March 8th 2015

Detections of *Cyathea cunninghamii* and possibly *Cyathea X marcescens*

Location

GPS –Between approximately 55 H 655040 5841687 and 655036 5841458

GPS signal was weak (at least 25-14 metres out)

Closest Road – Larissa Lane

Forest Block – Kuark

Catchment – 2nd order stream of the Arte River

An aerial overview can be seen in Figure 1.

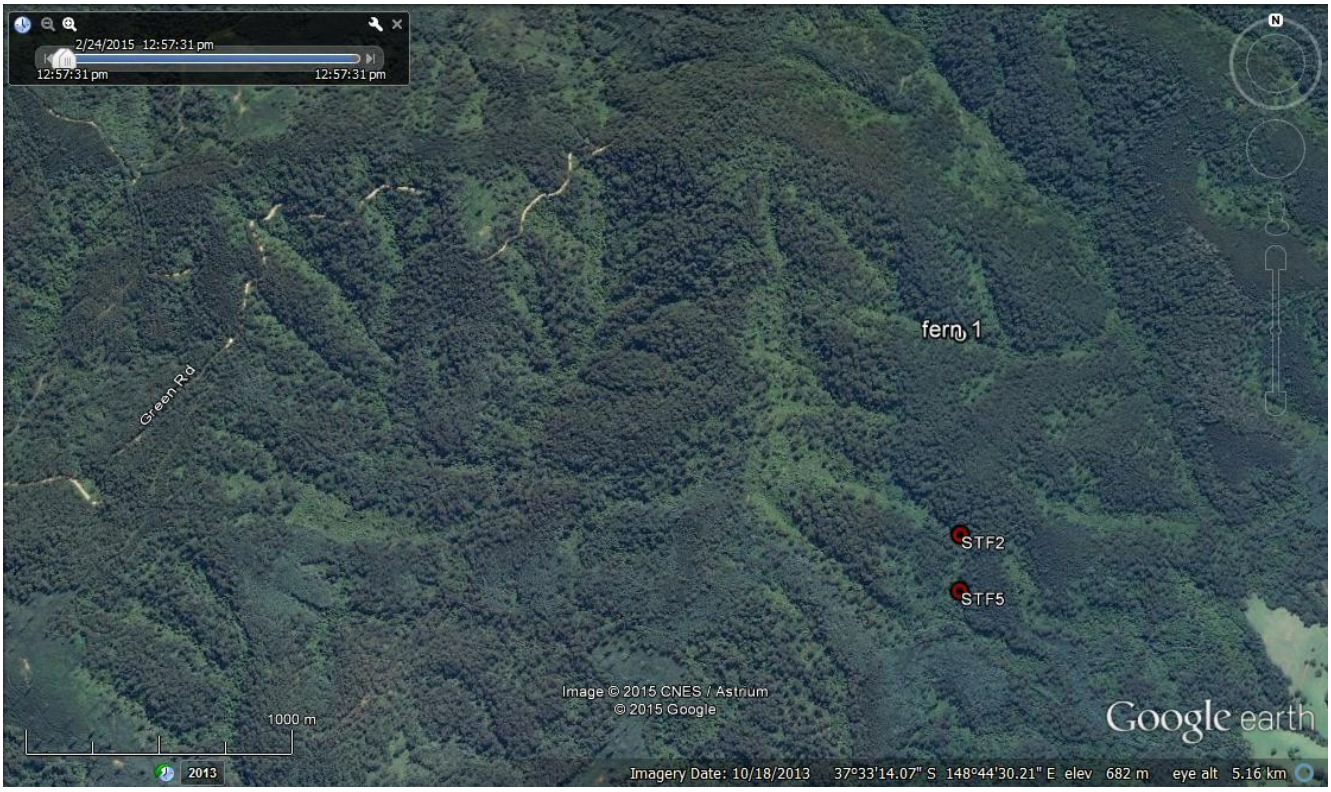

Figure 1 Ferns are located in the gully with the red circles. The white circle to the North is the gully containing *Cyathea cunninghamii* detected in 2014. The road in the left top corner is Greens Road, the cleared land in the right bottom corner is Pikes Farm.

Site Description

The gully was very steep and contained crossover cool and warm temperate rainforest. All slender and possible skirted tree ferns occurred within two metres of a permanent stream. The ferns were all found along a 300m stretch of the creek.

Figure 2. Probable slender tree fern *C. cunninghamii.* The person in the photo has their fingers around the trunk. (Image by K. Sanyu)

Identification

Five ferns were located however there were no spores so the ferns were identified through life form appearance, particularly trunk size and colour, geographic location (vicinity to the stream) and EVC. All ferns were marked with pink tape to make future verification easier as GPS was not reliable. Three ferns were identified as probable *C. cunninghamii*, one fern was either probable *C. cunninghamii* or *C. X marcescens* (the trunk was possibly too large for the former) and one was probable *C. X marcescens*. Actual trunk circumference was not taken. Images of the ferns with individual detail can be viewed below. Ferns are described in the order they were found from north to south.

Fern 1 in figure 2 was identified as a *C. cunninghamii*. It was approximately two metres from the creek on the south side. The fern was approximately three metres high and the circumference of the trunk around 23cm. with the latter measurement taken in retrospect by measuring the fingers afterwards. There is no GPS point for this fern, however it is marked with pink tape and is located less than 100 metres north of fern 2.

Figure 3a-c is of a possible skirted tree fern *C. X marcescens.* The three pictures join up to show the tall fern. (Top two images, a and b, K. Sanyu; bottom image S. Barry)

Fern 2 (figure 3a-c) was identified as a possible *C. X marcescens.* It was located right on the creek and was approximately 15 metres high. The basis of this identification was the fact that there were no occurrences of *C. australis* until higher up the slopes, the frond length appeared smaller than those of *C. australis* and the trunk near the fronds was smooth. A GPS reading was taken for this fern but accuracy was only 28 metres (55H 0655041, 5841687).

Fern 3, (figure 4) was actually two *C. cunninghamii* both approximately 4 metres tall, located right on the creek growing out of a *Dicksonia antartica* trunk. GPS was again only down to 20 metres accuracy (55 H 0655046 5841681).

Figure 4. Two slender tree ferns *C. cunninghamii* can be seen in this photo one, in foreground and another in the left background. The thin size of the trunk in the foreground is emphasised by the person in the front of the photo. (Image by K. Sanyu)

Fern 4 (figure 5a and b)was identified as either *C. cunninghamii* or *C. X marcescens* as although its form resembled *C. cunninghamii* the trunk circumference may have been too large. This fern was around 2.5 metres tall and situated on the creek. GPS accuracy was down to 14 metres (55 H 655037, 5841458).

Figure 5 b (above) shows the thin circumference at the base of the trunk but 'a' (top image) shows a thicker circumference higher up making identification between *C. cunninghamii and X marcescens* difficult without spores. (Image K. Sanyu)

Threats

Logging

There is a scheduled logging operation to the north and west side of this gully, coupe no. 830 510 0004, that is due to commence this year. The ferns occur within a rainforest gully and so if adequate buffers are actually put in place correctly, this will give some form of protection from logging operations. However, there is a chance tall trees may accidentally be felled into the buffer because of the steep slope, and as buffers are usually no more than 60 metres, whereas some of the Eucalypt trees are taller than this. Changes in the microclimate of the rainforest gully by removal of the adjacent tall wet forest may also occur with likely increases in wind, increased temperature extremities and changes in floristics.

Deer

No deer sign was seen in the unlogged forest or the rainforest gully however deer tracks were present on the dozer track in the adjacent logged area. The intact forest is difficult for deer to penetrate, however once cleared this area will provide tracks for these animals to access the rainforest gully which can cause severe damage to this threatened community and the threatened species within it.

These threats can easily be avoided by changing logging operations in this area. This is an opportunity that land mangers do not often have as threats are usually more complex and require a lot more money and research to overcome.