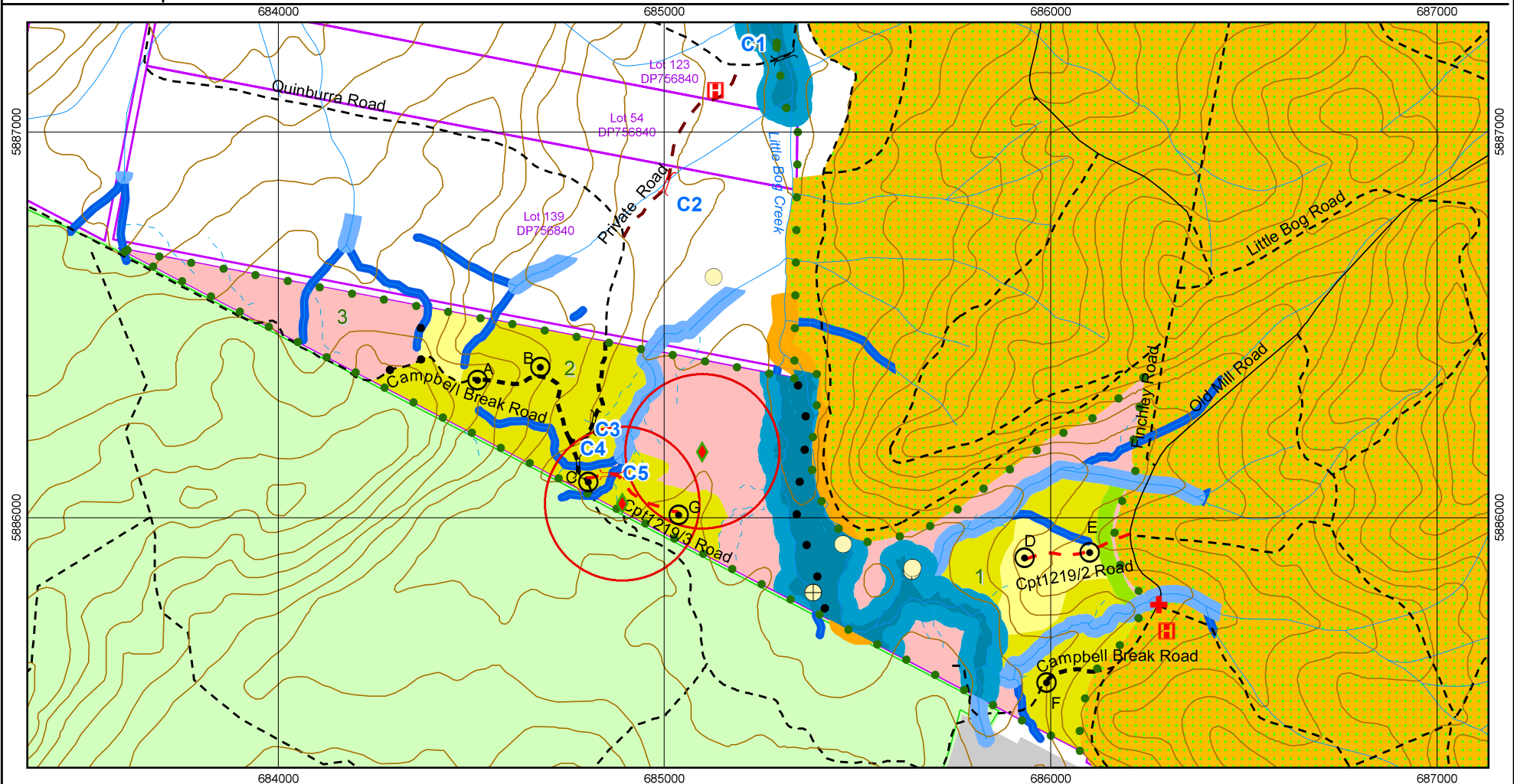
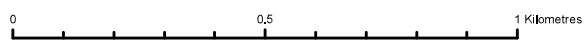


- | | | | |
|--------------|---------------------|-------------------------------|-----------------------------|
| EMP | Natural Surface | Special Protection (Zone 1) | Vacant Crown Land |
| Helipad | 4 Wheel Drive Track | General Management (Zone 4) | Private Hardwood Plantation |
| Private Road | Main Rivers | Hardwood Plantations (Zone 5) | State Forests Victoria. |
| Sealed | WaterBodies | Softwood Plantations (Zone 6) | Vic National Park |
| Major Gravel | Native Forests | Non Forestry Use (Zone 7) | |
| Minor Gravel | Planning Unit | National Park Estate | |

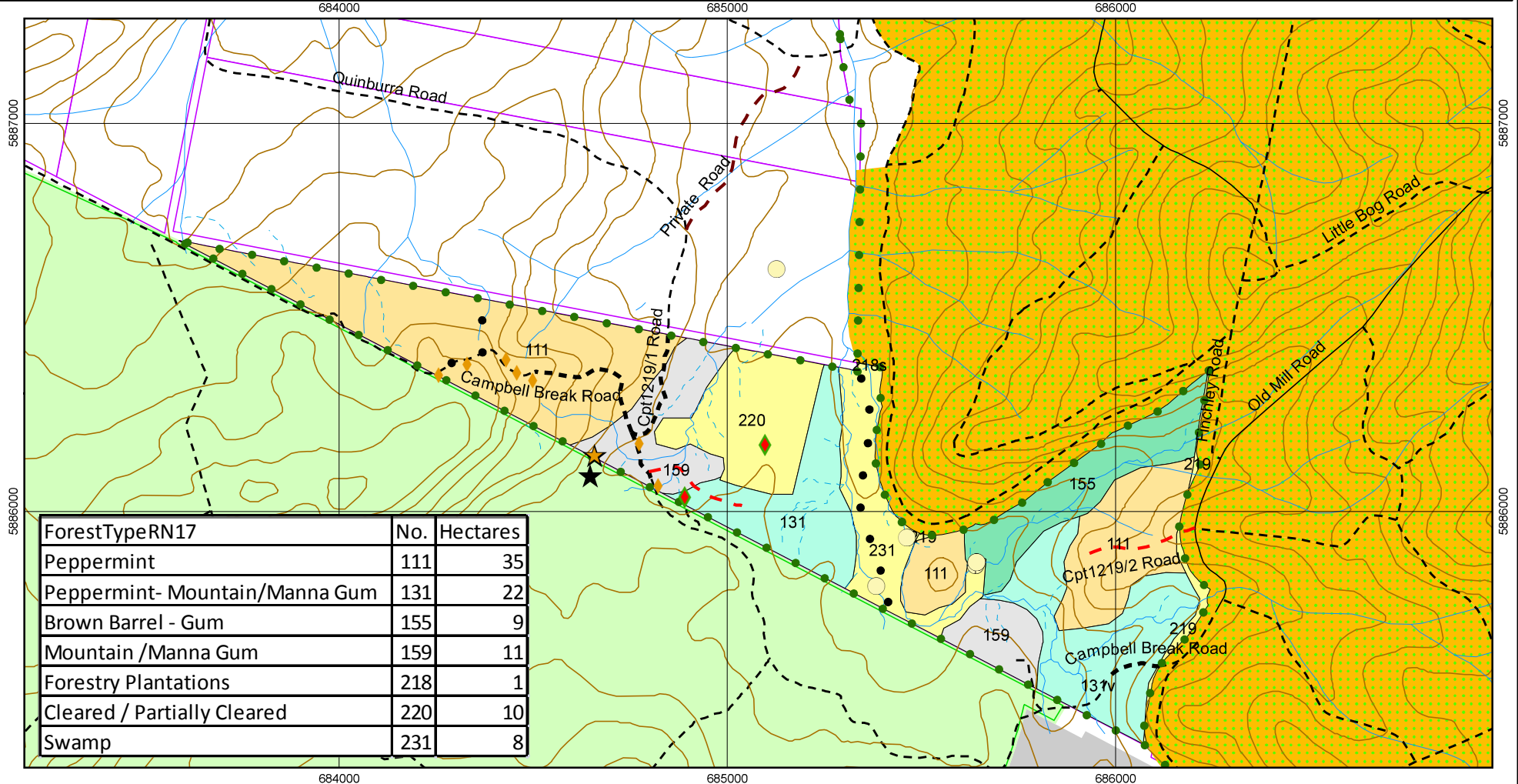




	Yellow-bellied Glider (Heard)		EMP		Minor Roads (EPL Standard)		10m Interval Contour		Ridge and Headwater Habitat (40m)		State Forests Victoria.
	Euphrasia scabra		Helipad		New Roads (EPL Standard)		Wetland		Excluded Forest		National Park Victoria
	Temporary Dry Weather Dump		State Forest Boundary		Other Roads		Wetland EZ (40m)		FMZ 4 - MSW		
	New Crossing		Coupe Boundary		Private New Road		Stream PZ 1st Order (10m)		FMZ 4 - MSW (High Peppermint)		
	Existing Crossing		YBG 200m Tree Marking Boundary		LIDAR Corrected Drainage		Stream PZ 2nd Order (20m)		Softwood Plantation		
			Major Roads (other)		Indicative Unmapped Drainage Features		Stream PZ 3rd Order (30m)		Private Property		



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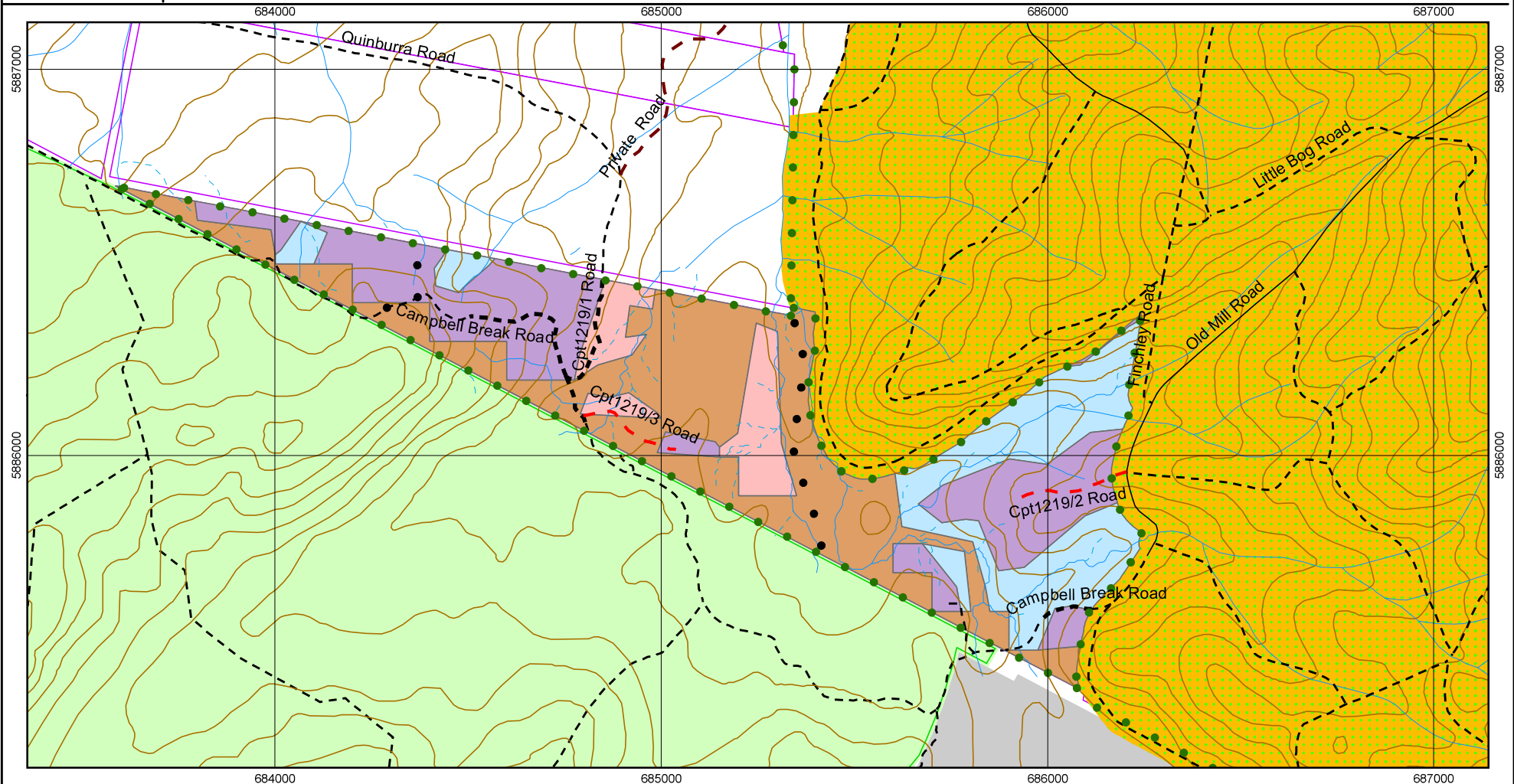
ForestTypeRN17	No.	Hectares
Peppermint	111	35
Peppermint- Mountain/Manna Gum	131	22
Brown Barrel - Gum	155	9
Mountain /Manna Gum	159	11
Forestry Plantations	218	1
Cleared / Partially Cleared	220	10
Swamp	231	8

- ★ Gang-gang Cockatoo
- ◆ Greater Glider
- ◆ Yellow-bellied Glider (Heard)
- Euphrasia scabra
- State Forest Boundary
- Coupe Boundary
- Major Roads (other)
- Minor Roads (EPL Standard)
- New Roads (EPL Standard)
- Other Roads
- Private New Road
- LiDAR Corrected Drainage
- Indicative Unmapped Drainage Features
- 10m Contour Interval
- Type 111 Peppermint
- Type 131 Peppermint - Mountain / Manna Gum
- Type 155 Brown Barrel - Gum
- Type 159 Mountain / Manna Gum
- Type 218 Forestry Plantations
- Type 220 Cleared / Partially Cleared
- Type 231 Swamp
- Softwood Plantation
- Private Property
- State Forests Victoria
- National Park Victoria

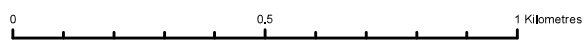


FORESTRY CORPORATION OF NSW, HARDWOOD FORESTS DIVISION

HARVEST PLAN HABITAT CLASS MAP (Indicative)



- | | | | |
|----------------------------------|---|----------------------|---------------------------|
| ● State Forest Boundary | - - - Other Roads | Habitat Class | ● Softwood Plantation |
| ● Coupe Boundary | - - - Private New Road | ■ Low | ■ Private Property |
| — Major Roads (other) | — LIDAR Corrected Drainage | ■ Moderate | ■ State Forests Victoria. |
| - - - Minor Roads (EPL Standard) | - - - Indicative Unmapped Drainage Features | ■ High | ■ National Park Victoria |
| - - - New Roads (EPL Standard) | — 10m Contour Interval | ■ Unknown | |



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WHS Tool / Resource **2.1.3 Site Safety Plan**

This site safety plan is for all FCNSW operations of more than one day duration or where an operational plan is in place. Where a contractor is responsible for the work to be undertaken, the contractor must develop their own site safety plan.

A Medical Emergency Evacuation Plan (MEEP) has been developed and is included below

Location	
Forest Name: Bondi	Specific location details: Compartment 1219
Date work commenced:	
Description of Work to be undertaken on site: Forest mark-up, road maintenance and construction, harvest supervision, compliance monitoring	
On site communication:	
Radio channel number	VHF
	UHF
Other (e.g. mobile phone numbers of other workers on site, hand signals):	
Site Supervisors	
Name:	Contact number:
Site workers including contractors	
Name:	Contact number:
First Aid Kit locations	
First Aiders on site	
Hazardous chemicals on site	Safety Data sheet location
Mandatory PPE required	Task specific PPE required
Appropriate safety footwear High visibility clothing Long sleeve shirt and trousers	<input type="checkbox"/> Hearing Protection <input type="checkbox"/> Gloves <input type="checkbox"/> Eye Protection <input type="checkbox"/> Hard hat <input type="checkbox"/> Other

A number of hazards are common to all forest sites. All workers should be aware of the following hazards and ensure appropriate control measures are in place.

Common forest and outdoor hazards	Control	Responsibility
Exposure to sun	Long sleeve clothing, sunscreen, work in shade where possible,	All workers
Exposure to heat, rain and cold	Appropriate clothing, adequate water supply, plan work for cooler times of the day where possible	All workers
Overhead hazards/dangerous trees	Identify and remove dangerous trees in work area. Where unable to remove, mark trees. Assessment of work areas prior to commencement and ongoing with changing weather and wind. Wear hard hat	Supervisors, contractors and all workers
Recreational hunting	Recreation hunting is permitted in the planning unit. Exclusion zone signage must be erected prior to commencing all on ground activities	All workers
Bites and stings	Permethrin treated clothing Insect repellent Long sleeved shirt/long trousers	All workers
Slips and trips/uneven ground	Boots worn and maintained in good condition Use of aids- walking poles, carry bags, spikes etc	All workers
Mobile Plant	Safe zones established Traffic management systems in place	Supervisors and workers
Vehicle collision at road intersections and road sides	Warning signs at FCNSW road intersections, implement traffic control plans, 60km/hr speed limit on unsealed forest roads, vehicle headlights on at all time when driving.	All workers
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.	All workers


The following additional hazards are present at this site: Examples include but are not limited to: other contractors/workers in vicinity, mine shafts, cliffs, underground cables, overhead power lines, mobile plant, traffic, school bus route, log trucks on road, work on or near roads, difficult site access, unauthorised visitors, quarries, asbestos etc

Site Specific Hazards	Control	Responsibility

Safe Work Practices

The following Safe Work practices are relevant for work conducted on this site (site supervisor to document):

SITE SAFETY PLAN DEVELOPMENT

Date of of initial plan development	Developed By	Position	Signature
22/12/2017	Julia Clark	Senior Planner	

SITE SAFETY REVIEW

The site safety plan must be reviewed by the site supervisor at a minimum of every 3 months and reviews recorded below. Where changes are made to the site safety plan, these must be recorded on the plan. A new plan may need to be printed where changes are significant.

Date of review	Changes made? If yes, document changes	Conducted by	Initials

WHS Tool/Resource

3.5.3 Medical Emergency Evacuation Plan

Emergency Meeting points are shown on the attached Locality Map

	Description	MGA; Zone for EMP; and Lat/Long for helicopter landing point
Phone Reception	Good. Nearest reception at Crossing C1.	Lat/Long: 37° 08' 35" S / 149° 05' 11" E MGA: 685310 E 5887194 N
Emergency Meeting Point	Eastern: Junction of Old Mill Road and Chinamens Creek Road. Western: Junction of Miralai Road and Little Bog Road.	Eastern: Lat/Long: 37° 09' 21" S / 149° 05' 52" E MGA: 686297 E 5885758 N Western: Lat/Long: 37° 07' 49" S / 149° 06' 05" E MGA: 686676 E 5888583 N
Helicopter Landing point	Eastern: Junction of Old Mill Road and Chinamens Creek Road. Western: Clear paddock in private property northern boundary of compartment	Eastern: Lat/Long: 37° 09' 21" S / 149° 05' 52" E MGA: 686297 E 5885758 N Western: Lat/Long: 37° 08' 39" S / 149° 05' 03" E MGA: 685116 E 5887100 N

Procedures to obtain ambulance assistance

<ol style="list-style-type: none"> 1. Dial 000 2. If there is no mobile coverage, dial 112 (which will work on any accessible mobile phone system). 3. If no response on 112: <ul style="list-style-type: none"> • use a radio link (TARA, be discrete with personal information) • move to an area with mobile coverage • find a landline • use another network (e.g. a contractor's VHF radio) 	<p>The nearest Forestry Corporation of NSW office is: Bombala</p> <p>Contact on:- Channel: 165 Telephone: 1300 880 548</p> <p>Give details of the situation and ask for a 000 call to be placed.</p>
--	--

000 operator question:	Response:
1. Police, Fire, Ambulance?	Ambulance is required. Nearest control centre for ambulance: Wollongong
2. Suburb?	State Forest name: Bondi Nearest town or locality: Bombala Nearest ambulance station: Bombala
3. Address?	Chinamens Creek Road
4. Nearest road junction/cross street?	Old Mill Road and Little Bog Road
5. Local Government Area?	Snowy Monaro
6. Nature of the problem?	Describe the accident, number, age and condition of casualties. Are they conscious, are they breathing?
7. Where is the accident?	Refer to safety meeting point above
Directions to navigate from nearest ambulance station to the emergency meeting point.	From Bombala head south on Monaro Highway for approx. 10km, turn right onto Mila Road for approx. 12km, turning left onto Miralai Road for approx. 8km to the junction of Little Bog Road or turning right into Little Bog Road for approx. 3km turning right onto Old Mill Road for approx. 1km to the junction of Old Mill Road and Chinamens Creek Road.
8. 4WD ambulance required?	Yes/No: UHF radio channel to use:
9. Injuries?	Give detailed information about the condition of the casualty (do not mention names over radio system)

Element	Type	Number	Version	Owner	Date Effective	Review Date	
2	Tool/Resource	2.1.3	1.0	H & S Manager	July 2014	July 2016	Page 1 of 8
Site Safety Plan				This document is not controlled when printed			

10. Your name and call back number:

Element	Type	Number	Version	Owner	Date Effective	Review Date	
2	Tool/Resource	2.1.3	1.0	H & S Manager	July 2014	July 2016	Page 2 of 8
Site Safety Plan				This document is not controlled when printed			

Hardwood Forests Division

Harvest and Haul Plan



State Forest	Bondi	Compartment	1219
Management Area	Eden	IFOA Region	Eden
Harvest Plan No.	56798	Coupes	1 (part) & 2 (part)
Legal Conditions	<p>Native Forest Harvesting in accordance with IFOA conditions.</p> <p>Harvesting and Roding activities must have EPL coverage.</p> <p>To implement this plan you must hold a current Contractors Licence.</p> <p>Standard Harvest Plan Conditions and Operating Procedures apply.</p> <p>Survey expiry date for this plan is 13/03/2027.</p>		
Certification	Timber products removed from the plan area are within the Defined Forest Area covered by Australian Forestry Standard AS4708:2013 Certificate 604224		
Prepared by	Planner	Julia Clark	Date: 22.12.17
	Julia Clark		
Approved by	Operation Planning Mgr	Shane Clohesy	Date: 22.12.17
	Shane Clohesy		
Abbreviations	<p>PA = Production Assistant, PS = Production Supervisor, RC = Roding Coordinator, Crew = Harvest Contractor/Forest Operators, IFOA = Integrated Forestry Operations Approval, TSL = Threatened Species Licence, EPL = Environment Protection Licence, FL = Fisheries Licence, CH = Cultural Heritage, SOP = Standard Operating Procedure, HPOM = Harvest Plan Operational Map.</p>		

1. Harvest Area Details

	Cpt 1219	Total
Plan Compartment ID	56798	
Gross Area (ha)	95	95
Harvest Area	37	37
Estimated Yield (m ³)	8,288	8,288
Yield/ha	224	224
Slope (% 0-20 degrees)	100	100
Slope (% 20-25 degrees)	0	0
Slope (% 25-30 degrees)	0	0

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Contractor must ensure timber removed is allocated to the correct compartment when entered onto Delivery Docket.

2. Management Conditions on Boundaries

Boundary	Conditions
Private Property	Private property occurs adjacent to the northern boundary of the compartment, as indicated on the HPOM. Private property owner have been notified of the scheduled harvesting. The PP boundary must be located and marked by the PA.
FMZ	FMZ 4- General Management occur within the whole of the compartment.
National Park	National Park Victoria forms the southern boundary of coupe 1 of the compartment and is shown on the HPOM. The PA must mark the boundary as mapped. The crew must ensure access roads to the National Park are not impeded by forestry activities and the roads condition is maintained.
State Boundary	The state boundary form the southern boundary of Compartment 1219. Ensure that harvesting operation does not encroach over this boundary. This boundary must be marked by the PA.
Cultural Heritage	Surveys have been conducted. Exclusion zones for heritage items/places do not occur within the compartment. If any potential heritage sites are identified notify the planner immediately.

3. Expected Yields

Product Estimates	Volume
Sawlog	740m ³
Pulp	7,548m ³
Total	8,288m ³

Species	Species Mix (Sawlog)
FAS	25%
Gums	25%
PEP	50%

4. Haulage

Haul Route	<p>Western section: North on Cpt1219/1 Road to new road in private property to unnamed pine roads onto Little Bog Road. Turn left onto Miralai Road and then turning right onto Mila Road, turning right onto Monaro Highway and then turning left onto Imlay Road.</p> <p>Eastern section: North on Chinamen Creek and Old Mills Road, turning left on Little Bog Road, turning left onto Miralai Road and then turning right onto Mila Road, turning right onto Monaro Road and then turning left onto Imlay Road.</p>
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5. Community

Issue	Detail	Conditions
Notifications Required	Nil	All relevant notifications have been conducted. A notification list for FCNSW staff is available from the planner.
Permit to Enter Required	To access private property	Private property roads (Quinburra Road and Private Road) are not to be used for haulage until the Permit-to-Enter agreement has been signed. PA is to check with Harvest Planner for the status of this.
Neighbours		Harvesting activities are not to encroach onto private property on the northern boundary and Victoria forests on the southern boundary of the compartment.
Pests/Weeds	Myrtle Rust and other noxious weed	<p>Myrtle Rust is known to occur in Cooma-Monaro Shires. To prevent further spread the crew must ensure all harvesting machinery, equipment and vehicles heading west from Cooma-Monaro Shire or south into Victoria are checked and all infected vegetation removed.</p> <p>In order to avoid the spread of any noxious weeds, all harvesting and roading machinery and equipment must be washed down prior to entering the private property. Any vegetative material must be removed from machinery and equipment.</p>

6. Infrastructure

Infrastructure	Conditions
Livestock, gate and fenceline	There is a gate and wire fence between Lot 123 and pine plantation. Ensure that gate is kept shut to keep livestock in. Ensure no damage to the gate and fenceline.
Haulage route roads within pine plantation	Ensure roads are maintained and restored to their original condition prior to harvesting operation.

7. Harvesting Conditions

Silviculture Type	Harvesting Objectives and Condition for each stand condition
Modified Shelter-wood (MSW) Entire Harvest Area	<p>The harvest area is predominately mature to over mature Brown Barrel, Mountain and Manna Gums and Peppermints in mixed aged stands. The objective is to harvest all commercially available trees to create canopy openings and ensure mechanical disturbance creates a suitable seed bed for regeneration of the stands.</p> <p>Crew to target sawlogs, pulpwood and other miscellaneous products as markets allow.</p> <p>PA to instruct crew to retain patches (>0.5ha) of quality advanced regeneration where they occur.</p>

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	<p>Crew to remove all merchantable stems not marked for retention.</p> <p>The crew is responsible for protecting retained seed trees and retaining patches of advanced regeneration.</p>
--	--

IFOA Limits	MSW – Cpt 1219
Net Harvestable Area	66
Harvest Area	37
Planned Removal	56%

8. Tree Retention - refer to TSL booklet for full conditions

Prescription	Condition/Responsibility												
<p>Mark-Up – the PA is responsible for marking up the forest ahead of harvesting operations consistent with Forest Mark Up and Tree Retention SOP</p>													
<p>Compartment Mark-Up Survey (5.1, 5.2)</p>	<p>Compartment mark-up surveys must be conducted at least 100m in advance of operations. The survey must search for threatened and protected species features listed in conditions 5.1 and 5.2 of the TSL.</p>												
<p>Hollow-bearing and Recruitment tree retention (H and R)</p>	<p>Additional H trees for Greater Glider condition does apply. PA must verify the habitat quality and record on the habitat quality map. PA must select and mark H and R trees as per the habitat quality.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Habitat Quality</th> <th>H Trees/2ha</th> <th>R Trees/2ha</th> </tr> </thead> <tbody> <tr> <td>High</td> <td style="text-align: center;">12</td> <td style="text-align: center;">12</td> </tr> <tr> <td>Moderate</td> <td style="text-align: center;">8</td> <td style="text-align: center;">8</td> </tr> <tr> <td>Low</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> </tr> </tbody> </table>	Habitat Quality	H Trees/2ha	R Trees/2ha	High	12	12	Moderate	8	8	Low	4	4
Habitat Quality	H Trees/2ha	R Trees/2ha											
High	12	12											
Moderate	8	8											
Low	4	4											
<p>Significant Food Resources (5.6 k)</p>	<p>PA must mark for retention - 6 Eucalypt feed trees/2 ha where they occur, glider sap feed trees, stands of forest oak and forest oak feed trees.</p> <p><i>E. dalrympleana</i>, <i>E. viminalis</i> and <i>E. fastigata</i> are suitable E tree species present in this compartment.</p>												
<p>Harvesting - crew and PA responsibilities</p>													
<p>Protection of Retained Trees (5.6g)</p>	<p>Trees marked or selected for retention must not be felled.</p> <p>The crew must minimise damage to H, R and E trees by using directional felling.</p> <p>Harvesting debris should not accumulate within 5 m of retained trees. Where debris does accumulate the crew must remove or flatten to < 1m high.</p> <p>The PA must be notified of any badly damaged retained trees and they must assess and record if a replacement retained tree is required.</p>												
<p>Stag Retention (Dead standing trees 5.6e)</p>	<p>The crew should retain stags where safe to do so.</p>												

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	The crew must record the date, DBH, risk and location of unsafe stags removed
Significant food resources	The crew should avoid damaging flowering or fruiting banksias or grass trees.

9. Site-Specific Flora and Fauna

Condition	Boundary Type	Prescription
Riparian Habitat Protection (5.7) (Lidar Corrected)	Pink Tape	Implement filter strip/stream exclusion zone around drainage features as shown on the HPOM. Refer to SOP1. PA must mark the location of all mapped 1 st order drainage lines and UMDL. The crew will locate and protect all 2 nd order and above streams with GPS.
Ridge & Headwater Habitat (RHH) (5.8)	Pink Tape	RHH is mapped in the compartment. The PA must mark as an exclusion the RHH boundary as shown on the HPOM. The crew must protect all areas of marked RHH.
Wetlands (5.9)	Pink Tape	Wetlands are mapped in the compartment. The PA must mark as an exclusion the wetland boundary as shown on the HPOM. The crew must protect all areas of marked wetland.
Rough Eyebright (<i>Euphrasia scabra</i>)	Pink Tape	Rough Eyebright (<i>Euphrasia scabra</i>) records are located within this compartment. No individuals of these plants have been located within the net harvest area during ecological surveys, however, if an individual is located (See appendix 1 for plant profiles), the PA must mark a 10m exclusion zone around each individual plant (6.18, TSL). If colonies of more than 5 individuals are found apply 6.18 (d), TSL. Notify Senior Ecologist. The crew must protect all marked areas of exclusion zones.
Fish	N/A	Compartment 1219 contains Class 1 Aquatic Habitat. All streams, drainage lines, wetlands and other water bodies within the compartment are Class 1 Aquatic Habitat. Only crossings shown on the HPOM can be used.

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10. Soil & Water – Refer to EPL Booklet for full conditions

Issue	Assessment	Conditions
EPL Scheduled Activity	Yes	
Inherent hazard level	1	Nil
Dispersible Soils	No	Nil
Mass Movement / Instability	No	Nil
Seasonality conditions	No	Nil
Historical or existing erosion	No	Nil
Ground cover	>70%	Nil
Seasonal Burning conditions	No	Nil
Log Dumps	SOP 5	PA is responsible for authorising moving the location of a log dump.
Roading management during harvesting	SOP 6	Refer to SOP 6. PA is responsible for monitoring road and crossing drainage during haulage.
Wet Weather and Rutting	SOP 6	Crew is responsible for implementing automatic closures and following notified closures. PA is responsible for ensuring crew notified when notified closure is lifted.
Snigging	SOP 8	Crew is responsible for progressive drainage of snig tracks
Snig Track Crossings	SOP 9	PA is responsible to ensure snig track crossings are approved prior to use and rehabilitated upon completion.

11. Crossing Approvals

All crossing approvals are shown on the operational map – any other feature crossings must be assessed, recorded below and approved by the Operations Planning Manager before use.

Crossing	EPA Approval	Conditions
Existing C1, Mapped 3 rd order DL	N/A	See details in Section 15, Roading Plan.
Existing C2, Mapped 2 nd order DD	N/A	See details in Section 15, Roading Plan.

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Existing C3, Unmapped DD	N/A	See details in Section 15, Roding Plan.
Existing C4, Mapped 1 st Order DL	N/A	See details in Section 15, Roding Plan.
New C5, Mapped 1 st Order DL	N/A	See details in Section 15, Roding Plan.

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14. Standard Operating Procedures: The following SOP's apply to this plan. FCNSW staff and the crew must hold a copy on site whilst operating and comply with the conditions set out in each SOP.

Procedure Number	Title
1	Drainage Feature Protection
2	Exclusion Zone Boundary Management
3	Forest Mark-Up
4	Operating in Inherent Hazard Level 3 Areas
5	Log Dump Operation and Use
6	Road and Crossing Management and Wet Weather Controls
7	Safety Requirements
8	Snigging and Snig Track Crossing
9	Documentation and approvals

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15. **Roading Plan:** Maintenance works not completed by RC must be recorded and passed onto the PA for completion and documentation. The start and finish dates of all maintenance and construction must be recorded on the individual roading sheets along with other relevant changes or explanations. All rubber flaps on minor forest roads must be removed and replaced with trafficable rollover banks on completion of operation.

Summary of roading requirements		
Feature	Details	Works Required
Existing roads to be used.	1500m/3	Yes
New roads to be constructed	1155m/3	Yes
Existing crossings used	4	Yes
New crossings to be constructed	0	N/A
Length of road >10°	0m	NA
Borrow pits and gravel pits	0	NA
Mass movement prescriptions apply	No	NA
Dispersible soil conditions apply	No	NA
Seasonality provisions apply	No	NA

Checklist of works required on roads & crossings				
Road/Crossing Name	Works Required	Date Started	Date Finished	Initials
Quinburra Road (in private property) (550 m) <i>FCNSW Responsibility</i>	Brush off regrowth on road and road side vegetation. Clear and reshape road pavement for truck passage. Ensure that the total width of the road does not exceed a maximum of 6m. Install drainage structures to allow for sufficient drainage of road. Place 100mm rock at trench at E685223 N5887173 to smooth out pavement surface. For the section on cleared paddock, use haulage route as mapped and pegged in field over natural vegetated (grass) surfaces. Rehabilitate upon completion of operation if required by ripping compacted soil and blading off to reform surface to natural state. (PA to liaise with private property owner regarding the need for this rehabilitation.) RC/PA Comments:			
Campbell Break Road (640 m) <i>Contractor Responsibility</i>	Brush off road side vegetation. Clear up to 3m on either side. Maintain and install drainage structures according to EPL specifications. RC/PA Comments:			

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<p>Cpt1219/1 Road (310 m) <i>Contractor Responsibility</i></p>	<p>Brush off road side vegetation. Clear up to 3m on either side. Maintain and install drainage structures according to EPL specifications.</p> <p>RC/PA Comments:</p>			
<p>Private Road (600 m) <i>Contractor Responsibility</i></p>	<p>Use haulage route as mapped and pegged in field. Confine usage to a maximum road prism of 6m. Rehabilitate upon completion of operation if required by ripping compacted soil and blading off to reform surface to natural state. (PA to liaise with private property owner regarding the need for this rehabilitation).</p> <p>RC/PA Comments:</p>			
<p>Cpt1219/2 Road (285 m) <i>Contractor Responsibility</i></p>	<p>Construct new road with a maximum road prism of 7m. Install drainage as per EPL.</p> <p>RC/PA Comments:</p>			
<p>Cpt1219/3 Road (270 m) <i>Contractor Responsibility</i></p>	<p>Construct new road with a maximum road prism of 7m. Install drainage as per EPL.</p> <p>RC/PA Comments:</p>			
<p>Crossing C1 – Existing on Quinburra Road (E685310 N5887194) <i>FCNSW Responsibility</i></p>	<p>Mapped 3rd Order drainage line. 600mm pipe culvert with headwalls and outlet.</p> <p>Line road pavement and approaches within 20m with gravel/rock on eastern approach and for 50m on the western approach. Install road drainage structures on both approaches outside of wetlands.</p> <p>Refer to the Fisheries Licence Conditions 8.2 & 8.4 – 8.6.</p>			

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	RC/PA Comments:			
Crossing C2 – New on Private Road (E685009 N5886872) <i>Contractor Responsibility</i>	Mapped 2 nd order drainage line, occurs as a drainage depression in the field. Natural causeway. Gravel crossing and approaches if wet. RC/PA Comments:			
Crossing C3 – Existing on Cpt1219/1 Road (E684817 N5886246) <i>Contractor Responsibility</i>	Unmapped drainage depression. Natural causeway. Clear overgrown vegetation on road pavement. Maintain and install drainage structures at 5 – 30m on both approaches if required. RC/PA Comments:			
Crossing C4 – Existing on Campbell Break Road (E684776 N5886135) <i>Contractor Responsibility</i>	Mapped 1 st Order drainage line. 450mm relief pipe. Clean out inlet and outlet. Rock armour if wet. Install drainage structures at 5 – 30m on both approaches according to EPL specifications. RC/PA Comments:			
Crossing C5 – Existing on Cpt1219/3 Road (E684866 N5886110) <i>Contractor Responsibility</i>	Mapped 1 st order drainage line. Natural causeway. Construct crossing during period of no or low stream flow to minimise sedimentation. Gravel crossing and approaches. Ensure that the rock is spread over the natural bed level on both upstream and downstream side to avoid causing a waterfall effect and creating a physical fish passage barrier. Maintain and install drainage structures at 5 – 30m on both approaches according to EPL specifications. Refer to the Fisheries Licence Conditions 8.2 & 8.4 – 8.6. RC/PA Comments:			

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Rough Eyebright - profile

Scientific name: *Euphrasia scabra*

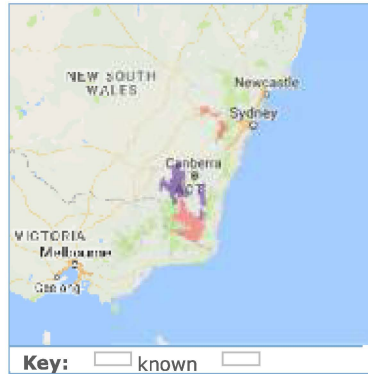
Conservation status in NSW:
Endangered

Commonwealth status: **Not listed**

Gazetted date: 13 Aug 1999

Profile last updated: 20 May 2014

Indicative distribution



The areas shown in pink and purple are the sub-regions where the species or community is known or predicted to occur. They may not occur throughout the sub-region but may be restricted to certain areas. ([click here](#) to see geographic restrictions). The information presented in this map is only indicative and may contain errors and omissions.

Description

Rough Eyebright is a semi-parasitic, annual herb, growing to about 0.5 m tall. The stems branch just below the flower-clusters (inflorescence). The leaves are variable on individual plants; those closer to the inflorescences tend to be narrower and have more teeth. The leaves are stalkless with up to five pairs of teeth and a terminal tooth. The green calyx (the 'base' of the flower) is four-lobed and covered in hairs. The yellow flower tube is five-lobed.

Distribution

There are ten old herbarium collections of Rough Eyebright from NSW (including Port Jackson, Bathurst Plains, Lake George, Jindabyne, Yarrangobilly Caves and Tumbarumba). The species is regarded as extinct in South Australia. There is one population in Tasmania and seven in Victoria. There are three extant populations in NSW: Bondi State Forest, South East Forests National Park and near Nunnock Swamp. Total NSW population is between 250 and 500 plants. This number varies with season with few plants appearing in some years.

Habitat and ecology

- Occurs in or at the margins of swampy grassland or in sphagnum bogs, often in wet, peaty soil.
- An annual species.
- Most flowering collections of the species have been made between January and April.
- Appears to be self-fertilising but seed production is variable, perhaps depending on season.
- Although parasitic, the species does not appear to be host-specific.

Regional distribution and habitat

Click on a region below to view detailed distribution, habitat and vegetation information.

- **Central West**
- **Hawkesbury-Nepean**
- **Murrumbidgee**
- **Southern Rivers**

Threats

- Large, unexplained spatial fluctuations in population numbers
- Low population numbers increase risk of local extinction from other threats
- NSW populations are threatened by pig and deer damage.
- Competition from the vigorous native Purple Loosestrife (*Lythrum salicaria*) and blackberries.
- Changes to swamp hydrology and vegetation.
- *Holcus lanatus* and emerging threat of blackberry; direct competition with *Euphrasia*.
- Staff unaware of the species - possible destruction of the site through vehicle access.
- Populations are threatened by grazing by stray domestic stock.
- Populations are threatened by off-road vehicular disturbance.

Recovery strategies

A targeted strategy for managing this species has been developed under the Saving Our Species program; click [here](#) for details. For more information on the Saving Our Species program click [here](#)

Activities to assist this species

- Undertake pig and deer control.
- Searches should be made for the species in autumn where developments or activities may have an impact on potential habitat (such searches are normally done in spring when most other species are in flower).
- Damage to or changes in hydrology of swampy vegetation must be avoided.
- All vegetation within 200 m of swamps supporting the species should be retained and not disturbed.
- Fence the populations to exclude stock and vehicles; otherwise limit movement through the populations.
- Undertake weed control where required. Avoid spraying weeds close to Rough Eyebright to ensure they are not impacted by poison.
- Consult with State Forests to ensure the roadside population is not inadvertently destroyed.
- Undertake searches for other populations in likely habitats in areas the species is known to have previously occupied.

Information sources

- Harden, G.J. (ed.) (1993) *Flora of New South Wales Vol. 4*. UNSW Press, Kensington, NSW.
- NSW Scientific Committee (1999) *Euphrasia scabra* (a herb) - Endangered species determination - final. DEC (NSW), Sydney.
- Walsh, N.G. and Entwisle, T.J. (1999) *Flora of Victoria; Volume 4, Dicotyledons Cornaceae to Asteraceae*. (Inkata Press, Melbourne)

Images



Rough Eyebright, Jackie Miles Image 1 of 4.
[View slideshow.](#)

Related information

[Euphrasia scabra \(a herb\) - Scientific Committee determination](#)

[NSW Flora Online - Euphrasia scabra](#)

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