

Report for Botanical and Habitat Survey & Assessment of Luttrell's Property and Immediate Environs, Musa Vale Road, Eerwah Vale, Sunshine Coast, Queensland

(Lat. Long 26deg 28' 06" – 152deg 53' 01" GDA Centroid for 300m radius survey area)

INTRODUCTION

A foot traverse survey and assessment of the Luttrell property and adjoining areas on Musa Vale Road, Eerwah Vale was carried out on the 16th and 17th of April 2009. This work was carried out at the behest of the Powerlines Action Group Eumundi (PAGE). The purpose of the survey was to record all vascular plant species, including any Federally and/or State listed threatened species, and to confirm and establish the identity of remnant vegetation in reference to the EPA Regional Ecosystem mapping (2003). In particular a search was made of the subject area to find the possible location of the State listed 'Near Threatened (Rare)' plant species *Pararistolochia praevenosa* – **Richmond Birdwing Vine** larval food plant of the State listed 'Vulnerable' *Ornithoptera richmondii* – **Richmond Birdwing Butterfly**. Records were also kept of any native fauna species, which were observed during the survey of the subject area. The survey also included looking for any potentially suitable habitats for any significant or listed, 'Threatened' animal species.

SITE DESCRIPTION

The subject property is situated at the headwaters of the Maroochy River on the slopes of northern extremity of the Blackall Range and approximately 7km WNW of the Eumundi Township. The area surveyed is at the southern end of the proposed route siting location of the Powerlink Woolooga to Cooroy South Transmission Line and Substation. The aspect of the Luttrell property faces more or less southeast looking towards the peak of Mount Eerwah, across the upper reaches of the Maroochy River valley.

Geology: The predominant geology of the subject site is of Metamorphosed rocks forming ranges, hills and lowlands, which are primarily lower Permian and older sedimentary formations (Kin Kin beds), and are generally moderately to strongly deformed. This includes the rock type Pyhllite, which is described as being grey-brown, moderately hard, fine-grained rock showing a finely-spaced layering (foliation) with a lustre or sheen caused by recrystallised mica minerals. Layering of it is moderately to steeply inclined. Underlying this at lower level and sometimes exposed are granitic rocks, which includes (Eerwah Vale Tonalite). It is described as being poorly exposed granite and tonalite underlying the low valley west of Eumundi. Tonalite is fully described as a dark grey granitic rock consisting mainly of quartz, plagioclase feldspar, biotite and hornblende. Soils derived from these geologies are typically of low to moderate fertility. (Willmott W.F. & Stevens N.C. 1988)

Vegetation: Much of the vegetation along the slopes of the Blackall Range in the subject area being surveyed is classed as remnant under the criteria provided by the Qld Vegetation Management Act 1999 reprint 26th Oct 2008. It appears that this vegetation has been retained over recent years as cover to protect the steep slopes of the range since the initial selective logging and thinning occurred many years ago. Due to the steepness of its

slopes the subject area would have been considered unsuitable for crops or grazing, except possibly for small scale banana growing. However even this may have proven marginal and untenable, because the slopes are very erodible without a cover of natural vegetation.

According to the 2003 Regional Ecosystem (RE) Mapping provided by the Dept. Of Environment, Natural Resources and Mines (Previously Environmental Protection Agency) the remnant vegetation of the subject site is a 50% x 50% mix of **RE 12.11.2** *Eucalyptus saligna* or *Eucalyptus grandis*, *Eucalyptus microcorys*, *Eucalyptus acmenoides*, *Lophostemon confertus* tall open forest on metamorphic ± interbedded volcanics, and **RE 12.11.10** Notophyll vine forest ± *Araucaria cunninghamii* on metamorphic ± interbedded volcanics. (These are only short descriptions as provided in the Queensland's Bioregional Ecosystems, Chapter 12, Southeast Queensland, Version 5.0). While the description of **RE 12.11.2** accurately depicts the remnant vegetation occurring at the subject site, particularly on upper slopes, the remnant vegetation surveyed at the subject site does not necessarily fit the longer description given for **RE 12.11.10**. The longer description of RE 12.11.10 mentions *Argyrodendron trifoliolatum*, *Argyrodendron* sp. (Kin Kin W.D.Francis AQ 81198), *Choricarpia subargentea*, *Dissiliaria baloghioides*, *Brachychiton discolor*, *Beilschmiedia obtusifolia*, *Diospyros pentamera*, *Grevillea robusta*, *Gmelina leichhardtii* and *Ficus macrophylla* as being characteristic species for this Regional Ecosystem. Only two of these species were found occurring in the extant vine forest at the site, whereas the dominant canopy species recorded from the site included *Flindersia schottiana*, *Litsea leefeana*, *Neolitsea dealbata*, *Olea paniculata*, *Harpullia pendula*, *Endiandra discolor*, *Pseudoweinmannia lachnocarpa* and occasionally *Araucaria bidwillii* rather than *Araucaria cunninghamii*. The plant families Lauraceae, Euphorbiaceae and Sapindaceae were well represented by species recorded in the vine forest (rainforest) canopy and mid-stratum at the site. (See attached plant list for other species recorded during survey of the subject site with common names etc. provided)

THE RESULTS AND FINDINGS OF THE SURVEY & ASSESSMENT

Plants: A total of 189 plant species have been recorded from the subject area. The plant species list is a combination of plants recorded by Dave Burrows - Sunshine Coast Land for Wildlife Officer on the 22nd January 2009 and by Paul Grimshaw - Consultant Ecologist on the 16th and 17th of April 2009. Of the total number of plant species nineteen (19) are exotic, introduced species (weeds). Sixteen (16) of the total number are pteridophytes (ferns or fern allies), three (3) are gymnosperms (pines or cycads), one hundred and thirty nine (139) are dicotyledons (2 seed leaves) and thirty one (31) are monocotyledons (1 seed leaf).

Plants and Invertebrates: Five specimens of the 'Near Threatened (Rare)' **Richmond Birdwing Vine** have been recorded and were seen during the survey in the vine forest gully east of the Luttrell's residence. One specimen is approx. 2m+ high, while the other specimens were smaller. The finding of this vine species in this gully and the recent sightings of the 'Vulnerable' **Richmond Birdwing – *Ornithoptera richmondia*** butterflies, (Whose larvae are reliant on this host plant species) in the same vicinity has led to the belief that there are some bigger more mature vines somewhere in the immediate

area. To this end during the 2 day survey a large proportion of the search effort concentrated on finding some bigger vines in the survey area. While no larger Richmond Birdwing Vines were found during this search much of the vine forest inspected did appear to be suitable habitat, with many of the typical Birdwing vine associated and indicator plant species being present. There are some deep gullies and steep slopes in the subject area with suitable habitat still to be investigated, where some larger Birdwing vines could occur.

***Pararistolochia praevenosa* - Richmond Birdwing Vine** fruit is a fleshy capsule, which tends to fall to the forest floor when ripe. The main vector of the seed of this vine has been observed to be the Australian Brush Turkey. When a turkey finds the fruit on the vine forest floor it rakes and scratches the fruit with its robust clawed feet to get at the flesh, which it eats. This action (scarification) by the turkey tends to scatter and bury the fine seed, which had been inbedded in the fleshy fruit, over a small area. This suggests the reason why Birdwing Vines occur in small occasional clusters rather than being commonly present over wide areas. Also the vines are reliant on relatively fertile moist soils usually derived from specific geologies and in specific habitats. As well as habitat clearing and degradation this is why the Richmond Birdwing Vine is so rare and vulnerable. Another feature of the Richmond Birdwing Vine, which most probably helps to contribute to its threatened status is that the vine is reliant on a single small species of midge for the pollination of its tubular flowers. If the conditions of the habitat, where the pollinating midge occurs, are not just right or are disturbed or degraded in any way there is a strong possibility that the midge may be not be present to pollinate the Birdwing Vine flowers. Consequently the vines will not set fruit and with fruit not being available there are no seeds available to germinate.

During the survey of the subject site two individual specimens of the **Regent Skipper – *Euschemon rafflesia*** butterfly were seen in the vine forested gully to the east of the Luttrell residence. While the Regent Skipper is not a listed threatened species in Queensland it is gradually becoming rare due to the loss of suitable habitat of its two larval host plant species ***Wilkiea macrophylla*** and ***Wilkiea huegeliana***. The vine forest areas in the vicinity of the Luttrell's residence and the surrounding area has one of the densest populations of one of the host food plant species ***Wilkiea macrophylla*** that the author has ever observed, some of which were quite large (4m+). This dense, healthy population of this host plant species is therefore important to the survival of the Regent Skipper butterfly in the local area.

The **Bordered (Australian) Rustic** is another butterfly species which is declining, at least in southern Queensland and far northern New South Wales, due to habitat destruction (D.P.A. Sands). One of its main larval, host food plant species is the small to medium sized vine forest tree ***Scolopia braunii* – Flintwood**, plants of which were recorded on three occasions in the subject area during the survey. A **Bordered Rustic** butterfly was also observed resting on sunlit vegetation in the vine forest gully to the east of the Luttrell residence.

On the second day of the survey an exciting and interesting sighting of the large **Green Emperor – *Anax gibbosulus*** dragonfly was made near the Luttrell's residence. The dragonfly was probably attracted by the two small lily pond dams close to the house. It

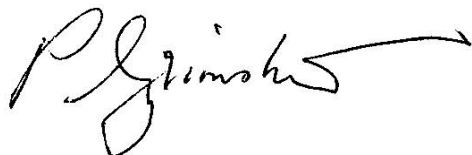
wasn't until 19th February 2006 that the Green Emperor dragonfly was first discovered occurring in south-east Queensland at Elanda Point at Cooloola. Prior to this the species was only known to occur as far south as Rockhampton. Mrs Janet Luttrell also has a digital image that she took a short while ago of this beautifully marked, brightly coloured dragonfly, which had landed on a flyscreen at the Luttrell residence. It is now being speculated by dragonfly experts that the **Green Emperor** dragonfly is moving further south in Queensland due to global warming.

Birds: The local vine forest and the adjoining wet sclerophyll remnants are important habitats and food sources for a number of native frugivore bird species. These species include White-headed Pigeon, Emerald Dove, Topknot Pigeon, Brown Cuckoo-Dove and Green Catbird, all of which were observed at the site during the survey. A flock of at least 50 Topknot Pigeons as well as other smaller flocks were seen circling around and landing at various locations at or near the subject site. The vine forest at the site is also important habitat for flycatcher species. Three flycatchers, Spectacled, Black-faced and Black-eared Monarch, and two fantails, Rufous and Grey Fantail were all observed utilizing the vine forest sites around the Luttrell residence. A native warbler species the Fairy Gerygone was also observed feeding in the canopy of low trees on the edge of the same vine forest patches during the survey. The Australian Bird Atlas 'Birdata' data base has only two records of Fairy Gerygone further south than this very recent record at Eerwah Vale. One 'Birdata' record is just 4km south of Eumundi and the most southern 'Birdata' Fairy Gerygone record is at Buderim approximately 36km further south of the Eerwah Vale area. This makes the record of the Fairy Gerygone on the Luttrell property at Eerwah Vale quite significant, because it is at the southern extent of this species range. (See attached a bird list of all species recorded at the subject site during the survey period 16th – 17th April 2009).

Potential for Erosion: During this recent survey it was observed that the 225mm (9inches) of rain, which had fallen in less than 24hrs on the previous Monday 13th April had caused considerable erosion and washing in the subject area. Even where there was a total cover of native vegetation on the steep slopes there was evidence of some sheet erosion and loss of ground litter due to water run-off. In some steep areas on toe-slopes, where there was a mix of sparse native plant cover, Lantana bush and weedy herbaceous ground cover, some considerable land slipping, rill and sheet erosion had occurred. In more than one location steep stream banks had collapsed and large sheets of soil, subsoil up to 10m x 3m, and plant cover including small trees had tumbled into the stream-bed. Fortunately upstream of these eroded areas there is a solid cover of native vegetation otherwise the erosion damage would be much greater and the siltation of the watercourse below would have been disastrous. Therefore it is critical and essential that the remnant vegetation that has been retained along the subject area escarpment be left undisturbed to protect the headwaters of this important and major catchment. It is also important for the case against the spread of exotic and noxious weeds and the integrity of remnant vegetation that further clearing and disturbance does not occur in the subject area.

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Paul Grimshaw (Principal Ecologist/Botanist)
1 Belah Street Mt Crosby, Qld, 4306
Ph: 07 3201 0477; Email: paul.grimshaw@bigpond.com