Hensleigh Creek rd – Rainforest logging breach
Coupe: 892-508-0006

Fauna Flora RESEARCH COLLECTIVE

Goongerah Environment Centre Office

Location: Hensleigh Creek rd, East Gippsland, coupe 892-508-0006

Date of survey: 5/4/2015

Date of final report: 14/4/2015

Report authors: Ed Hill and Owen Hanson

Surveyors: Ed Hill, Owen Hanson, Jo Henderson

Photo: Southern Sasafrass (*Atherosperma Moschatum*) and Black Olive Berry (*Elaeocarpus holopetalus)* illegally pushed over into a rainforest gully within coupe 892-508-0006 (Photo: Ed Hill).

Summary:

This report has been submitted to the Department of Environment, Land, Parks and Water (DELWP) and VicForests by Goongerah Environment Centre (GECO) and Flora and Fauna Research Collective (FFRC). The report details logging of cool temperate rainforest in coupe 892-508-0006 which our organisations believe is in breach of the *Flora and Fauna Guarantee Act* (1988) (FFGA). Our organisations urge you to immediately cease logging operations in coupe 892-508-0006 and conduct an immediate investigation into logging operations that have occurred within the FFGA protected rainforest community.

Our organisations visited the site of 892-508-0006 on Monday 5th April and documented the presence of a Cool Temperate Rainforest gully within the coupe boundary where large rainforest canopy species had been bulldozed.

We believe that logging of Cool Temperate Rainforest had taken place in breach of the *Flora and Fauna Guarantee Act (1988)* and the *Sustainable Forests (Timber) Act* 2004.

We conducted a survey to identify the presence of rainforest character species and canopy species in an attempt to reconstruct and calculate the area of rainforest affected by the logging operation.

Photo: Logged rainforest gully in coupe 892-508-0006, note large rainforest canopy species in foreground. (Photo: Ed Hill).

Methods:

GPS was used to mark the boundary of a 0.95ha study area. Recently cut Eucalyptus tree formed the boundary of the study area. The study area design was based around excluding Eucalypt trees form it. Following the directions set out in “A Field Guide to Rainforest Identification in Victoria: Differential species keys for the delineation of rainforest boundaries” (Cameron 2008), in particular the section dealing with “East Gippsland Cool Temperate Forest Floristic Field Identification Key”, species listed as either “Differential Species for East Gippsland Cool Temperate Rainforest” or species listed as “Differential Species for East Gippsland Montane Wet Sclerophyll Forest” were searched for within the study area.

The Differential Species Key was used to identify rainforest and wet sclerophyll character species within the study area. Rainforest and Wet Sclerophyll character species listed in Rainforest and Cool Temperate Mixed Forests of Victoria (Peel, 1999) were also noted.

Photo: 2.92m circumfrence Black olive berry tree showing GPS location. Photo (Ed Hill)

Photo: Mature Black olive berry tree pushed into rainforest gully showing GPS location.

Methods:

Tape measures were used to measure the circumference at 1.3m from the base of each tree. Tree heights and canopy widths of rainforest canopy species such as Black olive berry *(Elaeocarpus holopetalus*) and Southern Sassafras (*Atherosperma moschatum*) were also noted. Measurements were recorded in notebooks in the field before being entered into data sheets.

Cool Temperate Mixed Forest species were identified outside of the study area using Cool Temperate Mixed Forests of Victoria (Peel 1999). Species on Peel's (1999) list were recorded to assess the extent of what may have been Cool Temperate Old Growth Mixed Forest outside the rainforest study area.

Photo:
Garmin GPS and measuring tape used to measure circumfrence of rainforest cannopy species and mark locations. (Photo: Ed Hill)

Results:

Using the Differential species key we identified six rainforest character species and four wet sclerophyll character species.

Figure 1:
Presence of differential species for East Gippsland Cool Temperate Rainforest, East Gippsland Montane Wet Sclerophyll forest and presence of rainforest canopy species within study area in coupe 892-508-0006

Differential species for East Gippsland Cool Temperate Rainforest	**Presence of species**	**Differential species for East Gippsland Montane Wet Sclerophyll**	**Presence of species**
Southern Sassafras *Atherosperma moschatum*	Present	Austral Bracken *Pteridium esculentum*	N/A
Common Finger-fern *Grammitis billardierei*	Present	Sword Tussock-grass *Poa ensiformis*	N/A
Delicate Hook-sedge *Uncinia tenella*	Present	Elderberry Panax *Polysias sambucifolia*	N/A
Mother Spleenwort *Asplenim Bulbiferum*	Present	Silver Wattle *Acacia dealbata*	Present
Shade Nettle *Australina pusilla*	Present	Tasman Flax-lily *Dianella tasmanica*	N/A
Veined Bristle-fern *Crepidomanes Venosem*	N/A	Soft Crane's-bill *Geraniun potentilloides*	N/A
Ray Water-fern *Belchnum fluviatile*	N/A	Cut-tail *Eucalyptus fastigata*	Present
Fieldia *Fieldia australis*	N/A	Forest Geebung *Persoonia silvatica*	N/A
Shiny Filmy-fern *Hymenophyllum flabellatum*	N/A	Mountain Cotula *Leptinella filicula*	N/A
River Hook-sedge *Uncinia nemoralis*	N/A	Common Cassinia *Conssinia aculeata*	N/A
Twining Silkpod *Parsonsia brownii*	N/A	Musk Daisy-bush *Olearia argophylla*	Present
Pretty Grass-flag *libertia pulchella*	N/A	Blanket Leaf *Bedfordia arborescens*	Present
Tall sedge *Carex appressa*	Present	Common Bottle-daisy *Lagenophora stipitata*	N/A
Mountain Tea-tree *Leptospermum grandifolium*	N/A	Dusty Daisy-bush *Olearia phlogopappa*	N/A
Errinundra Plum-pine *Podocarpus aff. lawrencei*	N/A	Hairy Pennywort *Hydrocotyle hirta*	N/A
		Victorian Christmas-bush *Prostanthera lasianthos*	N/A
Total differential spieces	**6**		**4**
Cool-temperate Rainforest Canopy species	Sassafras Black Oliveberry Blackwood	Present Present Present	

Results:

37 mature rainforest canopy trees where identified and measured within the gully. A Sassafras tree *(Atherosperma moschatum*) recorded a circumference of 2m. The largest Black olive berry (*Elaeocarpus holopetalus*) measured had a circumference of 3.7m. All trees measured were on the ground, most had been pushed over by machinery or struck by large Eucalypt trees that had been felled into the gully.

The average circumference (cm) at breast height measurement of the 32 Black olive berry trees was 2232cm.

Tree heights greater than 20m for rainforest canopy species such as Black Olive berry and Sassafras were also recorded.

A canopy measurement of one exceptionally large Black olive berry was possible as the crown of the tree was still intact after logging. The canopy width was 13.5m.

Pools of water were located in the top of the gully, indicating the presence of a stream that once flowed through the rainforest gully, now choked with logging debris.

Photo: 3.63m circumfrence of Black olive berry.

Photo: 2.95m circumfrence Sasafrass.

Results:

Cool Temperate Mixed Forest species such as Twining silk pod *(Parsonsia brownii)*, Warratah (*Telopea oreades*), Geebung (*Persoonia silvitica*), Black Olive berry (*Elaeocarpus holopetalus*), Black wood (*Acacia melanoxylon*), Elderberry Panax (*Sambucifolia polyscias)*, Austral Mulberry(*Hedycarya angustifolia*), Banyalla(*Pittosporum bicolor*), Mountain Pepper (*Tasmania lanceolata)* and Tree Lomatia (*Lomatia fraseri*) were found outside of the study site amongst the logging debris.

Eucalypt trees outside the rainforest area in areas that may have been Cool Temperate Mixed Forest recorded very large circumfrence measurements. Notable examples were an 11m circumfrence stump near the log landing and a 10m fallen Eucalypt up slope from the area we sampled most heavily.

Photo: Large pool of water (2m x 2m) found in rainforest gully, showing GPS location
(Photo: Owen Hanson)

Photo: Large pool of water (2m x 2m) found in rainforest gully.
(Photo: Owen Hanson)

Photo: 11.15m Eucalypt stump adjacent to the rainforest gully study area.

Photo: Giant Cut Tail (*Eucalyptus fastigata)* 10m in circumfrence,
adjcent to the rainforest study area. This tree should have been protected within a rainforest buffer zone.

Figure: 2:
Rainforest Canopy species recorded in study area, showing species, location, circumfrence, cannopy height and width.

Names of people present Ed Hill, Joe Henderson, Owen Hanson

Date 5/04/14 Coupe No. 892-508-0006

No.	Waypoint	Canopy Sp.	Location (UTM/UPS ; GDA 94)			Girth (mm)	Tree/Canopy (m) Height	Width	NB.
1	RFBBO01-	E.holopetals	55H	671711	5877345	1850			
2	RFBBO02-	E.holopetals	55H	671719	5877344	1650			
3	RFBBO03-	E.holopetals	55H	671172	5877344	2290	19		
4	RFBBO04-	E.holopetals	55H	671710	5877348	1780			
5	RFBBO05-	E.holopetals	55H	671706	5877346	2490			
6	RFBSA01-	A.moschatum	55H	671708	5877345	600			
7	RFBBO06-	E.holopetals	55H	671703	5877338	900			
8	RFBBO07-	E.holopetals	55H	671701	5877340	1000			1
						730			
						970			
9	RFBBO08-	E.holopetals	55H	671689	5877331	1800			2
10	RFBBO09-	E.holopetals	55H	671712	5877370	2850			
11	RFBBO10-	E.holopetals	55H	671712	5877370	2850			
12	RFBBO11-	E.holopetals	55H	671711	5877376	1650			
13	RFBBO12-	E.holopetals	55H	671713	5877400	1750			
14	RFBBO13-	E.holopetals	55H	671726	5877387	3350	19	13.5	3
15	RFBBO14-	E.holopetals	55H	671758	5877402	2290			
16	RFBBO15-	E.holopetals	55H	671757	5877406	1610			
17	RFBBO16-	E.holopetals	55H	671757	5877405	2200			
18	RFBSFS1	A.moschatum	55H	671708	5877342	2000	25		
19	RFBBO1	E.holopetals	55H	671708	5877348	3700	20		
20	RFBSFS2	A.moschatum	55H	671712	5877347	510	20		
21	RFBBO2	E.holopetals	55H	671720	5877335	1850	15		
22	RFBBO3	E.holopetals	55H	671724	5877340	1750			
24	RFBBO4	E.holopetals	55H	671714	5877326	2070			
25	RFBBO5	E.holopetals	55H	671708	5877321	1700			
28	RFBBO6	E.holopetals	55H	671705	5877315	1700			4
29	RFBBO7	E.holopetals	55H	671708	5877320	1700			4
30	RFBBO8	E.holopetals	55H	671707	5877315	1200			
31	RFBBO9	E.holopetals	55H	671687	5877308	1400			4
32	RFBBO10	E.holopetals	55H	6 71796	5877432	2920			1
						1400			
						2000			
33	RFBBO11	E.holopetals	55H	671741	5877414	2550			
34	RFBBO12	E.holopetals	55H	671738	5877415	2100			
36	RFBBO13	E.holopetals	55H	671743	5877425	1400			
36	RFBBO14	E.holopetals	55H	671788	5877421	2170			
37	RFBBO15	E.holopetals	55H	671793	5877432	3000			

NB.

1	Triple leader from ground height. All leaders measured separately
2	Becomes 6 leaders at >1500mm height.
3	Exceptionally large individual. Bulldozer track pushed in, specifically to puch over tree.
4	Estimated circumfrence, measurement physically impossible due to logging debris
5	Measurement taken just before crown, stump not located underneath logging debris

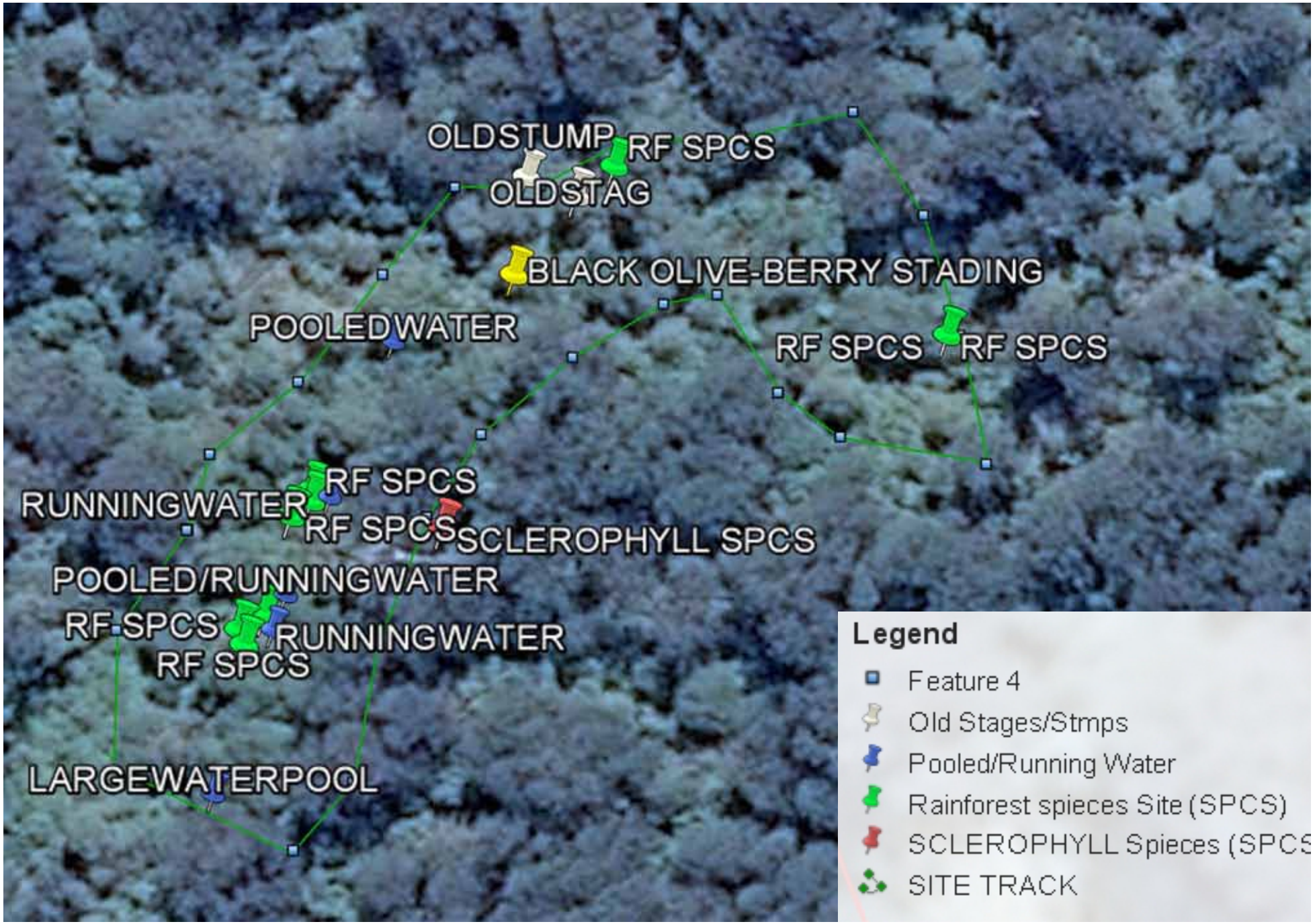
Figure 3:
Presence/ Absence of Cool Temperate Rainforest and Cool Temperate Mixed Forest Character Species (Peel, 1999) in study area and on adjoining slopes.

				Cool Temperate Rainforest	Cool Temperate Mixed Forest		
		Study Site (in gully)	Adjoining Slopes	Character Species	Character Species	Epiphytic Growth	Arborescent Growth
		Presence Y/N	Presence Y/N				
Species Scientific Name.	**Species Common Name.**						
Acacia dealbata	Silver Wattle	Y	Y	Y	Y		
Acacia frigescens	Frosted Wattle			Y	Y		
Asplenium bulbiferum ssp. Gracillimum	Mother Spleenwort	Y	Y	Y			
Atherosperma moschatum	Sothern Sassafras	Y	Y	Y	Y	Y	Y
Australina pusilla ssp. Muelleri	Shade Nettle	Y	Y	Y			
Blechnum fluviatile	Ray Water-fern			Y			
Blechnum patersonii	Strap Water-fern			Y			
Blechnum watsii	Hard Water-fern		Y	Y	Y		
Clematis aristata	Mountain Clematis	Y	Y	Y	Y		
Coprosma quadrifida	Prickly Currant-bush	Y	Y	Y		Y	Y
Dianella tasmanica	Tasman Flax-lily		Y		Y		
Dicksonia antarctica	Soft Tree-fern	Y	Y	Y	Y		
Elaeocarpus holopetalus	Black Oliveberry	Y	Y	Y	Y	Y	Y
Eucalyptus denticulata	Errinundra Shining Gum	Y	Y	Y	Y		
Eucalyptus obliqua	Messmate				Y		
Fieldia australia	Fieldia			Y			
Gahnia Sieberiana	Red-fruit Saw-sedge				Y		
Grammitis billardieri	Common Finger-fern	Y	Y	Y	Y		
Hedycarya angustifolia	Austral Mulberry		Y	Y			Y
Histiopteris incisa	Bat's Wing Fern	Y	Y	Y	Y		
Hymenophyllum flabellatum	Shiny Filmy fern			Y			
Lastreopsis acuminata	Shiny Shield-fern						
Lomatia fraseri	Tree Lomatia	Y	Y		Y	Y	Y
Microsorum pustulatam	Kangaroo Fern			Y			
Notelaea ligustrina	Privet Mock-olive				Y		
Olearia argophylla	Musk Daisy-bush	Y	Y	Y		Y	Y
Parsonsia brownii	Twining Silkpod		Y	Y	Y		
Pittosporum bicolor	Banyalla	Y	Y	Y	Y	Y	Y
Polyphlebium venosum	Veined Bristle-fern			Y			
Polyscias sambucifolia	Elderberry Panax		Y		Y		Y
Polystichum proliferum	Mother Shield-fern	Y	Y	Y	Y		
Prostanthera lasianthos	Victorian Christmas-bush	Y	Y		Y		Y
Sambucus gaudichaudiana	White Elderberry	Y	Y	Y			
Stellaria flaccida	Forest Starwort			Y	Y		
Tasmannia lanceolata	Mountain Pepper	Y	Y	Y	Y	Y	Y
Tasmannia xerophila ssp. Robusta	Errinundra Pepper				Y		
Telopea oreades	Gippsland Waratah	Y	Y	Y	Y	Y	Y
Uncinia nemoralis	River Hook-sedge			Y			
Uncinia tenella	Delicate Hook-sedge	Y	Y	Y	Y		
Viola hederacea	Ivy-leaf Violet			Y	Y		

Photo: Large Sassafras canopy, pushed over by bulldozer (Photo: Ed Hill)

Photo: Large Black Olive Berry with canopy width measurement of 13.5m pushed over by bulldozer in rainforest gully (Photo: Ed Hill)

Figure 4: Map of study area. Study area outlined in green.



Discussion:

The recent heavy disturbance caused by logging of the rainforest site placed constraints upon the survey effort. Identifying small rainforest character species such as finger fern (*Grammitis billadierie*), delicate hook sedge (*Uncinia tenalla),* shade nettle a (*Australina pusilla*) and mother spleenwort (*Asplenium bulbiferum)* was made extremely difficult as the environment they occur in had been heavily impacted by logging operations.

Most of the gully had been completely filled in by the canopy of mature black olive berry and Sassafras, which now lie flat on the ground covering the understory in the gully below. While six of the character species from the differential key were identified throughout the area, if the survey had been conducted prior to logging more species may have been identified.

The design of the study area was based around the gully feature where Eucalypt trees were absent. The stumps of recently cut Eucalyptus trees formed the boundary so that sampling within the area could focus on rainforest canopy species that were present. Time constraints did not allow every rainforest canopy species in area to be identified and measured, however it is highly likely many more mature rainforest canopy species that have been bulldozed would also be found and measured with more time.

The average circumference (cm) at breast height of the 32 measured Black olive berry trees was 2232cm. This gives an indication of the stand age of the rainforest canopy species and the extent of the canopy cover that would have been present in a stand of rainforest canopy trees of this size.

Photo: Large Black olive berry measured and location recorded. (Photo: Ed Hill)

Discussion:

The abundance of many large, mature canopy species such as Black olive berry and Sassafras within the gully indicates the presence of a closed forest community with a projected canopy cover of greater than 70%. The extent of the rainforest community that has been impacted upon by logging operations is likely to be up to 1ha in size. Within the 0.95ha study area six rainforest character species from the Differential species key were identified and 37 mature rainforest canopy trees were identified and measured. The large circumference of the stems of pushed over rainforest canopy trees and their abundance in the gully indicates that prior to logging the gully contained closed canopy rainforest with a >70% foliage cover.

A Black olive berry canopy width measurement of 13.5m x 7.5m was recorded when measuring the crown of the tree that was pushed over by logging machinery in the rainforest gully. This mature rainforest tree had been pushed over by a bulldozer that had entered the rainforest gully for no apparent reason other than to knock the tree down. The circumference of this Black olive berry was 3350cm, one of the larger trees measured. As several other large Black olive berry and large Sassafras trees are present throughout the area, we would expect to find similar large canopy widths. Due to time constraints and the inability to safely access the fallen rainforest canopies of Sassafras and Black olive berry, other canopy width measurements were not taken. The presence of so many large rainforest canopy species, many of them likely to have had similar canopy widths to the canopy we measured, indicates that the area was closed canopy Cool Temperate Rainforest.

Photo: Bulldozer track that has entered the rainforest gully to push over the mature Black olive berry with a 13.5m X 7.5 cannopy width.

Discussion:

Epiphytic growth of mosses, lichens and liverworts on the upper canopy branches of the fallen Black olive berry trees suggests the environment had dense canopy cover to create the humid conditions needed for these plants to thrive.

Photos: Large cannopy of fallen Black olive berry with liverworts (above) and mosses and lichens (below) on the upper branches of the recently fallen the cannopy.

Discussion:

Possible presence of Old Growth Cool Temperate Mixed Forest

The study area contained no Eucalypt trees and the boundaries were chosen to map the extent of what would most likely have been closed canopy rainforest without the presence of Eucalypts. We focussed our survey effort in this area to document the presence of rainforest. When going to and from the study area we observed the area below and towards the coupe landing may have been Old Growth Cool Temperate Mixed Forest, another threatened community protected under the FFGA Act.

Time constraints prevented a thorough survey to identify and measure rainforest canopy species outside the study area. Passing through this area we noted several large Black olive berry, Blackwood and other Cool Temperate Mixed Forest species listed by Peel (1999). The presence of many pushed over large rainforest canopy species amongst Eucalypts stumps indicates the area was likely to have displayed similar structural elements to Cool Temperate mixed forest with large rainforest canopy species beneath emergent tall Eucalypts. The area is not mapped as old growth, however giant Eucalypt trees and mature rainforest canopy trees were present throughout it. One Eucalypt stump was measured to be over 11m in circumference. Further areas of Cool Temperate Mixed Forest that have not yet been logged may still be present in the coupe. Other areas where logging has been completed may also have been Cool Temperate Old Growth Mixed Forest.

Logging of Old Growth Cool Temperate Mixed Forest in coupe 892-508-0006 may also be in breach of the FFG Act and we urge you to investigate the extent of Cool Temperate Mixed Forest that has been affected by the logging operation.

Photo: View looking down logged rainforest gully, taken from near the southern end of the study area (Photo: Ed Hill).

Discussion:

A mapped rainforest community is present in the southeastern corner of the coupe. Logging operations are yet to reach this area and if allowed to proceed could impact upon it. Given that VicForests has failed to mark out the area of rainforest that has already been logged and that logging contractors have failed to identify this rainforest and have illegally logged into the gully, we have little faith in the ability of VicForests and the logging contractors to prevent further damage to protected rainforest communities elsewhere in the logging coupe. Any further bulldozing/tree extraction/burning could continue to disturb the gully we have surveyed. Therefore an immediate cessation of logging operations is needed to investigate logging of rainforest that has already occurred and prevent further damage to other areas of rainforest within and adjacent to coupe 892-508-0006.

During our survey we walked to boundary of the coupe to check if the rainforest along the southern boundary had been affected by logging. Most of this section of coupe was uncompleted at the time of writing. However we identified what could be another rainforest breach in completed coupe 892-508-0002, adjacent to coupe 892-508-0006. Fading light conditions prevented us from measuring the distance from the edge of the rainforest to where logging has occurred in coupe 892-508-0002, however the presence of stumps and disturbed gorund in close proximity to the rainforest boundary warrants further investigation and we urge you to inspect this site to check for other rainforest breaches.

Figure 3:
Coupe boundary of 892-508-0006 outlined in red. Area of study site outlined in green, mapped rainforest marked with white overlay and location of stump in coupe 892-508-0002 in close proximity to rainforest marked with red pin point. Source data: Google Earth, GPS way points recorded during survey.

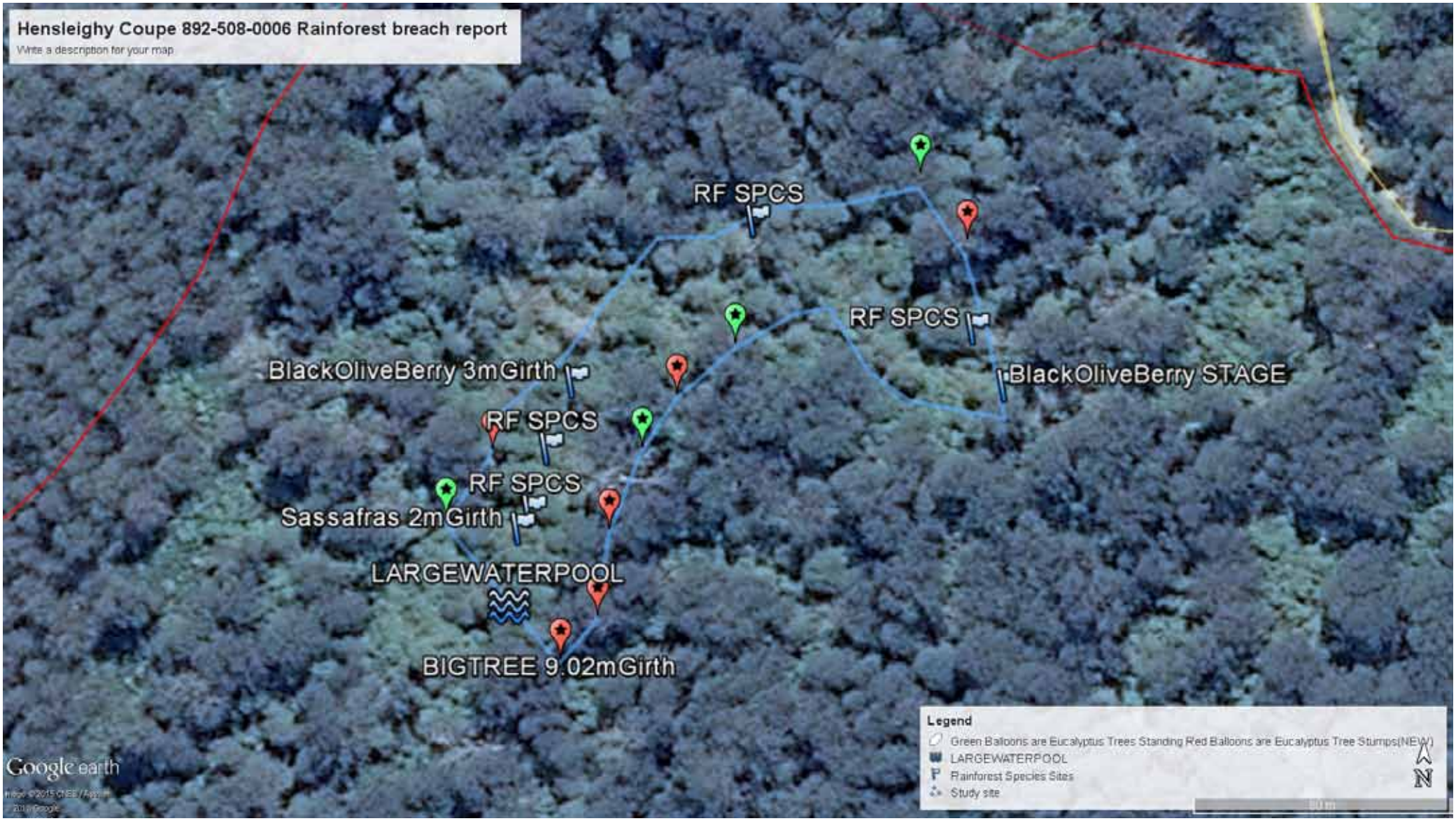


Figure 2: Boundary of study area showing logged Eucalyptus trees on boundary as red markers, standing Eucalyptus trees as green markers. RFSPCS represesnts sites where rainforest character species from the differential key were present. Sassafras 2m Girth and Black Olive Berry 3m Girth indicate location of large pushed over rainforest cannopy trees with circumfrence measurements. Note the clear difference in cannopy cover (color and texture) within the study area that was rainforest prior to logging.

Photo: GPS location of Delicate hook sedge *(Uncinia tenalla),* Shade Nettle *(Australina pusilla)* and Finger Fern *(Grammitis billadierie)* identified in logged rainforest gully. (Photo: Owen Hanson)

Photo: GPS location of Tall sedge *(Carex appressa)* in logged rainforest gully (Photo: Owen Hanson).

Photo: Delicate hook sedge *(Uncia tenalla),* Shade nettle *(Australina pusilla)* and Mother Spleen wort *(Asplenium bulbiferum),* identified in logged rainforest gully. (Photo: Owen Hanson)

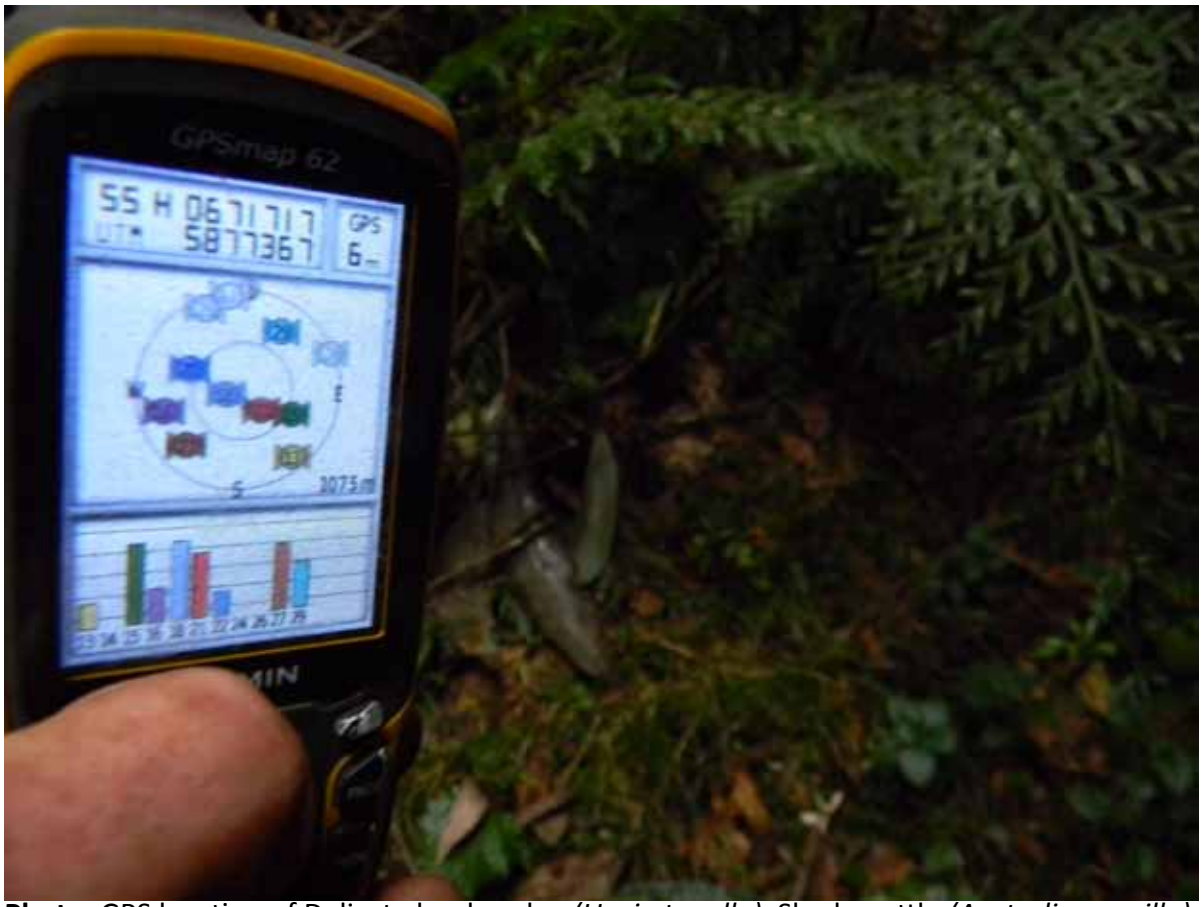


Photo: GPS location of Delicate hook sedge *(Uncia tenalla),* Shade nettle *(Australina pusilla)* and Mother Spleen wort *(Asplenium bulbiferum),* identified in logged rainforest gully. (Photo: Owen Hanson)

Photo: Mature Black olive berry rainforest cannopy tree, bulldozed into rainforest gully. (Photo: Ed Hill)

Photo: Bulldozed Black olive berry cannopy that was measured at 13.5m across (Photo: Ed Hill)

Photo: Mature Sassafras trees, bulldozed in rainforest gully (Photo: Ed Hill)

Photo: Mature Sassafras and Black olive berry rainforest cannopy trees, bulldozed in rainforest gully (Photo: Ed Hill).

Photo: Bulldozed mature Black olive berry in rainforest gully

Photo: GPS location of bulldozed mature Black olive berry in rainforest gully. (Photo: Ed Hill)

Photo: Bulldozed rainforest cannopy species in coupe 892-508-0006 (Photo: Ed Hill)

Photo: Large Sassafras and Black olive berry rainforest cannopy trees, pushed into rainforest gully. (Photo: Ed Hill).

Recommendations:

We strongly urge you to:

- **Carry out a through investigation of this breach**
- **Immediately stop all logging operations in coupe 892-508-0006**
- **Investigate another potential rainforest breach in neighbouring coupe 892-508-0002**
- **Investigate the extent of Old Growth Cool Temperate Mixed Forest in the coupe and if logging of this forest type has breached the FFGA**
- **Prosecute VicForests if the outcome of the investigation concludes rainforest has been unlawfully logged.**

References:

Cameron, David, *A Field Guide to Rainforest Identification in Victoria: Differential species keys for the delineation of rainforest boundarie***s, Victorian Government Department of Sustainability and Environment, Melbourne, 2008**

Peel, Bill, *Rainforests and cool temperate mixed forests of Victoria***. Department of Natural Resources and Environment, 1999.**