and as far as practicable minimise brushing off of the surface and avoid digging into the ground within 10m on either side of the cable.
- Care must be taken in the extraction pattern to Log Dumps O and N to avoid causing damage to this water pipe.

FNSW underground water tank covered by wooden slabs is located within Compartment 2001 as indicated on the Harvesting Plan Operational Map.

- This tank (and its respective signs) are not to be damaged by forestry activities.
- On completion of the operation the mitre drains leading to the underground tanks are to be left in efficient working order.

Overhead Power lines (FMZ7)

Overhead power lines are located north-east of Dump C. The overhead power lines travel along the eastern side of Scenic Forest Drive East until approximately 2001-10 Road where the overhead power lines goes over Scenic Forest Drive East and travels in a north-westerly direction to Wallaga Lake Road. The overhead power lines then crosses over Wallaga Lake Road and travels in a north-easterly direction on the western side of Wallaga Lake Road as indicated on the Harvesting Plan Operational Map. Note: The power line easement on the western side of Wallaga Lake Road is located within the optic fibre cable and BVSC underground water pipe easements.

Dust and noise:

- Where residential housing is located adjacent to the compartment boundary or within close proximity to log dumps, the contractor must restrict loud noises (i.e. chainsaw, dozers etc) to between 7:30am and 5:00pm. Operating close to housing during the weekend should be avoided unless prior consultation has occurred.
- Where log haulage routes pass close to rural housing along natural surface/gravel roads dust and noise must be minimised to the greatest extent practicable. Trucks should reduce speed, restrict use to daylight hours and minimise the use of engine brakes through these areas.

Fence lines and Gate

A fence line is located in the area between Scenic Forest Drive West and Neilsons Road. Fences are also located on all boundaries that adjoin private freehold of Compartment 2001 as indicated on the Harvesting Plan Operational Map.

- Where harvesting comes within 100m of the fence line the SFO is to inspect the fence line and record the condition of the fence prior to harvesting.
- Any damage caused to these fences as a direct result of harvesting must be paid for by the contractor.
- Where the contractor needs to cut the fence, between Scenic Forest Drive West and Neilsons Road, in order to extract wood authorisation must be first obtained from the Supervising Forester. In the event that authorisation is given the fence must be repaired to its original condition.

A gate is located where the above fence line crosses 2001-4 Road.

- In the event this gate needs to be removed authorisation must be first obtained from the Supervising Forester. On completion of the operation this gate must be reinstated to its original condition.

Road closures

Scenic Forest Drive East, Neilson Road (unlicensed) and Rays Road (unlicensed) are used to access private freehold.

- In the event Scenic Forest Drive East, Neilson Road and Rays Road are closed during harvesting. The road closures should be restricted between the hours of 10am and 2:30pm to accommodate private access on these roads unless prior consultation has occurred with the private freehold owners.
- The duration of closure on Scenic Forest Drive East, Neilson Road and Rays Road must be kept to a minimum to accommodate private access on this road.
- Forests NSW Supervising Forester must be notified well in advance of any proposed road closures along Scenic Forest Drive East, Neilson Road and Rays Road. The duration of closure on Scenic Forest Drive East, Neilson Road and Rays Road must be kept to a minimum to accommodate general public access on these roads.

Outstanding Trees

Compartment 2001 has the potential to contain "Outstanding Trees" particularly *C. maculata* (Spotted Gum), *E. botryoides* (Southern Mahogany), *E. bosistoana* (Coastal Grey Box), *Acmena smithii* (Lilly Pilly), and *Backhousia myrtifolia* (Iron wood). Trees that are significantly larger than the average stand diameter and height should be considered for retention. The tree/s must be left standing until the SFO or Supervising Forester inspects the tree/s to determine if it is an outstanding tree. The tree is to be retained if determined to be an "Outstanding Tree" and placed on the "Outstanding Tree" data base. Note *A. smithii* and *B. myrtifolia* are rainforest species and excluded from harvesting however if a "potential outstanding trees" is determined it should still be placed on the "Outstanding Tree" data base.

- All tree greater than or equal to 200cm must be retained.

6: CULTURAL HERITAGE

(a) Cultural Heritage:

- All relevant representatives have been consulted and inspected Compartment 2001.

7: FLORA AND FAUNA CONDITIONS

7.1: FLORA AND FAUNA GENERAL CONDITIONS.

(a) Tree Retention for Habitat and Food Resources:

Hollow-bearing Trees:

- A minimum of six hollow-bearing live trees per hectare must be retained in “**high**” quality habitat forest, a minimum of four hollow-bearing trees per hectare must be retained in “**moderate**” quality habitat forest and a minimum of two hollow-bearing trees per hectare must be retained in “**low**” (Spotted Gum) quality habitat forest. The determination of “habitat quality classes” will be made by the SFO during tree-marking in the field.
- Where this density is not available, the existing hollow-bearing trees must be retained plus additional trees must be retained to meet the requirement of six per hectare in “high” quality habitat forest, four per hectare in “moderate” quality habitat forest and two per hectare in “low” quality habitat forest. The additional trees retained must be those trees of the next oldest age class available which are likely to persist longer than the oldest trees and are likely to become hollow-bearing trees.
- “Hollow-bearing tree” means a tree where the base, trunk or limbs contain hollows, holes and cavities that have formed as a result of decay, injury or other damage. Such hollows may not be visible from the ground, but may be apparent from the presence of deformities such as burls, protuberances or broken limbs, or where it is apparent the head of the tree has been lost or broken off.
- 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 that are most suitable for the threatened species known or likely to occur in the area.
- Trees retained outside the net logging area must not be counted as hollow-bearing trees. Trees retained within unlogged parts of the net harvest area that meet the definition of a hollow-bearing tree, should be marked and counted as hollow-bearing trees.
- Hollow-bearing trees must be scattered throughout the net logging area.

Recruitment Trees:

- A minimum of six recruitment trees per hectare must be retained in “**high**” quality habitat forest, a minimum of four recruitment trees per hectare must be retained in “**moderate**” quality habitat forest and a minimum of two recruitment trees per hectare must be retained in “**low**” quality habitat forest.
- Retained recruitment trees must be selected from trees of the next oldest age class available which are likely to persist longer than the oldest trees and are, or are likely to become, hollow-bearing trees.
- Retained recruitment trees must represent the range of tree species that occur in the area. Preference should be given to selecting those species or trees that are most suitable for the threatened species known or likely to occur in the area.
- Trees retained outside the net logging area must not be counted as recruitment trees. Trees retained within unlogged parts of the net logging area that meet the definition of recruitment tree, should be marked and counted as habitat trees.
- Recruitment trees must be scattered throughout the net logging area.

Dead Stags:

- Five dead stags must be retained per hectare of net logging area where it is safe to do so. If there are less than five stags per hectare, then all stags should be retained where it is safe to do so.
- Stags must not be counted as hollow-bearing trees or recruitment trees.

Significant Food Resources:

- Where more than 30 crushed *Allocasuarina* seed cones have been found beneath an individual of *Allocasuarina* spp., indicating intensive use by the Glossy Black-Cockatoo, the tree must be retained and protected from specified forestry activities.
- Specified forestry activities should be conducted in such a manner as to minimise damage to stands where *Allocasuarina* spp., dominate the canopy.
- All Yellow-bellied Glider and Squirrel Glider sap feed trees must be retained. Yellow-bellied Glider sap feed trees are trees with "V" notch feeding scars. Retained sap feed trees should be counted as hollow-bearing or recruitment trees.
- Damage to flowering or fruiting banksias and *xanthorrhoea* spp should be avoided during forestry operations.

Protection of Hollow-bearing Trees, Recruitment Trees, and Retained Food Trees:

Specified forestry activities and post-logging burning must aim to minimise damage to hollow-bearing trees, recruitment trees, and retained food trees. The potential for damage should be minimised by techniques of directional felling, where it is safe to do so. Logging debris must be removed or flattened where it has accumulated to a height of more than one (1) metre within 5 m of live retained trees, provided it is safe to do so.

(b) Stream Exclusion Zones:

Stream exclusion zones must be applied to the first, second, third, fourth and higher order streams as indicated on the Harvesting Plan Operational Map.

- Post log burns must be excluded from stream exclusion zones as far as practical. Where it is considered likely that fire applied externally will enter these exclusion zones through natural spread, a carefully planned ignition pattern and sequence should be applied. Consideration must be given to fuel moisture differentials, prevailing winds and ignition patterns.

(c) Ridge and Headwater Habitat: Nil.

(d) Rainforest areas:

An area of indicative rainforest is located within Compartment 2002. The associated 20m exclusion zone extends into Compartment 2001 as indicated on the Harvesting Plan Operational Map (west of Log Dump W). The actual location of rainforest areas as delineated in the Harvesting Plan Operational Map was determined using API. Field verification will be conducted by the SFO during supervision of the harvesting operation to determine the extent of KB rainforest floristic assemblages.

- Specified forestry activities including burning must be excluded from rainforest areas and the corresponding 20m exclusion zone.
- For post log burning purposes consideration must be given to fuel moisture differentials, prevailing winds and ignition patterns.

(e) Rare Old Growth Forest Communities: Nil.

(f) Rare Forest Ecosystems: Nil.

(g) Heath and Scrub: Nil.

(h) Rocky Outcrop and Cliffs: Nil.

(i) Wetlands:

Three areas of SEPP14 swamps occur to the east of Compartment 2001, only one of these SEPP14 swamps borders Compartment 2001 as indicated on the Harvesting Plan Operational Map.

- Specified forestry activities including post harvest burning must be excluded from this SEPP14 swamp and the corresponding 40m exclusion zone.
- For post log burning purposes consideration must be given to fuel moisture differentials, prevailing winds and ignition patterns.
- Existing snig tracks, roads, moisture differentials, ignition patterns and constructed hand trails should be utilised to avoid fire encroachment into this exclusion zone

7.2: FLORA AND FAUNA SPECIFIC CONDITIONS.

(a) Rare or Threatened Flora Species: Nil.

(b) Schedule 1 and 2 Fauna Species Prescriptions:

Yellow-bellied Gliders

A Yellow-bellied Glider feed tree record (Gr 235480/5968068) is located within Compartment 2001 as indicated on the Harvesting Plan Operational Map.

The following conditions shall apply for Yellow Bellied Gliders;

- A 50 metre radius exclusion zone must be implemented around Yellow-bellied Glider dens.
- All Yellow-bellied Glider sap feed trees must be retained. All Yellow-bellied Glider sap feed trees must be marked for retention.

- Where there is a record of a Yellow-bellied Glider within the compartment, or within 100m outside the boundary of the compartment, the following must apply:
Within 100m radius (3 ha) around each retained Yellow-bellied Glider sap feed tree, observation or den site record, 15 feed trees must be retained. Yellow-bellied glider sap feed trees must not be counted towards these 15 trees.
- Within a 200m radius of a yellow-bellied Glider call detection site record, 15 trees must be retained.
- Mature and late mature trees must be retained as feed trees where these are available. The retained feed trees should be of the same species as the identified sap feed tree, or be a tree species recognised as a sap feed tree in the area (*Corymbia maculate*, *C. gummifera*, *Eucalyptus botryoides*, *E. cypellocarpa*, *E. viminalis*, and *E. angophoroides*). The feed trees retained must be marked for retention. Note: habitat trees and recruitment trees may be counted towards the 15 trees as long as they have good crown development, minimal butt damage, should not be suppressed and be of the preferred species (as per above).

Koala:

Compartment 2001 was surveyed for koalas as part of the Regularised Grid Based Sampling Protocol (GRIDSAT). This survey was conducted by the Department of Environment and Climate Change in conjunction with FNSW and community members. No evidence of koalas was located in Compartment 2001 during the GRIDSAT survey or from previous reliable surveys.

- In the event that a koala is detected during harvesting the SFO must be notified immediately. Harvesting must cease immediately in the general area of the record and the Supervising Forester notified. Harvesting must not recommence in the general area until further instructions have been received from the Supervising Forester.
- In the event that woollybutt dominated stands are detected during harvesting the Supervising Forester via the SFO must be notified immediately. Harvesting must avoid the woollybutt dominated stand until further instructions have been received from the Supervising Forester. Forest type mapping indicates that woollybutt dominated stands are not present in this compartment.

Historic Sooty Owl, Masked Owl, Powerful Owl, Barking Owl, Bush Stone-Curlew and Square-tailed Kite records are located within the vicinity of Compartment 2001. Care should be taken during mark up to identify possible roost and nest sites.

- 50m radius exclusion zones are to be placed around Powerful Owl, Masked Owl, Sooty Owl and Barking Owl nest sites.
- 30m radius exclusion zones are to be placed around Powerful Owl, Masked Owl, Sooty Owl and Barking Owl roost sites.
- 100m radius exclusion zones are to be placed around Bush Stone-Curlew and Square-tailed kite nest sites.

Swift Parrots:

Swift parrots have been observed within Compartment 2001

The following conditions shall apply for Swift parrots:

- At least 5 eucalypt feed trees per hectare within the net harvest area must be retained and marked for retention.
- Where retained eucalypt feed trees also meet the requirements of hollow-bearing or recruitment trees, the retained eucalypt feed tree can be counted as a hollow-bearing or recruitment tree.
- Where a Swift parrot is observed feeding the tree in which it is feeding must be retained.
- Swift parrots feeding was observed at GR 235623/5966363, 235615/5966363, 235601/5966385, 235689/5966595, 235726/5966574, 235754/5966595, 235791/5966583, 236207/5967222 and 235902/5967351. These observed feed trees have been marked for retention.

No other Schedule 1 or 2 species that require specific prescription for the proposed operation were detected during pre-harvest surveys or from existing records within the planning unit.

Licensee and supervisory staff must immediately report any sightings of Schedule 1 and 2 species to the Supervising Forester.

8: SOIL EROSION AND WATER POLLUTION CONTROL

Table 3: E.P.L. Site and Soil Assessment Details

	Compartment 2001
Inherent Hazard Class	Two (2).
Parent Rock Type	Ordovician Metasediments.
Dispersible Soils	Nil.
Mass Movement	Nil.
Seasonality Constraints	Nil.
Slope limits for Harvesting	30 degrees.
Slope limits for Extraction Track construction	25 degrees.



8.1: DRAINAGE FEATURE PROTECTION.**Table 4: Minimum Filterstrip, Stream Exclusion Zones and Drainage Depression Buffer Widths for Drainage Features in Native Forests**

Stream Order	Drainage Line Filterstrip Width I.H.L. 2 (m)	Stream Exclusion Zones Width (m)	Drainage Depression Buffer Width (m)
Unmapped features	10	Nil	5
Mapped 1st Order	15	10	5
Mapped 2nd Order	20	20	5
Mapped 3rd Order	25	30	5
Mapped 4th & higher	25	50	5

- Where filterstrips and stream exclusion zones overlap, the more stringent (widest) condition must apply.

8.2: ROADS AND CROSSINGS.

All new roads must be constructed in accordance with the location marked in the field and as indicated on the Harvesting Plan Operational Map. Reference must also be made to the Roding Plan in Appendix 1, attached to this harvesting plan.

(a) Wet Weather Controls:

Harvesting operations may be conducted throughout the year subject to the application of normal wet weather closure procedures and restrictions to wet weather areas.

(b) Order of working:

The order of working will be progressive harvesting within Coupe 1 of Compartment 2001 subject to wet weather constraints and as directed by the SFO. The contractor must not leave a designated working area (log dump or as specified by the SFO) until approval has been given by the SFO.

- Harvest scheduling will avoid areas adjacent to residential areas (primarily east of Wallaga Lake Road) during the summer months to minimise additional elevated fuel loads.

(c) Downhill Snigging:

Downhill snigging may be required within Compartment 2001.

Where downhill snig tracks connect directly with a log dump the following must be used:

- Snig tracks must enter the log dump from the side or below ; or
- A drainage structure must be in place immediately before a snig track enters the log dump at the end of each day's operation.

8.3: LOG DUMPS.**(a) Location:**

Location of log dumps is indicated on Harvesting Plan Operational Map.

Log dump size must be kept to a minimum.

- Ground disturbance whilst constructing and working Log Dump L should be kept to a minimum. To facilitate post harvest burning logging debris is to be spread out and flattened over the dump site and tree heads are to be cut up to reduce elevated fuel loads. Logging debris must not be accumulated within 5m of the private freehold boundary.

8.4: EXTRACTION TRACKS.

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

9: TREE-MARKING CODE

As required under the terms of the **Threatened Species Licence** and **IFOA**, tree marking in Southern Region - Eden (EMA) must be in accordance with the following state-wide Harvest Marking Code:

Table 5: Harvest Marking Code

Description	Symbol
A. STANDARD MARKINGS/SYMBOLS	
MARKINGS/SYMBOLS THAT DELIVER KEY REQUIREMENTS ON A STATEWIDE BASIS	
Compartment boundary Where not defined by clear features eg. Road, trail, creek	"O" or Yellow tape
Exclusion zone (eg. Old Growth or Species Exclusion Zone) Line not to be crossed or disturbed by fallers or harvesting machinery at any time	Three horizontal lines or rings Or Blue tape
Edge of net harvest area (eg unmerchantable) Retained trees and critical boundaries to be marked within 30m beyond the boundary Tree heads may fall across the line, provided they comply with boundary and tree retention rules (eg 5m debris)	"α"
Buffer Zone Areas where disturbance by harvesting is allowed only under specified conditions	Two horizontal lines or rings (with indication of distance if required)
Extraction System Road/Track line	<u>"I" or white tape</u>
Dump site with optional dump number reference	"D" or red tape
Approved crossing site	"b"
Slope angle indication (commences here)	eg "25°"
Trees To Be Removed Individual tree	". " or dots
Directional felling mark	"Ç" over ". "
Retained Trees Retained trees not to be removed or damaged (eg grower)	One horizontal line or ring
Habitat tree, for any flora or fauna.	<u>"H"</u>
Eucalypt feed tree	<u>"E"</u>
Recruitment tree	"R"
Cancellation Mark Mark to formally cancel previous marks	"X"
Identified Hazard	"Æ- "or

Description	Symbol
Arrow to indicate direction of hazard or Tape out hazard	'Danger' tape
SPECIALIST MARKINGS/SYMBOLS Additional specialist Markings/Symbols that may be used in place of, or additional to standard markings to highlight particular issues as required by regulators, Forests NSW, or others.	
Flora Fauna Features Retained Tree	One horizontal line or ring
Glossy black cockatoo feed tree, record or nest	<i>PLUS</i> "GB"
Owl nest and/or roost	"OWL"
Nest (raptors, parrots etc.)	"N"
Yellow-bellied Glider v-notch feed tree or record	"Y"
Squirrel Glider sap feed tree, record or nest	"SG"
Koala high use tree	"K"
Koala retained feed tree	One horizontal line or ring
Description	Symbol
Frog record	"F"
Smoky Mouse record	"SM"
Quoll record; latrine; den	"Q"; "QL"; "QD"
Bat record; roost	"B"; "BR"
Phascogale den	"PD"
Threatened plant	"TP"
Other Markings	
Private property	"PP"
Cave, tunnel or mineshaft	"CTM"
Drainage Depression Centre line	"DD"
Coupe Boundary	Blue Ring
Filterstrips/stream exclusion zones	Three horizontal lines or Rings Or Pink tape

Any tree/feature marking will conform to this code. Items to be marked in the field will be specified in the Harvest Plan

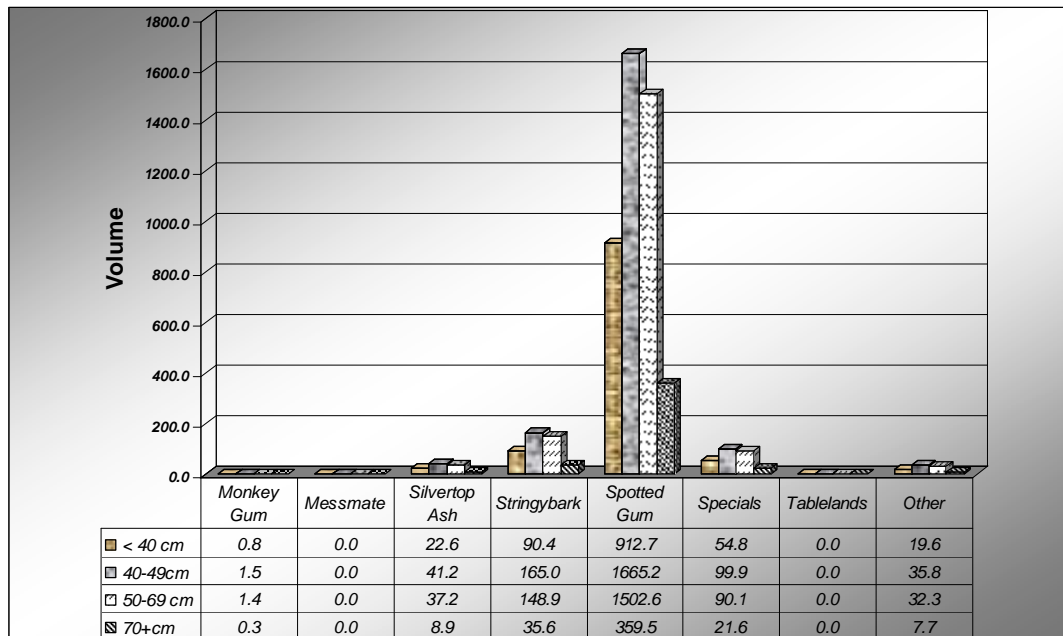
10: YIELD ESTIMATES

Table 6: Operational Inventory Yield Estimate Information – Total Stand Component

Compartment No.	Sawlog Volume (m ³ / ha)	Pulpwood Volume (t / ha)
2001	26	11

Source: Volumes obtained from surrounding compartments.

Graph 1: Species Group and Size Class Sawlog Volume Predictions Cpt 2001



11: AUTHORISATION CONDITIONS

11.1: LEGAL AND ENVIRONMENTAL COMPLIANCE REQUIREMENTS.

This Harvesting Plan is prepared by Forests New South Wales under the authority of the Forestry Act 1916. This Harvesting Plan is a condition of all Timber, Forest Products, Contractors and Operators Licences issued in connection with the timber harvesting operations described in the Plan.

All operations conducted under the authority of the Timber Licence and other licences and agreements issued for the area covered by this Harvesting Plan must comply with:

- all licence conditions issued by Forests NSW under the Forestry Act 1916;
- the “**Forest Practices Code, Part 2, Timber Harvesting in Native Forests - State forests and Crown-timber Lands**” (1999);
- the conditions of “**The Integrated Forestry Operations Approval for the Eden Region, Forestry and National Parks Estate Act 1998**”;
- the schedule of specifications for the harvesting and utilisation of timber applicable to this operation, in this case, the “**Utilisation Schedule for Graded and Salvage Grade (Interim) Sawlogs on Crown Timber Lands within Eden Management Area**” and the “**Wood Supply Agreement**” between State Forests of NSW (now Forests NSW) and Harris Daishowa (Australia) Pty Ltd (trading as “**South East Fibre Exports P/L**”) (29th September 1999)”;
- the Code of Procedure for the measurement of timber and other products applicable to this operation, in this case, the “**Code of Procedure for Sale of Hardwood Sawlogs by Gross Volume Measurement from within Eden Management Area using Truck Delivery Dockets**” and the “**Code of Procedure between Harris Daishowa (Australia) Pty Ltd (trading as “South East Fibre Exports P/L”) and Forestry Commission of NSW (now Forests NSW) for Sale of Native Hardwood Pulpwood by Weight using Truck Delivery Dockets as a Basis for Account within Southern Forestry Region (Edition IV – October 1994)**”; and
- the “**Protocol for Fuel Management - Eden Management Area**”.

Variations, additions or amendments to the above documents may be made by the responsible authorities at any time, and must be implemented immediately by the Forests NSW Licensee.

In preparing this Harvesting Plan, the requirements of Part V of the *Environmental Planning and Assessment Act 1970* (as amended) and Section 92 of the *National Parks and Wildlife Act 1967* have been considered.

11.2: BREACHES AND INFRINGEMENTS.

Non-compliance with any condition or instruction set out in this Harvesting Plan will be dealt with in accordance with Section 6 of the “**Forest Practices Code, Part 2, Timber Harvesting in Native Forests - State forest and Crown-timber Lands**”. Serious breaches may lead to the issue of a Penalty Notice, licensee suspension or prosecution.

11.3: VARIATIONS AND AMENDMENTS TO THIS HARVESTING PLAN.

Conditions and requirements relating to the Environment Protection Licence cannot be varied in the field without the prior approval of the Regional Manager, other than those areas consistent with Condition 16.1 of the Environment Protection Licence. Variations and other specified approvals consistent with Condition 16.1 of the Environment Protection Licence, may be made by the SFO to this Harvesting Plan, subject to the Regional Manager's counter approval. Other approvals may only be made by the Supervising Forester and are also subject to the Regional Manager's counter approval.

All approvals must be recorded on the SFOs' Advise and Comments Form attached to all operational copies of this Harvesting Plan.

This Plan must not be amended by a licensee or contractor.

11.4: HARVESTING PLAN AVAILABILITY.

Copies of this Harvesting Plan must be held available by the contractor or bush supervisor at the site of logging operations at all times that felling, snigging or environmental work is being undertaken within the area covered by this Harvesting Plan.

11.5: HARVESTING PLAN DISTRIBUTION LIST.

NAME	PARTS	MINIMUM NO. COPIES
	Maps,1-13 App. 1.	1
	Maps,1-13 App. 1.	1
	Maps,1-13 App. 1	1
	Maps,1-13 App. 1	1
	Maps,1-13 App. 1	1
	Maps,1-13 App. 1	1
Contractors	Maps,1-13 App. 1.	2
Operator(s) (where required)	Maps,1-13 App. 1.	
Supervising Forest Officer [SFO(s)]	Maps,1-13 App. 1.	1
Supervising Forester(s)	Maps,1-13 App. 1.	1
Regional Office Compartment History File	All	1
Soil Conservationist (Forestry)	All	1
Forestry Unit - DECC Sydney South	Summary of Operations	1 – E mailed

11.6: INDUSTRY ENDORSEMENT.

I endorse this Harvesting Plan on behalf of the industry.

Company: _____ Signature: _____

Licence No: _____

Date: _____ Title: _____

Company: _____ Signature: _____

Licence No: _____

Date: _____ Title: _____

12: PRE OPERATION BRIEFING

12.1: HARVESTING/HAULAGE CONTRACTOR ACKNOWLEDGEMENT – (SFO COPY).

I acknowledge that I have received a copy of the Harvesting Plan No. HP_ED_2001T_09 and that I understand the conditions of the Plan as explained to me by a Supervising Forest Officer. I will brief other operators not present at this briefing prior to them starting operations.

Company: _____ Signature: _____
 Licence No: _____
 Date: _____ Title: _____

12.2: SFO ACKNOWLEDGEMENT – (SFO COPY).

I acknowledge that I have received a copy of the Harvesting Plan No. HP_ED_2001T_09 and that I have been briefed on the conditions of the Plan and understand the supervision and operational control requirements as explained to me by the Sales Forester or their delegate.

Acknowledged: _____ Signature _____
 Title: **Supervising Forest Officer** Date: _____
 Acknowledged: _____ Signature _____
 Title: **Relief Supervising Forest Officer** Date: _____

12.3: PERSONNEL ATTENDING COMPARTMENT INSPECTION

Name	SFNSW/LICENCEE	Date
	Contractor Representative	13/08/09
	Forests NSW	
	Forests NSW	
	Forests NSW	
	Forests NSW	

13: CERTIFICATION

PLAN PREPARATION

Prepared by:

Signature:

Title: **Harvest Planning
Team Leader**

Date: **09/09/09.**

EXTERNAL AUTHORITY NOTIFICATION

(To be completed by the person who originally prepared the Plan and who must attach the relevant notifications to the office copy of the Harvesting Plan.)

Notification to DECC.

Name of Authority.	Date of Notification By Email.
DECC	23/09/09

REGIONAL APPROVAL

I note notification of this Harvesting Plan to the above-mentioned authority, together with the amendments that have been included in the Final Plan.

This Harvesting Plan comprises pages 1 – 30 attached, the Roding Plan (Appendix 1) and the Harvesting Plan Operational Map marked and referenced to this Harvesting Plan. This is Harvesting Plan No. HP_ED_2001T_08.

I approve the issue of this Harvesting Plan subject to any amendments and endorsements that may be made following notification to the Department of Environment & Climate Change.


Approved by:


Signature



Title: **Regional Manager**

Date:

OPERATION COMMENCEMENT DATE: _____

APPENDIX 1		Road Name: Scenic Forest Drive (East) & 2001: 5 Road		Compartment / Coupe: 2001 / 1	Assessor/date: 30.07.09	FORM 13(A)	
Road Assessment				Are there any borrow/gravel pits to be used & are they stable?	Nil		
Length to be used/reopened/realigned		Used: 1800m & 800m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.			
Max. pavement width (m)		5 & 4	Types of existing road drainage	Relief pipes, Mitre, crossfall and/or rollover drains			
Max. clearing outside road prism (m)		2	Spacing of road drainage comply with EPL	Scenic FD: Yes. 2001-5 Rd: Currently does not apply.			
Max. road grade / dist if > 10 degrees		8 & 7 degrees	Max. length/height/condition of batters	1400m & 250m/ <1 m / stable			
Site specific techniques to lower grade?		Nil	Condition of existing drop down structures	Not Applicable			
Maximum groundslope (degrees)		14 degrees	Site specific techniques for soil erosion & sediment control	As per drainage			
FEATURE	WORKS REQUIRED (FNSW 6 & Contractor Responsibility.)			FINAL ROAD USE: RETAIN			
Pavement	Scenic FD: Nil. 2001-5 Rd: Requires reshaping for full length (Contractor).			START DATE	FINISH DATE		
Roadside Clearing	Scenic FD: Nil. 2001-5 Rd: As required must be in accordance with Sch 5 of EPL ie less than 3m either side.						
Gravelling	2001-5 Rd : To facilitate haulage place fill/gravel ramp & if required a relief pipe where road intersects with Wallaga Lake Rd. (FNSW).						
Drainage	2001:5 Rd: Where road grade> 5 degrees install rubberflaps. Where road grade < or = 5 degrees install rollovers or mitre drains as per Sch 5 EPL. On completion of use permanent trafficable rollovers to be installed. Both roads on completion ensure drainage is in effective working order. Logging debris to be removed from table and mitre drains (Contractor).						
Erosion Control	As per Sch 5 EPL.						
Telstra Cables	See Telstra's Duty of Care attached to this plan. SFO to monitor road sinkage/compaction at the cables crossing point during haulage. To avoid damage to the cable additional fill to be added if required.						
Sight Clearance	2001-5 Rd junction with Wallaga Lake Rd: On the eastern side of Wallaga Lake Rd remove vegetation to obtain 160m sight distance (FNSW).			PRODUCED BY HPTL: EDEN 15/09/09			

APPENDIX 1		Road Name: 2001-6 & 2001-7 Roads		Compartment / Coupe: 2001 / 1	Assessor/date: 20.07.09	FORM 13(A)	
Road Assessment				Are there any borrow/gravel pits to be used & are they stable?	Nil		
Length to be used/reopened/realigned		Used: 350m & 920m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.			
Max. pavement width (m)		4	Types of existing road drainage	Rollovers & Mitre drains.			
Max. clearing outside road prism (m)		2	Spacing of road drainage comply with EPL	Currently does not apply.			
Max. road grade / dist if > 10 degrees		7 & 11 (20m) degrees	Max. length/height/condition of batters	250m / 1 m / stable			
Site specific techniques to lower grade?		Not Applicable	Condition of existing drop down structures	Not Applicable			
Maximum groundslope (degrees)		13 & 14 degrees	Site specific techniques for soil erosion & sediment control	As per drainage			
FEATURE	WORKS REQUIRED (Contractor Responsibility)			FINAL ROAD USE: RETAIN			
Pavement	Requires reshaping for full length.			START DATE	FINISH DATE		
Roadside Clearing	As required must be in accordance with Sch 5 of EPL ie less than 3m either side.						
Gravelling	None required.						
Drainage	Where road grade > 5 degrees install rubberflaps. Where road grade < or = 5 degrees install rollovers or mitre drains as per Sch 5 EPL. On completion of use permanent trafficable rollovers to be installed. Ensure drainage is in effective working order and logging debris is removed from table and mitre drains.						
Erosion Control	As per Sch 5 of the EPL.						
				PRODUCED BY HPTL: EDEN 15/09/09			

APPENDIX 1		Roading Plan - Existing Road		FORM 13(A)
		Compartment / Coupe: 2001 / 1		
Road Name: 2001-1 & 2 Roads		Assessor/date: 20.07.09		
Road Assessment		Are there any borrow/gravel pits to be used & are they stable?	Nil	
Length to be used/reopened/realigned	Used: 450m & 110m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.	
Max. pavement width (m)	4	Types of existing road drainage	2001-1 Rd: Rollovers and Mitre drains. 2001-2 Rd: Crossfall drainage.	
Max. clearing outside road prism (m)	2	Spacing of road drainage comply with EPL	2001-1 Rd: Currently does not apply. 2001-2 Rd: Yes.	
Max. road grade / dist if > 10 degrees	8 & 6 degrees	Max. length/height/condition of batters	2001-1 Rd: Nil & N/A 2001-2 Rd: 80m / <1 m / stable	
Site specific techniques to lower grade?	Nil	Condition of existing drop down structures	Not Applicable	
Maximum ground slope (degrees)	12 & 16 degrees	Site specific techniques for soil erosion & sediment control	As per drainage	
FEATURE	WORKS REQUIRED (FNSW 5 & Contractor Responsibility)	FINAL ROAD USE: RETAIN		
Pavement	Reshape and where possible re crown for full length (Contractor).	START DATE	FINISH DATE	
Roadside Clearing	As required must be in accordance with Sch 5 of EPL i.e less than 3m either side. (Contractor).			
Gravelling	2001-1 Rd : To facilitate haulage place fill/gravel ramp & if required a relief pipe where road intersects with Cobargo-Bermagui Rd (FNSW).			
Drainage	2001-1 Rd: Where road grade > 5 degrees install rubberflaps. Where road grade < or = 5 degrees install rollovers or mitre drains as per Sch 5 of EPL. On completion of use permanent trafficable rollovers to be installed. Both roads on completion ensure drainage is in effective working order. Logging debris to be removed from table and mitre drains (Contractor)			
Erosion Control	As per Schedule 5 of the EPL			
Underground cables	2001-1 Rd: See Telstra's Duty of Care attached to this plan. SFO to monitor road sinkage/compaction at the cable crossing point during haulage. To avoid damage to the cable additional fill to be added if required.	PRODUCED BY HPTL: EDEN 15/09/09		
APPENDIX 1		Roading Plan - Existing Road		FORM 13(A)
		Compartment / Coupe: 2001 / 1		
Road Name: 2001-3 & 2001-4 Roads		Assessor/date: R. Douch 20.07.09		
Road Assessment		Are there any borrow/gravel pits to be used & are they stable?	Nil	
Length to be used/reopened/realigned	Used: 880m & 200m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.	
Max. pavement width (m)	5 & 4	Types of existing road drainage	Mitre drains and/or crossfall.	
Max. clearing outside road prism (m)	2	Spacing of road drainage comply with EPL	Currently does not apply.	
Max. road grade / dist if > 10 degrees	7 & 4 degrees	Max. length/height/condition of batters	200 & 100m / 1 m / stable	
Site specific techniques to lower grade?	Not Applicable	Condition of existing drop down structures	Not Applicable	
Maximum ground slope (degrees)	18 & 10 degrees	Site specific techniques for soil erosion & sediment control	As per drainage	
FEATURE	WORKS REQUIRED (Contractor Responsibility)	FINAL ROAD USE: RETAIN		
Pavement	2001-3 Rd: None required. 2001-4 Rd: Requires reshaping for full length (Contractor).	START DATE	FINISH DATE	
Roadside Clearing	As required must be in accordance with Sch 5 of EPL i.e less than 3m either side.			
Gravelling	None required.			
Drainage	Where road grade > 5 degrees install rubberflaps. Where road grade < or = 5 degrees install rollovers or mitre drains as per Sch 5 of EPL. On completion of use permanent trafficable rollovers to be installed. Both roads on completion ensure drainage is in effective working order. Logging debris to be removed from table and mitre drains.			
Erosion Control	As per Schedule 5 of the EPL			
BVSC underground water pipe.	2001-3 Rd: Approx 200m of this road travels over BVSC water mains caution should be taken in placement and depth of drainage structures to avoid damage to this pipe. 2001-4 Rd: Crosses privately owned water pipe road surface should be built up an additional 600mm at the crossing point to avoid damage to the pipe. SFO to monitor surface compression on both roads during haulage & add further fill when required.			
Underground cables	2001-3 Rd: See Telstra's Duty of Care attached to this plan. SFO to monitor road sinkage/compaction at the cable crossing point during haulage. To avoid damage to the cable additional fill to be added if required.	PRODUCED BY HPTL: EDEN 15/09/09		

APPENDIX 1		Roading Plan - Existing Road		FORM 13(A)
		Compartment / Coupe: 2001 / 1		
Road Name: 2001-11		Assessor/date: 28.07.09		
Road Assessment		Are there any borrow/gravel pits to be used & are they stable?	Nil	
Length to be used/reopened/realigned	Used: 200m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.	
Max. pavement width (m)	4	Types of existing road drainage	Crossfall.	
Max. clearing outside road prism (m)	2	Spacing of road drainage comply with EPL	Currently does not apply.	
Max. road grade / dist if > 10 degrees	5 degrees	Max. length/height/condition of batters	Nil/NA	
Site specific techniques to lower grade?	Not Applicable	Condition of existing drop down structures	Not Applicable	
Maximum ground slope (degrees)	11 degrees	Site specific techniques for soil erosion & sediment control	As per drainage	
FEATURE	WORKS REQUIRED (Contractor Responsibility)	FINAL ROAD USE: RETAIN		
Pavement	Requires reshaping for full length.	START DATE	FINISH DATE	
Roadside Clearing	As required must be in accordance with Sch 5 of EPL i.e less than 3m either side.			
Gravelling	None required.			
Drainage	Where road grade > 5 degrees install rubberflaps. Where road grade < or = 5 degrees install rollovers or mitre drains as per Sch 5 of EPL. On completion of use permanent trafficable rollovers to be installed. Both roads on completion ensure drainage is in effective working order. Logging debris to be removed from table and mitre drains.			
Erosion Control	As per Schedule 5 of the EPL			
		PRODUCED BY HPTL: EDEN 15/09/09		

APPENDIX 1		Roading Plan - Road Construction		FORM 13(B)
		Compartment/Coupe: 2001/1		
Road Name: 2001-11 ext Road(FNSW 9)		Assessor/Date: 14.08.09		
Features	2001-11 ext. Road Specs	Additional Instructions / Materials		
Road Length (m)	80			
Max Width of Road Prism (m)	7			
Max. Road Grade (length road > 10?)	5 degrees			
Max Ground Slope (length road > 30?)	11 degrees			
Max Heights of Cut / Fill Batters (m)	<1m			
Max Length of Batters (m)	40m			
Type of Sediment Trapping/Soil Erosion/Sediment Control Device To Be Used During Construction	Natural surrounding vegetation supplemented with silt fencing, seed & mulch as required.			
Recommended Road Drainage Type	Recommend rubberflaps if > 5 degrees. Rollovers or mitres if < or = 5 degrees. SFO to measure and mark in the field in accordance to Sch. 5 Table 1 of the EPL.	Rubberflaps (1) during operation. Permanent trafficable rollovers to be installed on completion of use.		
Spacing of Road Structures to be Installed	As per EPL Sch 5, Section C, Table 1.			
Soil Erosion/Sediment Control Techniques	Drainage outlets must drain onto stable surface which provides efficient sediment trapping & energy dissipation.	Seed and mulch as required.		
Stabilisation Assessment Intervals	As per EPL Sch 5, B5, C15, C17, C19 & C20.			
Drop Down & Dissipater Required	Required where fill batter >1m.			
Soil Stabilisation Techniques of Disturbed Areas	Seed and mulch as required.			
Mass Movement/Dispersible Soils	No.			
Sight Distance (FNSW)	From the intersection with Wallaga Lake Road on both approaches to 2001-11 ext Rd remove vegetation to obtain the required 160m sight distance.			
Gravel (FNSW)	To facilitate haulage place fill at intersection with Wallaga Lake Rd if required.			
Final Road Use	Retain.			
Road Name	Start Date	Finish Date		

APPENDIX 1		Roading Plan - Road Construction		FORM 13(B)
Road Name: 2001-7ext & 8 Roads		Compartment/Coupe: 2001/1		Assessor/Date: 20.07.09
Features	2001- 7ext. Road Specs	2001- 8 Road Specs	Additional Instructions / Materials	
Road Length (m)	300	170		
Max Width of Road Prism (m)	7	7		
Max. Road Grade (length road > 10?)	7 degrees	3 degrees		
Max Ground Slope (length road > 30?)	14 degrees	7 degrees		
Max Heights of Cut / Fill Batters (m)	<1m	Nil ridgetop roading		
Max Length of Batters (m)	150m	N/A		
Type of Sediment Trapping/Soil Erosion/Sediment Control Device To Be Used During Construction	Natural surrounding vegetation supplemented with silt fencing, seed & mulch as required.			
Recommended Road Drainage Type	Recommend rubberflaps if > 5 degrees. Rollers or mitres if < or = 5 degrees. SFO to measure and mark in the field in accordance to Sch. 5 Table 1 of the EPL.			Rubberflaps (3) during operation. Permanent trafficable rollers to be installed on completion of use.
Spacing of Road Structures to be Installed	As per EPL Sch 5. Section C, Table 1.			
Soil Erosion /Sediment Control Techniques	Drainage outlets must drain onto stable surface which provides efficient sediment trapping & energy dissipation.			Seed and mulch as required.
Stabilisation Assessment Intervals	As per EPL Sch 5. B5, C15, C17, C19 & C20.			
Drop Down & Dissipater Required	Required where fill batter >1m.			
Soil Stabilisation Techniques of Disturbed Areas	Seed and mulch as required.			
Mass Movement/Dispersible Soils	No.			
Final Road Use	Retain.			
BVSC water pipe & Telstra cables	Where 2001-8 Rd crosses the water main & telstra cables the road surface is to be built up using gravel to a minimum 600mm depth at the crossing point.			
Additional works	2001-8 Rd : To facilitate haulage place fill/gravel ramp & if required a relief pipe where road intersects with Wallaga Lake Rd.			
Road Name	Start Date	Finish Date		

APPENDIX 1		Roading Plan - Road Construction		FORM 13(B)
Road Name: 2001-9 & 10 Roads		Compartment/Coupe: 2001/1		Assessor/Date: 20.07.09
Features	2001- 9 Road Specs	2001- 10 Road Specs	Additional Instructions / Materials	
Road Length (m)	90	70		
Max Width of Road Prism (m)	7	7		
Max. Road Grade (length road > 10?)	2 degrees	4 degrees		
Max Ground Slope (length road > 30?)	5 degrees	6 degrees		
Max Heights of Cut / Fill Batters (m)	Nil	Nil		
Max Length of Batters (m)	N/A	N/A		
Type of Sediment Trapping/Soil Erosion/Sediment Control Device To Be Used During Construction	Natural surrounding vegetation supplemented with silt fencing, seed & mulch as required.			
Recommended Road Drainage Type	Recommend rubberflaps if > 5 degrees. Rollers or mitres if < or = 5 degrees. SFO to measure and mark in the field in accordance to Sch. 5 Table 1 of the EPL.			Rubberflaps (2) during operation. Permanent trafficable rollers to be installed on completion of use.
Spacing of Road Structures to be Installed	As per EPL Sch 5. Section C, Table 1.			
Soil Erosion /Sediment Control Techniques	Drainage outlets must drain onto stable surface which provides efficient sediment trapping & energy dissipation.			Seed and mulch as required.
Stabilisation Assessment Intervals	As per EPL Sch 5. B5, C15, C17, C19 & C20.			
Drop Down & Dissipater Required	Required where fill batter >1m.			
Soil Stabilisation Techniques of Disturbed Areas	Seed and mulch as required.			
Mass Movement/Dispersible Soils	No.			
Final Road Use	Retain.			
Under Ground Telstra cables	See Telstra's Duty of Care attached to his plan. Build road surface up to a minimum of 600mm at the cables crossing points. Place gravel on roads & cable crossing points. For 2001-9 rd gravel road for approx 30-40m across cables area. SFO to monitor road sinkage/compaction at the cable crossing point during haulage. To avoid damage to the cable additional fill to be added if required.			
Road Name	Start Date	Finish Date		

PREPARED BY HARVEST PLANNING TEAM LEADER SOUTHERN REGION - EDEN 15/09/09

APPENDIX 1		Roading Plan - Existing Road		FORM 13(A)
Road Name: Scenic Forest Drive (West)		Compartment / Coupe: 2001 / 1		Assessor/date: 20.07.09
Road Assessment		Are there any borrow/gravel pits to be used & are they stable?	Nil	
Length to be used/reopened/realigned	Used: 550m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.	
Max. pavement width (m)	4	Types of existing road drainage	Relief pipes and Mitre drains.	
Max. clearing outside road prism (m)	2	Spacing of road drainage comply with EPL	Currently does not apply	
Max. road grade / dist if > 10 degrees	9 degrees	Max. length/height/condition of batters	550m / 1 m / stable	
Site specific techniques to lower grade?	Nil	Condition of existing drop down structures	Not Applicable	
Maximum groundslope (degrees)	12 degrees	Site specific techniques for soil erosion & sediment control	As per drainage	
FEATURE	WORKS REQUIRED (FNSW 7 & Contractor Responsibility)	FINAL ROAD USE: RETAIN		
Pavement	Requires grading for full length (FNSW).	START DATE	FINISH DATE	
Roadside Clearing	None required.			
Gravelling	None required.			
Drainage	Check inlets and outlets of existing relief pipe. Reinstate existing mitre drains. Install rubberflap drains as per EPL Sch 5 specifications between Wallaga lake Road and Dump P (FNSW). On completion of use permanent trafficable rollovers to be installed. Both roads on completion ensure drainage is in effective working order. Logging debris to be removed from table and mitre drains. (Contractor)			
Erosion Control	Unlicensed section: Armour with gravel the approaches of the two unlicensed crossings to the immediate north of the junction with Spotted Gum Rd. Install sediment fencing around each of the unlicensed crossings that front Black Lagoon. Soil specialist and Ops Supervisor to discuss additional measures on site (FNSW).			
BVSC underground water pipe & Telstra Cables	See Telstra's and BVSC Duty of Care attached to this plan. SFO to monitor road sinkage/compaction at the cable/water pipe crossing point during haulage. To avoid damage to the cable/pipe additional fill to be added if required.			
Sight clearance	Remove vegetation on the eastern side of Wallaga Lake Rd. North-east of the junction with Wallaga Lake Rd to obtain 160m sight distance (FNSW).	PRODUCED BY HPTL: EDEN 15/09/09		

APPENDIX 1		Roading Plan - Existing Road		FORM 13(A)
Road Name: Spotted Gum & Maculata Roads		Compartment / Coupe: 2001 / 1		Assessor/date: 20.07.09
Road Assessment		Are there any borrow/gravel pits to be used & are they stable?	Nil	
Length to be used/reopened/realigned	Used: 350m & 500m Realigned: Nil	Site specific spoil management?	As required flatten, seed & mulch.	
Max. pavement width (m)	5 & 4	Types of existing road drainage	Relief pipes, Mitre drains and/or rollovers.	
Max. clearing outside road prism (m)	2	Spacing of road drainage comply with EPL	Spotted Gum Rd: Yes Maculata Rd: Currently does not apply	
Max. road grade / dist if > 10 degrees	5 & 8 degrees	Max. length/height/condition of batters	350 & 100m / 1 m / stable	
Site specific techniques to lower grade?	Not Applicable	Condition of existing drop down structures	Not Applicable	
Maximum groundslope (degrees)	13 & 15 degrees	Site specific techniques for soil erosion & sediment control	As per drainage	
FEATURE	WORKS REQUIRED (FNSW 8 & Contractor Responsibility)	FINAL ROAD USE: RETAIN		
Pavement	None required.	START DATE	FINISH DATE	
Roadside Clearing	None required.			
Gravelling	None required.			
Drainage	Spotted Gum Rd: Check inlets and outlets of existing relief pipes for blockages. Reinstate existing mitre drains (FNSW). Maculata Rd: Where road grade > 5 degrees install rubberflaps. Where road grade < or = 5 degrees install rollovers or mitre drains as per sch 5 EPL. On completion of use permanent trafficable rollovers to be installed. Both roads on completion ensure drainage is in effective working order. Logging debris to be removed from table and mitre drains (Contractor).			
Erosion Control	Spotted Gum Rd: The contractor is to install baulk drains on Spotted Gum Rd immediately west of the junction with Maculata Trail. The location of the baulk drains are to be approved by the SFO and are not to drain directly into drainage features and must drain onto stable ground as per the EPL.			
BVSC water pipe & Telstra Cables	Spotted Gum Rd: See Telstra's and BVSC Duty of Care attached to this plan. SFO to monitor road sinkage/compaction at the cable/water pipe crossing point during haulage. To avoid damage to the cable additional fill to be added if required.			
Sight Clearance	Remove vegetation on both sides of Wallaga Lake Rd to obtain 160m sight distance (FNSW).	PRODUCED BY HPTL: EDEN 15/09/09		

Native Forest Management System

FORM 14 (A): ASSESSMENT OF EXISTING DRAINAGE FEATURE CROSSINGS

REGION: Southern Region: Eden.
MANAGEMENT SECTION: Quaama.

STATE FOREST: Bermagui
COMPARTMENT: 2001.
DATE 22/07/09

(For factors to be considered under Schedule 2 of the Environment Protection Licence)

Crossing Number	C1 (FNSW 10)	C2 (FNSW 11)
Location	Scenic Forest Drive (East):	2001-7 Road
GPS co-ordinates	E235880 N5966462	E235761 N5966329
Drainage Feature	Drainage depression.	Drainage depression.
Type of drainage crossing structure	450 mm pipe culvert.	Natural Causeway
Structure stability	Stable.	Stable.
Width of road pavement at crossing	4.0 m.	4.0 m.
Road pavement type & stability	Stable gravel.	Stable natural surface.
Road pavement containment	Vegetation	Vegetation.
Approach road grade	+3° South-eastern, +1° North-western.	+5° Eastern, +11° western.
Existing approach drainage structures	Mitre drains on both approaches.	Crossfall
Distances to approach road drainage structures (w/n 30 m?)	Between 20 – 26 m.	Not applicable.
Stability of outlet discharge	Install silt fencing at outlets of mitre drains with 30m of the feature.	Not applicable.
Bed & bank stability	Vegetated and stable	Vegetated and stable
Condition of approach road (w/n 30m)	Stable.	Stable.
*Recommended site specific soil stabilisation techniques w/n 30m of drainage feature crossing	Nil. Stable.	Nil. Stable.
*Recommended site specific soil erosion & sediment control techniques	Install silt fencing at outlets of mitre drains with 30m of the feature.	On both approaches: Install rubberflap drains between 5m and 30m from the apparent centre of the drainage feature.
*Recommended site specific techniques for disposal of excess spoil material	Not required nil spoil produced.	Not required nil spoil produced.
Maintenance instructions / additional recommendations	As above.	Install rock apron on running surface if required.

*Also, HP to notify Soil Conservationist & refer to Soil Assessment Report.

Native Forest Management System

FORM 14 (A): ASSESSMENT OF EXISTING DRAINAGE FEATURE CROSSINGS

REGION: Southern Region: Eden.
MANAGEMENT SECTION: Quaama.

STATE FOREST: Bermagui
COMPARTMENT: 2001.
 DATE 22/07/09

(For factors to be considered under Schedule 2 of the Environment Protection Licence)

Crossing Number	C3
Location	Snig Track crossing
GPS co-ordinates	E235262 N5966459.
Drainage Feature	Drainage line.
Type of drainage crossing structure	Natural surface.
Structure stability	Stable.
Width of road pavement at crossing	5.0 m.
Road pavement type & stability	Natural surface, Stable.
Road pavement containment	Vegetation.
Approach road grade	+11° South-eastern, +7° North-western.
Existing approach drainage structures	Rollover drains.
Distances to approach road drainage structures (w/n 30 m?)	Between 3m and 13m.
Stability of outlet discharge	Stable with vegetation.
Bed & bank stability	Vegetated and stable.
Condition of approach track (w/n 20m)	Good. Surface stable.
*Recommended site specific soil stabilisation techniques w/n 20m of drainage feature crossing	Seed and mulch disturbed areas on completion of use
*Recommended site specific soil erosion & sediment control techniques	During operation: At the end of each day install drainage within 5m and 20m from the bank of the incised channel. On completion of use: Install block drains within 5m and 20m from the bank of the incised channel.
*Recommended site specific techniques for disposal of excess spoil material	All spoil to be deposited outside the stream exclusion zone, flattened, seed and mulched.
Maintenance instructions / additional recommendations	As above.

*Also, HP to notify Soil Conservationist & refer to Soil Assessment Report.

Native Forest Management System

FORM 14(C): PROPOSED DRAINAGE FEATURE CROSSINGS

REGION: Southern Region – Eden.
MANAGEMENT SECTION: Quaama.
WORKS RESPONSIBILITY: Harvesting Contractor.

STATE FOREST: Bermagui No. 142.
COMPARTMENT: 2001.

Crossing Number	C4	Works completed
<u>Location / GPS co-ordinates</u>	Temporary snig track crossing south-west of Dump M /GR E235469 N5967520.	
Drainage feature / Permanence of flow	Drainage depression / While raining and shortly afterwards.	
Proposed crossing structure	Natural causeway.	
Width and length of crossing	4.0 m x 10.0 m.	
Additional clearing width upstream and downstream	Maximum of 2.0 m.	
Nature and extent of reshaping of stream bed and banks required	Clearing of understorey vegetation on pavement surface only.	Yes / No
Recommended site specific techniques to:		
- Prevent spoil entering drainage feature during works.	Minimise earthworks and disturbance to the bed of the drainage line. Reverse machinery into the drainage feature and push out from the centre of the drainage feature back to the approaches. Seed and mulch.	Yes / No
- Dispose of excess spoil material	All excess spoil to be deposited outside the filterstrip. Ensure all track drainage is diverted away from the stockpile area.	Yes / No
- Stabilise outlet discharge areas	Minimise disturbance to existing vegetated surface of bed immediately below crossing. Disturbed areas to be seeded and mulched.	Yes / No
- Contain road pavement fill	None required. No fill.	Yes / No
- Prevent run-off from crossing pavement entering drainage feature during use	Crossing must not be used during wet conditions.	Yes / No
- Stabilise soil within 20 m of the drainage feature crossing	Disturbed areas to be seeded and mulched.	
Approaches:		
- Approach track grade	+7 ° Northern approach: +7 ° Southern approach.	
- Type of track drainage structure required b/n 5 – 20 m	During operation: Drainage with 5-20m from the bank of the crossing. On completion of use: Cross banks are to be installed between 5 – 20 m from the bank of the crossing.	Yes / No
- Drainage structure outlet control method	Outlets to discharge onto stable vegetated surface.	Yes / No
- Silt control in table and mitre drain	Vegetation Install sediment fencing if surface becomes unstable during haulage.	
Recommended techniques to prevent water pollution if approach cannot be drained within 5 – 30 m	Nil drainage can be drained within 5-30m.	
Date commenced:		
Date completed:		
Soil Stabilisation within 5 days (Y/N)		Yes / No

APPENDIX 2 POST-HARVEST BURNING PLAN



6.08.01 Bush Fire Mapping Symbols

DTG refers to *Date Time Group* which uses the two digits for the date and 24 hour time, eg 10:51hrs on 4 November would be: **04 1051**

NAME	SYMBOL		NOTES		
PREDICTED (fire edge)			Show DTG		
GOING (fire edge)			Show DTG		
CONTAINED (fire edge)			Show DTG		
PROPOSED (control line)	X—X—X—X—X—X—		Draw on far side of feature		
COMPLETED (control line)	X+X+X+X+X+X+X+		Show DTG		
PROPOSED (backburn)			Draw on near side of feature		
COMPLETED (backburn)			Show DTG		
BACKBURN BURNING IN			Lines show depth of burn at DTG		
RED – FIRE	BLACK – CONTROL LINES	BLUE – WRITING & SYMBOLS			
△ Strategic or Tactical Significance	○ Command, Control & Coordination	□ Logistics Related	◇ Assets to be Protected		
Fire Origin	Red		Show DTG		
Fire Direction	Blue	F →	Show DTG		
Wind Direction	Blue	W →	Show DTG		
Spot Fire	Red	*	Isolated fire ahead of main fire		
Burnt Area	Black		Burnt area (if old, show month and year)		
Aerial Ignition	Red	⋮ ⋮	Proposed path to be treated		
Divisional Boundary	Blue	λ	Use geographical names		
Sector Boundary	Blue	OOOOO	Use alphabetical names		
Refuge Area	Blue		Escape Route (Add arrow to show safe exit)	Blue	
Control Centre (Incident Management Team location)	Blue		Staging Area (Where resources are prepared or available)	Blue	
Divisional Command	Blue		Base Camp	Blue	
Sector Command	Blue		Airbase (Fixed wing and/or helicopter base)	Blue	
Helipad	Blue		Water Point Helicopter (Helicopter water supply)	Blue	
Water Point Vehicle (Firefighting water supply)	Blue		Aboriginal Site or Artifacts	Blue	
Ambulance Location	Blue		Endangered Flora	Blue	
Threatened Property	Blue		Endangered Fauna	Blue	
Historic Site (Building or Structures)	Blue				

The use of colours is optional.

Bush Fire Co-ordinating Committee (Approved)
Incident Management Procedures
6.08.01 Bush Fire Mapping Symbols
Version 1.3

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05/04/04

PLANNING INFORMATION

LGA: Bega Valley

Fuel Management Zone & Proposed Burn Summary

Refer to sections 1 & 2 of the harvest plan document for details

Season: Autumn/Winter /

Spring

Zone 3B (Post-Harvest)

REGIONAL BURNING GUIDELINES

Max Temp (°C): 25

Min RH (%): 30

Max Wind Speed (km/h): < 20 Southerly aspect
< 15 Northerly aspect

Max BKDI: < 70 **Max FDI:** 7 (subject to area assessment). **Scorch Height:** 0.6 x dominant tree height – Post

Log

10m – Broad

Area

Max Fuel Moisture Range: 16-40% **Max Rate of Spread:** < 300m/hr. **Average Flame height:** up to 4m – Post
Log

<1 – 2m – Broad Area

Fuel Reduction Objectives: Priority 1 area 40 -60%, Priority 2 & 3 areas 20-50%. Removal of elevated fuels, log dump debris and light removal of ground cover produced by a mosaic burning pattern.

Reduce fine fuels to: manageable levels - Post Log 4 – 8t/ha

BURN AREA INFORMATION

Fuel loads: **50-150 tons per hectare of logging slash, 10 – 20 tons per hectare in between tree heads.**

Fuel arrangement: **Multi-tiered structure (litter, grasses, shrubs, eucalypt regeneration and early mature trees)**

Terrain: **0%>30°, 0% @ 25°-30°, 0.1% @ 20°-25°, 16.8% @10°-20°, 83.1% @ 0°-10° slope.**

Time since last burn: Unknown

IMPORTANT BURNING PRESCRIPTIONS

- A small test burn must always be lit prior to main burn. This will assist in determining FIRE BEHAVIOUR and IGNITION PATTERNS.
- **Ensure private property owners/community have been notified and given sufficient warning.**
- **Seek information from Harvesting SFO on regrowth excluded burn areas.**
- **Minimise fire intensity in regrowth stands.**
- **Seek information from Harvesting SFO on excluded areas.**
- **Where it is considered likely that fire applied externally will enter exclusion zones or private freehold through natural spread, a carefully planned ignition pattern and sequence must be applied.**
- Sections will be lit by drip torch to a determined ignition pattern.
- Areas will generally be burnt from ridge tops down and into the wind to minimise excessive fire behaviour.

- **Forest Management Zone 3aC and 3bC Exclusion Zones are located adjacent to Black Lagoon within Compartment 2001 as indicated on the Harvesting Plan Operational Map. Post log burning is to be excluded from these zones. See Section 5a Forest Management Zone Classification.**
- **Private freehold property is located on the northern and eastern boundaries of Compartment 2001 as indicated on the Harvesting Plan Operational Map. The private freehold boundary should not be crossed. See Section 5b Critical Boundaries.**
- **Fire breaks should be constructed adjacent to private property boundaries to prevent the encroachment of fire unless prior cooperative burning arrangements have been organised.**
- **Within the FMZ 3bV area to the east of Dump C individual heads should be ignited only. FNSW intent is to maintain the visual integrity of this area whilst removing logging debris and maintaining manageable fuel loads. Consideration must be given to prevailing winds and ignition patterns.**
- **Bermagui Dirt Surfers Club Mountain Bike Track is located in the eastern section bounded by Scenic Forest Drive East and Wallaga Lake Road as indicated on the Bermagui Dirt Surfers Bike Track Map. See Section 5d Recreational Values.**
- **Telstra cable markers and BVSC water main markers are located within Compartment 2001 as indicated on the harvesting plan operational map. These markers identify the approximate location of underground optic, cables and water mains these marker should not be burnt. A mineral earth break should be raked around these markers prior to ignition.**
- **A FNSW underground water tank is located within Compartment 2001 as indicated on the harvesting plan operational map. The wooden slabs that cover the tank should not be burnt. A mineral earth break should be placed around the tank prior to ignition. Consideration must be given to prevailing winds and ignition patterns.**
- Overhead power lines are located within Compartment 2001 as indicated on the harvesting plan operational map refer to Section 1.2 Site Specific Identified Hazards.
- Fence lines and gates are located within, and along the entire northern and eastern boundaries, of Compartment 2001 as indicated on the harvesting plan operational map. Damage to these fenceline and gate should be avoided. Where practical a mineral earth break should be placed adjacent to these fence lines. Consideration must be given to prevailing winds and ignition patterns.
- The burn area will be divided into hazard zones and prioritised depending on proximity to residential areas, topography, fuel loads and ecological values. See attached Burning Priority Map.

BURN OBJECTIVES

- Reduce fuel loads in Priority 1 areas as soon as condition are suitable following harvesting
- Reduce fuel loads in Priority 2 areas ensuring drainage line encroachment is minimised.
- Delay burning in Priority 3 areas directly adjoining Black Lagoon by 12 to 18 months after harvesting to reduce sediment impacts on Black Lagoon.
- Burns within Priority 2 and 3 areas should be done during and/or immediately after rain with forest floor fuel moisture ranging from 30-40% and elevated fuel moisture > 16% with the intent of targeting tree heads and log dumps to reduce harvesting debris and produce a mosaic burning pattern whilst maintaining the forest floor vegetation.
- A burn coverage within Priority 1 areas between 40-60%
- A burn coverage within Priority 2 and 3 areas between 20-50%

- To contain fire within designated boundaries.
- To observe and record data, assisting in future high fuel load and advanced regrowth area burns.
- To minimise crown scorch; not exceeding 10% of dominant and co-dominant crowns.
- To minimise defect damage to retained regrowth stems.

ENVIRONMENTAL PRESCRIPTIONS

FLORA AND FAUNA:

Refer to sections 7.1a, 7.1d, 7.1i and 7.2 of the Harvest plan document. H & R trees should be raked around if the risk of burning is high. Logging slash collected around retained trees should not be burnt.

SOIL, WATER & AQUATIC HABITAT:

Refer to sections 7.1b, 7.1i and 8 of the Harvest plan document.

- **Preferred months of burn – April to September**
- Fuel moisture differentials will be utilised to minimise impacts upon drainage features within the burn area

ABORIGINAL CULTURAL HERITAGE:

Refer to section 6 of the Harvest plan document. Significant sites, e.g. midden sites, should be raked around to prevent fire damage. Where practically possible, burning of scattered artefacts should be avoided.

CONTROL AND STRATEGY

CONTROL LINES:

EXISTING	Description of Work Required	Completed
Description of each control line		Yes /No
Cobargo-Bermagui Road		
Scenic Forest Drive east & West		
2001-3 Road		
Spotted Gum Road		
Maculata Trail		
Rays Road		
Check for trees that could burn down and fall over any boundary roads and wet down or rake around as necessary		
PROPOSED	Description of Work Required	Completed
Description of each control line		Yes /No
Fire breaks adjacent to private property boundaries as required	coordinate during harvesting in consultation with private property owners	

SMOKE HAZARD AND MANAGEMENT:

<http://www.bom.gov.au/general/reg/smoke/nsw/index.shtml>

Smoke / Hazard Reduction Signs required?:..... YES NO (R
tick to indicate)

Smoke Dispersion Forecasting via BOM utilised?..... YES NO (R
tick to indicate)

Safety Considerations (pre-burn)		DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
Personnel	Names of fire crew documented daily.							
Visitors on site	Visitor on site induction carried out							
Neighbours notified	Documented in plan							
Traffic control	Traffic control signs to regulate traffic if required							
Smoke management:	Assessment of prevailing winds at the time of burn. Road side signs warning of smoke hazard.							

Supervisor to initial							
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Pre-burn preparation activities and responsibilities.			
Activity	Specifications and tasks	Responsibility (inc date)	Signature
Fuel monitoring	Regular monitoring prior to burning		
Weather monitoring	Conducted prior to and during burning operations.		
Trail preparation <ul style="list-style-type: none"> • D3 • Hand tools 	Mineral earth control lines prepared prior to burning to contain fire within designated burning block.		
Neighbour liaison	Notification and communications documented.		
Liaison with fire & emergency authorities	“as above”		
Media releases	To advise local community of SF burning activities.		
Radio station notifications	“as above”		
Equipment	Ensure all required equipment is available.		
Communications	“as above”		
Visitor Safety	Burn is sign posted. All visitors to report to burn supervisor immediately		
Burn approval	Daily burn approvals given by delegated officers		

NOTIFICATION & RESOURCE REQUIREMENTS

Neighbours..... Contractors..... Lessees.....
 Apiarists..... Shire FCO..... Govt
 Agencies.....

NOTIFICATION REGISTER

RFS (Rural Fire Service)

Name	Position	Phone Number	Notified
	FCO		

NEIGHBOURS: (Refer to compartment planning folder for details prior to burning)

Owner	Postal Address	Lot / Plan	Phone	Notification Letters sent	Reply Received

APIARISTS: (Refer to compartment planning folder for details prior to burning)

Name	Site Number/s	Phone Number	Notified

DAILY CREW SMEACS BRIEFING SHEET

(tick daily when briefed)

SITUATION

DAY 1 2 3 4 5 6 7

- Burn area to be treated (location, boundaries, control line types and exclusive areas) ££££££££
- Burn area characteristics (e.g. terrain, forest cover, sensitive areas, etc) ££££££££
- Burn area access by road class (checked beforehand, dead ends, watering points etc.)..... ££££££££
- Fuel Loadings and fire behaviour prescriptions for the HRB area ££££££££
- Staging areas..... ££££££££
- Expected weather ££££££££

MISSION

- Overall aim of the hazard reduction burn..... ££££££££
- Site specific aims for sections of the HRB (eg, protection of patches of advanced regrowth, rainforest pockets, buildings, bridges, etc.)..... ££££££££
- Secondary aim/s should the HRB escape ££££££££

EXECUTION

- Plant and manpower resources (FNSW, RFS, DEC, others)..... ££££££££
- Division of burn area into 'Sections'..... ££££££££
- Starting points, starting times, finish times (start 'down wind' if possible)..... ££££££££

- Safe 'approved' lighting patterns and directions ££££££££
- Work down-slope, keeping below active fire (except where good fuel breaks occur) ££££££££
- Location and activity of other burning crews ££££££££
- Personal and crew safety - buddy system when lighting up..... ££££££££
- Progress reports at pre-designated times ££££££££
- Maintain awareness of other burning crews (do not light up below other burning crews)..... ££££££££
- Expected fire behaviour, trouble points and contingency plans..... ££££££££
- Actions to be taken in the event of an escape e.g. to pause the light-up ££££££££
- End of burn debrief e.g. reporting areas requiring 'follow-up' patrols after burn ££££££££

ADMINISTRATION

- Reporting field fire weather to the office at regular times..... ££££££££
- Receiving forecast weather reports from office ££££££££
- Logistical support (fuel, food, water, heavy plant, back-up crews etc.) ££££££££

CONTROL, COMMAND, COMMUNICATIONS

- Chain of command (burn supervisor and sector bosses) ££££££££
- Communications systems for fire-ground and command (UHF & VHF radios, mobile phones) ££££££££

SAFETY

- Medical Emergency Evacuation Plan & Site Safety Plan..... ££££££££
- Areas of likely tree or limb falling hazards (methods to identify/mark hazards)..... ££££££££
- Look up and look around procedure (for self and workmates) ££££££££
- Location first aid kits and first aiders ££££££££
- Pre-burn safety actions including 'Smoke Hazard' sign locations, traffic control plan etc..... ££££££££
- Location of safety zones, and escape routes ££££££££
- Safe parking of SF vehicles within the burn area and vehicle speeds during the burn..... ££££££££
- Crew vehicles to have headlights and flashing beacons on where practicable ££££££££
- Schedule adequate rest breaks and set appropriate work pace ££££££££
- Ensure crews have access to supplies of drinking water ££££££££
- Visitors to the site are inducted into the SSP ££££££££

Day 1 - Burn Supervisor.....Date.....	Day 2 - Burn Supervisor.....Date.....
Day 3 - Burn Supervisor.....Date.....	Day 4 - Burn Supervisor.....Date.....
Day 5 - Burn Supervisor.....Date.....	Day 6 - Burn Supervisor.....Date.....
Day 7 - Burn Supervisor.....Date.....	Day 8 - Burn Supervisor.....Date.....

EMPLOYEE IDENTIFICATION

EMPLOYEE	NAME	PROOF OF ACCREDITATION (Eg. FNSW RECORDS)	DATE	SUPERVISOR OR RELEVANT AGENCY SIGNATURE
Incident Controller				
Burn Supervisor				
Crew Leader				
Crew Leader				
Crew Member				
Crew Member				
Crew Member				
Crew Member				

Crew Member				
Crew Member				
Crew Member				

Personnel and equipment requirements:				
Resource	State Forests	NPWS	Brigades	SFO Signature
Incident Controller				
Crew Leaders				
Crew Members				
Tankers	1			
Slip – on Units	1+			
Dozer	n/a			
Helicopter	n/a			
Radios – handheld UHF	1 per person			
Weather monitoring equip.	1 per crew			

Burning Operations Record

Forecast Weather and Indices (Obtain from Office)

See attached daily weather forecasts and relevant indices obtained from the Bureau of Meteorology

Burn Site Weather Readings

Take daily on site readings (hourly if possible) and note un-forecast weather changes.

Date	Time	Temp (°C)	RH (%)	Wind Direction	Wind Sp. (km/h)	FDI	FMC %	COMMENTS

FIRE BEHAVIOUR

		<i>PREDICTED</i>			<i>ACTUAL</i>		
Date	Time (hrs)	Flame Height (m)	ROS (m/hr)	Assessment Method	Flame Height (average)	ROS (m/hr)	Comments

Ignition details – DATE (s).....

Type: Aerial / Ground **Method:** Contour / Ridge / Road edge / Top disposal **Pattern:** Line / Spots
Incendiary Capsules used: _____ (aerial ignition only)

Ignition details – DATE (s).....

Type: Aerial / Ground **Method:** Contour / Ridge / Road edge / Top disposal **Pattern:** Line / Spots
Incendiary Capsules used: _____ (aerial ignition only)

Ignition details – DATE (s).....

Type: Aerial / Ground **Method:** Contour / Ridge / Road edge / Top disposal **Pattern:** Line / Spots
Incendiary Capsules used: _____ (aerial ignition only)

Ignition details – DATE/s

Type: Aerial / Ground **Method:** Contour / Ridge / Road edge / Top disposal **Pattern:** Line / Spots
Incendiary Capsules used: _____ (aerial ignition only)

POST BURN ASSESSMENT

Estimated burn coverage (% of net area):.....%

Estimated burn coverage:.....ha

Fine fuel reduced to an average of :.....t/ha

Estimated area of crown scorch :..... %

OPERATIONAL PERFORMANCE REVIEW

Burn complete? Yes/No

Follow up action required ? Yes/No

Burn contained within planned boundaries? Yes/No

Burn coverage objective met? Yes/No

Fine fuel reduction objective met? Yes/No

Environmental prescriptions met? Yes/No

Threatened Species License conditions met? Yes/No

Fisheries License conditions met? Yes/No

Remedial Action required (if any): _____

<p>Remedial works certified complete.</p> <p>Work Supervisor _____ Date: _____</p>

Comments: _____

Attach additional pages as required