

# FORESTS N.S.W.

## SOUTHERN REGION - EDEN



### HARVESTING PLAN HP\_ED\_2004\_08

### COMPARTMENT 2004

#### 1: AREA IDENTIFICATION

*Management Area:* Eden.  
*State Forest:* Bermagui No. 142.  
*Management Section:* Quaama.  
*Compartment(s) Number:* 2004.

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

<b>Compartment: 2004</b>		
<b>Area of Compartment: 194.4 ha</b>		
	<b>Coupe</b>	<b>Net Area (ha)</b>
Proposed for Harvesting	<b>Part 1</b>	76.1
<b>TOTAL</b>		<b>76.1</b>

#### 2: DESCRIPTION OF PROPOSAL

**(a) Forest Stand condition/Harvesting History:**

This compartment contains a multi-aged forest consisting of regrowth, early mature and mature to over-mature stands dominated by Spotted Gum, Stringybark, Silvertop Ash, Iron Bark, Bloodwood and Coastal Grey Box. A sawlog harvesting operation was conducted in Coupes 1 and 2 of Compartment 2004 between 1984 and 1985. A mining timber harvesting operation took place in Coupe 2 of Compartment 2004 in 1992.

**(b) Integrated Harvesting of Native Forest:**

Mixed-age stands dominated by a commercially mature overstorey will be harvested using Modified Integrated Harvesting subject to the Southern Region: Eden IFOA requirements. The primary product of the harvesting is high quality large and small sawlogs, veneer logs, girders, poles & piles where timber markets are available. Parts of felled logs that do not meet high quality log specifications are segregated and graded into other classifications such as salvage sawlogs, pulp logs & miscellaneous timbers e.g. split & round posts, firewood, mining timbers & craftwood. The availability of miscellaneous timbers depends mainly on forest types, log defectiveness & market conditions at the time of harvesting.

**(c) Thinning Harvesting of Regrowth Native Forest:**

Overstocked advanced regrowth stands originating from past logging activities and wildfire events may be manually thinned under site specific silvicultural regimes aimed at retaining the highest quality future sawlogs. 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.

**(d) Roadworks:**

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

**(e) 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 (See also Section 3.2b).

- 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.

### 3: FOREST CONDITION & SILVICULTURE

#### 3.1: FOREST TYPE:

**Table 2: Compartment Forest Types:**

Compartment 2004	Forest Type (Res. Note 17)
	70: Spotted Gum
	74: Spotted Gum – Ironbark/Grey Gum
	112: Silvertop Ash
	114: Silvertop Ash _ Stringybark

**Reference:** Baur GN “Forest Types in New South Wales” FC NSW Res. Note No. 17 2nd ed. 1989.  
Pre-harvest Survey Report Compartment 2004, Bermagui State Forest, Forests NSW Southern Region - Eden, 2008.

#### 3.2: SILVICULTURAL OBJECTIVES AND PRESCRIPTIONS:

**(a) Silvicultural Prescriptions for Integrated Operations:**

- The stands are of poor to medium quality and are dominated by areas of early regrowth to advanced regrowth in the understory, with early mature, suppressed mature and dominate mature trees throughout the overstorey. Forest stands of mixed age cover approximately 94% of the net harvest area and will be selectively harvested under a modified integrated harvesting regime. The principal objective of this operation is to remove a representative range of species of the early mature and mature trees containing high quality products (e.g. quota sawlogs, veneer, girders or poles), while minimising damage to young regenerating stems whilst maintaining the compartments’ visual integrity. As a result of harvesting canopy openings will promote growth of the retained regrowth and mature component for future sawlog production. Care must be taken to avoid damage to the retained future crop.
- **No more than 60% of the canopy cover is to be removed.**
- Trees will be retained for fauna habitat, seed supply, further economic growth, visual integrity and structural diversity. Commercially viable trees not required for any of these purposes will be harvested for sawlogs to create good regeneration opportunities.
- 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.
- 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.
- 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 Supervising Forest Officer (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.
- Harvesting disturbance should be concentrated away from retained trees and exclusion zones, to optimise post-harvest regeneration and provide a good seed bed for regeneration. This may be achieved by felling trees or pushing heads into non-commercial trees or stands where it is safe to do so.
- 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.

**(b) Silvicultural Prescriptions for Patches of Regrowth Stands within Integrated Operations:**

- Patches of good quality regrowth (shown as "Available for Thinning" on the Harvesting Plan Operational Map), are to be selectively harvested using directional felling, where safe to do so. The principal objective of this operation is to thin the high quality regrowth and remove scattered mature trees and sub-dominant regrowth trees to promote growth of the best regrowth trees for future sawlog production. Care must be taken to avoid damage to the retained future crop.
- Retention rates of 60 - 80 stems/ha of the most vigorous regrowth stems, of suitable form, will be targeted. Retained stems should be in the dominant or best of the co-dominant classes with the greatest potential to yield sawlogs in the shortest time frame.
- Areas that cannot be practically thinned are to be retained for future harvesting operations. These areas will be boundary marked by the SFO for retention.

## 4: SAFETY CONSIDERATIONS

### 4.1: 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. Suburb (State Forest name):

Bermagui.

(Nearest town or named locality):

Bermagui.

(Nearest Ambulance station):

Bermagui.

3. Address: (Nearest named State forest road):

Box Flat Road.

4. Nearest Road Junction:

Cobargo-Bermagui Road and Box Flat Road

5. Local Government Area:

Bega Valley Shire Council.

6. Nature of the problem:

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:

E234483 N5966270.

Lat/long for GPS:

36°24' 43"S 150° 02' 20"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.

#### 4.2: 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	Assess area within two tree lengths (based on the tallest surrounding trees) of work site. Assess risk, & if necessary remove hazard or move work site. Use machinery to assist with hazard removal if possible. Refer to FNSW Safety Standard 1.3.9 The Management of Tree Hazards (Dangerous Trees).

The planned locations for 1 (roads) & 2 (dumps) 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 Box Flat Road, Doras Top Road and all other internal forestry roads are closed to all traffic when trees within two tree lengths of Box Flat Road, Doras Top Road and all internal forestry roads are being felled.

- 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 then RTAs' Traffic Control at Work Sites TCP 83 attached to Roding Plan HP\_ED\_2004\_08 must be implemented.
- Assessment of Cobargo-Bermagui 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 Dorras Top Road and Cobargo-Bermagui Road, Box Flat Road and Cobargo-Bermagui Road and 2004-4 Road and Cobargo-Bermagui Road. RTA Traffic Control at Work Sites TCP 83 attached to Roding Plan HP\_ED\_2004\_08 must be implemented.
- **Forests NSW Eden office must be notified well in advance of any proposed road closures along Cobargo-Bermagui Road. The duration of closure on Cobargo-Bermagui Road must be kept to a minimum to accommodate general public access on this road.**
- Assessment of Cobargo-Bermagui Road has 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.
- 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 is 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.

## 4.3 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 67(1)(a)) or interfere with such equipment (clause 67(1)(b)) Forestry Regulations 2004. 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 67(1)(a) or 67(1)(b) of Forestry Regulations 2004 and to leave the site or move outside the 100 metre restricted area immediately.
- Notify the Forests NSW Office of unauthorised visitors.

## **5: SPECIAL REQUIREMENT AREAS**

**(a) Forest Management Zone Classification:**

Forest Management Zone 3bV (50m) exists along Cobargo–Bermagui Road which forms the northern boundary of Compartment 2004 as indicated on the Harvesting Plan Operational Map. Forest Management Zone 3bV (variable width) exists along the southern boundary of Compartment 2004 as indicated on the Harvesting Plan Operational Map.

- All harvesting activities (except routine road maintenance to Box Flat Road, 2004-3 Rd & 2004-4 Road) must be excluded from this zone.

Forest Management Zone 3aW (Wildlife variable width) is located on the southern boundary of Coupe 2 of Compartment 2004 as indicated on the Harvesting Plan Operational Map. Coupe 2 is outside the proposed harvest area and will not be affected by this harvest operation.

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

**(b) Critical boundaries:**

Freehold property is located on the western boundary of Compartment 2004 indicated on the Harvesting Plan Operational Map as non harvest area. The freehold property boundary adjoining Compartment 2004 is greater than 100m from the proposed harvesting operation and will not be affected by this operation.

**(c) Research and Inventory Plots:**

A Permanent Growth Plot (PEE 286) is located within Coupe 2 of Compartment 2004 as indicated on the Harvesting Plan Operational Map. Coupe 2 is outside the proposed harvest area and will not be affected by this operation.

**(d) Recreational Site Values:**

Recreational access to the forest will be restricted during harvesting operations.

**(e) Occupational Permits and Grazing Permits:**

Bega Valley Shire Council has an Occupational Permit (No. 13180) within Compartment 2004. This permit covers the area of land where the underground pipeline is located, as indicated on the Harvesting Plan Operational Map. See (g) 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 following prescriptions:

- A minimum of 60% canopy retention must be achieved over the net harvest area. This canopy retention is not additional to the tree retention prescriptions included in this plan.
- 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 Pigs Crossing Road, Nutleys Creek Road and from the western approach to this compartment on the Cobargo-Bermagui Road. 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 pipes and reservoirs**

A Telstra underground cable is located on a section of the eastern side of Box Flat Road and in close vicinity to P.M.G Trail and Doras Top Road as indicated on the Harvesting Plan Operational Map. The actual location of the cable in the field was located by a Telstra Qualified Cable Locator and is identified in the field by cable markers and pink and black stripped 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 these cables, FNSW and the harvesting contractor must follow Telstra “**Duty of Care**” as per Telstra requirements. This means wherever a new 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 this cable line. No ground disturbance is allowed at this cable line area and within 5.0 m of this line.
- Where the Telstra Cable is located under proposed new roads 2004-2 or by an extraction track the road/track 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 dump sites E, F, and L and the snagging pattern to E, F and L to avoid causing damage to this cable line.
- No rock-blasting is permitted within 10.0 m of this cable line.
- No pushing of trees is allowed within 5.0 m of the Telstra cable lines. All trees within this vicinity must be manually felled, where it is safe to do so.

A BVSC above ground concrete water reservoir is located on the eastern side of Box Flat Road as indicated on the Harvesting Plan Operational Map. It is the contractor responsibility that this reservoir is not damaged due to harvesting or haulage activities.

A BVSC underground water main is located in the northern section of Compartment 2004 as indicated on the Harvesting Plan Operational Map. The actual location of the pipe is identified in the field by blue tipped concrete posts.

- Care must be taken to avoid damage to this water pipe. No ground disturbance is allowed at this water pipe area and within 5.0 m of this line.
- When crossing the water pipe in reopening the roads to Dumps G, H and I, as far as practicable use the existing cleared surface of the trail and avoid digging into the ground within 10m of the pipe.
- Cares must be taken in placement of dump sites H and the snagging pattern to G and H to avoid causing damage to this water pipe.
- No rock-blasting is permitted within 10.0 m of this water pipe.
- No pushing of trees is allowed within 5.0 m of the water pipe. All trees within this vicinity must be manually felled, where it is safe to do so.

#### **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 7:00am 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 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.

#### **Outstanding Trees**

Compartment 2004 has the potential to contain "Outstanding Trees" particularly *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 Sales 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 are excluded from harvesting however if a potential outstanding tree is determined it should still be placed on the "Outstanding Tree" data base.

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

## 6: CULTURAL HERITAGE

### (a) Cultural Heritage:

All relevant representatives have been consulted and inspected Compartment 2004. The boundaries of Cultural Heritage Sites have been clearly marked by members of the Local Aboriginal Land Council.

- No forestry activity disturbance is permitted within these boundaries
- A non-harvest zone of 20m has been placed around the sites.
- Trees that are harvested within 2 tree lengths of the site must be felled away from the site.

## 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**” 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 occurs 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, which 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 occurs 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, which meet the definition of a 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.

**(c) Ridge and Headwater Habitat:**

A strip of Ridge and Headwater Habitat (40m wide) is located in the north-western section of Coupe 1 of Compartment 2004 as indicated on the Harvesting Plan Operational Map.

- Specified forestry activities must be excluded from this area.

**(d) Rainforest areas:**

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 must be excluded from these rainforest areas and the corresponding 20 m exclusion zones.

**(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:**

A SEPP14 wetland is located within FMZ 3aW on the southern boundary of Coupe 2 of Compartment 2004. Coupe 2 is outside the proposed net harvest area for this operation and will not be affected by this operation.

**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 heard record is located within Coupe 2 of Compartment 2004 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*, *Eucalyptus botryoides*, *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:** Intensive koala surveys were undertaken during the pre-harvest surveys as per the Threatened Species Licence. Compartment 2004 was also 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 2004.

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

**Powerful Owl, Masked Owl and Sooty Owl:**

Powerful Owl and Sooty Owl records are located within Compartment 2004. Care should be taken during mark up to identify possible roost and nest sites.

- A 30 metre radius exclusion zone must be implemented around all Powerful Owl, Masked Owl and Sooty Owl Roost Trees.
- A 50 metre radius exclusion zone must be implemented around all Powerful Owl, Masked Owl and Sooty Owl Roost Trees.

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. Licencee 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 1342
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 Snig 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.

- Dumps A, B, C, E, F, H, J, K and M are the nominated wet weather dumps for this harvesting operation.

#### (b) Order of working:

The order of working will be progressive harvesting in Coupe 1 of Compartment 2004 subject to wet weather constraints and as directed by the SFO. The contractor must not leave a designated working area (dump or coupe as specified by the SFO) until approval has been given by SFO.

**(c) Downhill Snigging:**

Minor downhill snigging will be required within Compartment 2004.

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 the Harvesting Plan Operational Map.

Log dump size must be kept to a minimum.

**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 according to the following state-wide Harvest Marking Code;

**Table 5: Harvest Marking Code**

Description	Symbol
<b>A. STANDARD MARKINGS/SYMBOLS</b>	
<b>MARKINGS/SYMBOLS THAT DELIVER KEY REQUIREMENTS ON A STATEWIDE BASIS</b>	
<b>Compartment boundary</b> Where not defined by clear features eg. Road, trail, creek	<b>"O" or Yellow tape</b>
<b>Exclusion zone</b> (eg. Old Growth or Species Exclusion Zone) Line not to be crossed or disturbed by fallers or harvesting machinery at any time	<b>Three horizontal lines or rings Or Blue tape</b>
<b>Edge of net harvest area</b> (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)	<b>"α"</b>
<b>Buffer Zone</b> Areas where disturbance by harvesting is allowed only under specified conditions	<b>Two horizontal lines or rings (with indication of distance if required)</b>
<b>Extraction System</b> Road/Track line	<b><u>"I" or white tape</u></b>
<b>Dump site with optional dump number reference</b>	<b>"D" or red tape</b>
<b>Approved crossing site</b>	<b>"b"</b>
<b>Slope angle indication (commences here)</b>	<b>eg "25°"</b>
<b>Trees To Be Removed</b> Individual tree	<b>"." or dots</b>
<b>Directional felling mark</b>	<b>"Ç" over "."</b>
<b>Retained Trees</b> Retained trees not to be removed or damaged (eg grower)	<b>One horizontal line or ring</b>
<b>Habitat tree, for any flora or fauna.</b>	<b><u>"H"</u></b>

Description	Symbol
<b>Eucalypt feed tree</b>	<b>"E"</b>
<b>Recruitment tree</b>	<b>"R"</b>
<b>Cancellation Mark</b> Mark to formally cancel previous marks	<b>"X"</b>
<b>Identified Hazard</b> Arrow to indicate direction of hazard	<b>"Æ- "</b>
<b>SPECIALIST MARKINGS/SYMBOLS</b> <b>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.</b>	
<b>Flora Fauna Features Retained Tree</b>	<b>One horizontal line or ring</b> <i>PLUS</i>
Glossy black cockatoo feed tree, record or nest	<b>"GB"</b>
Owl nest and/or roost	<b>"OWL"</b>
Nest (raptors, parrots etc.)	<b>"N"</b>
Yellow-bellied Glider v-notch feed tree or record	<b>"Y"</b>
Squirrel Glider sap feed tree, record or nest	<b>"SG"</b>
Koala high use tree	<b>"K"</b>
Koala retained feed tree	<b>One horizontal line or ring</b>
Frog record	<b>"F"</b>
Smoky Mouse record	<b>"SM"</b>
Quoll record; latrine; den	<b>"Q"; "QL"; "QD"</b>
Bat record; roost	<b>"B"; "BR"</b>
Phascogale den	<b>"PD"</b>
Threatened plant	<b>"TP"</b>
<b>Other Markings</b>	
Private property	<b>"PP"</b>
Cave, tunnel or mineshaft	<b>"CTM"</b>
Drainage Depression Centre line	<b>"DD"</b>
Coupe Boundary	<b>Blue Ring</b>
Filterstrips/stream exclusion zones	<b>Three horizontal lines or Rings Or Pink tape</b>

**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: Yield Estimate Information**

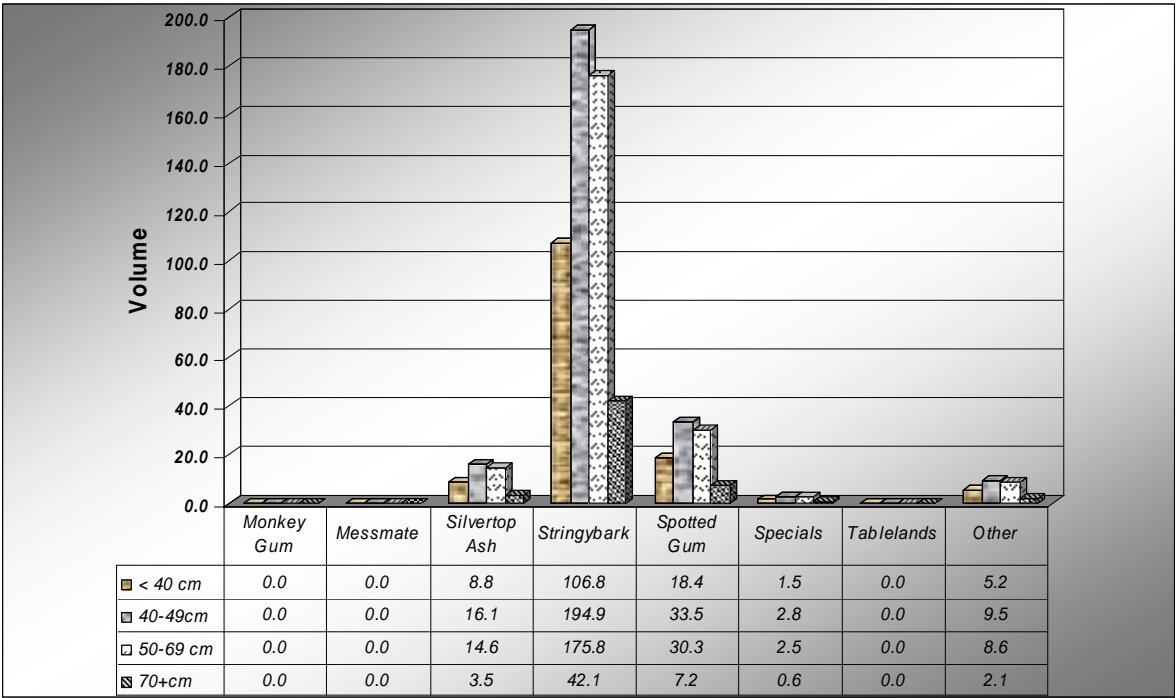
Compartment No.	Sawlog Volume (m <sup>3</sup> / ha)	Pulpwood Volume E1 & E2 (t / ha)
2004	9	5

**Source:** Eden FRAMES, 1997.

**Note:** Pulpwood volume has been adjusted to reflect changed specifications in 2002.



**Graph 1: Species Group and Size Class Sawlog Volume Predictions Cpt 2004**



## 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”) (29<sup>th</sup> 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
Timber Licensees:	Maps,1-13 App. 1.	1
Blue Ridge Hardwoods	Maps,1-13 App. 1.	1
Davis & Herbert Nowra	Maps,1-13 App. 1	1
avis & Herbert Narooma	Maps,1-13 App. 1	1
Big River Timbers	Maps,1-13 App. 1	1
S.E.F.E.	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 Specialist (FNSW)	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.

At final inspection n S.E.F.E. supervisor must be present. If a S.E.F.E. supervisor is not present, final clearances will not be given.

Company: **Blue Ridge Hardwoods,  
Eden Pty. Ltd.**

Signature: \_\_\_\_\_

Licence No : \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

Company: **South East Fibre  
Exports Pty Ltd.**

Signature: \_\_\_\_\_

Licence No: **HE 03259**

Date: \_\_\_\_\_

Title: \_\_\_\_\_

## 12: PRE OPERATION BRIEFING

### 12.1: HARVESTING CONTRACTOR ACKNOWLEDGEMENT – (SFO COPY).

I acknowledge that I have received a copy of the Harvesting Plan No HP\_ED\_2004\_08 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\_2004\_08 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:

**13: CERTIFICATION****PLAN PREPARATION**

Prepared by:

Signature:

Title: **Harvest Planning  
Team Leader**Date: **16/10/08.****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 E-mail	Date Summary of Operations Posted.
DECC		

**REGIONAL APPROVAL**

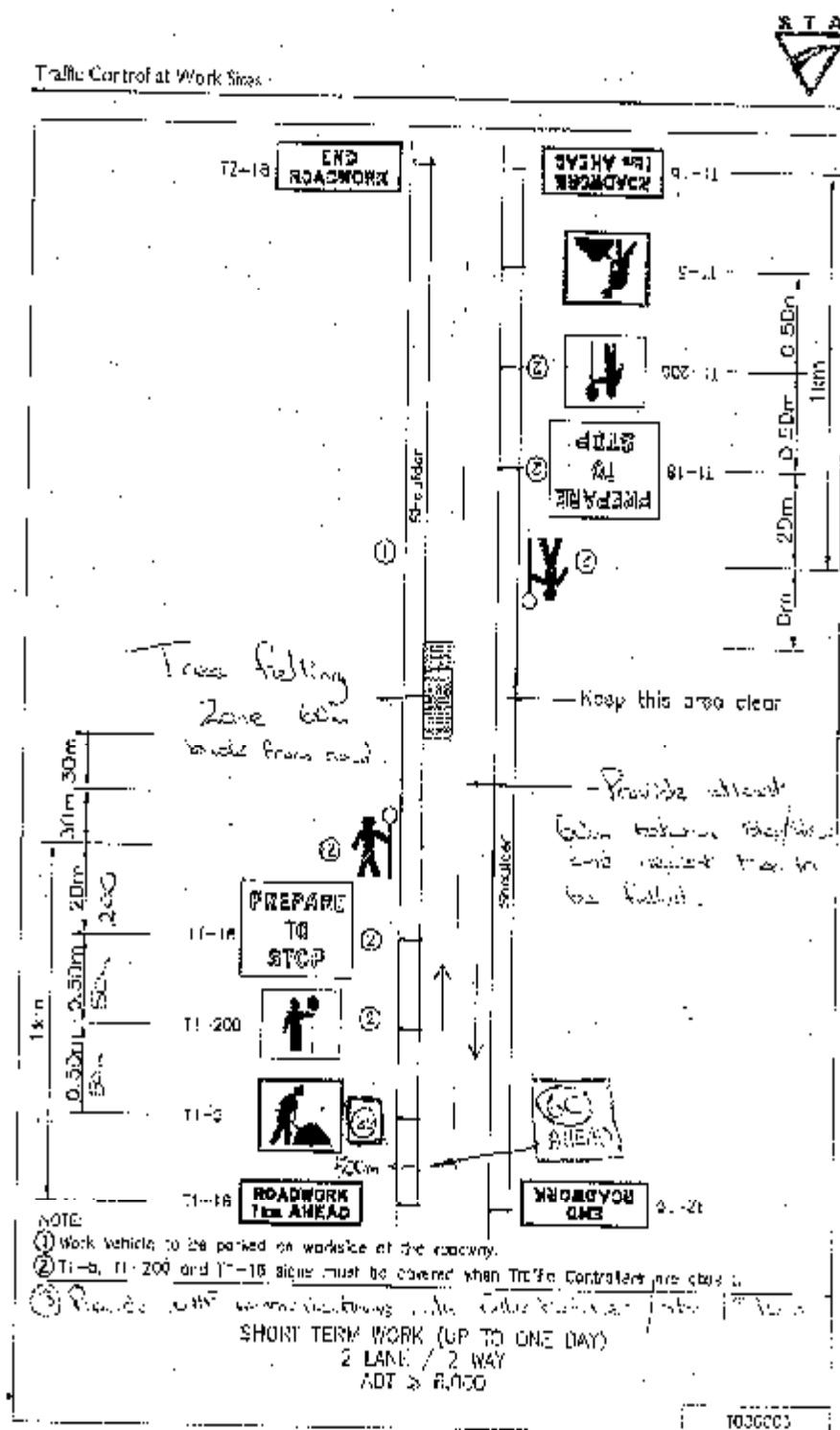
I note notification of this Harvesting Plan to the above-mentioned authority, together with the amendments that have been included in the Final Plan.

This Harvesting Plan comprises pages 1 - 22 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\_2004\_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 and Climate Change.

Approved by: **Ian Barnes**Signature: **Ian Barnes**Title: **Regional Manager**Date: **20/10/08****OPERATION COMMENCEMENT DATE:** \_\_\_\_\_

## Appendix 2.



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