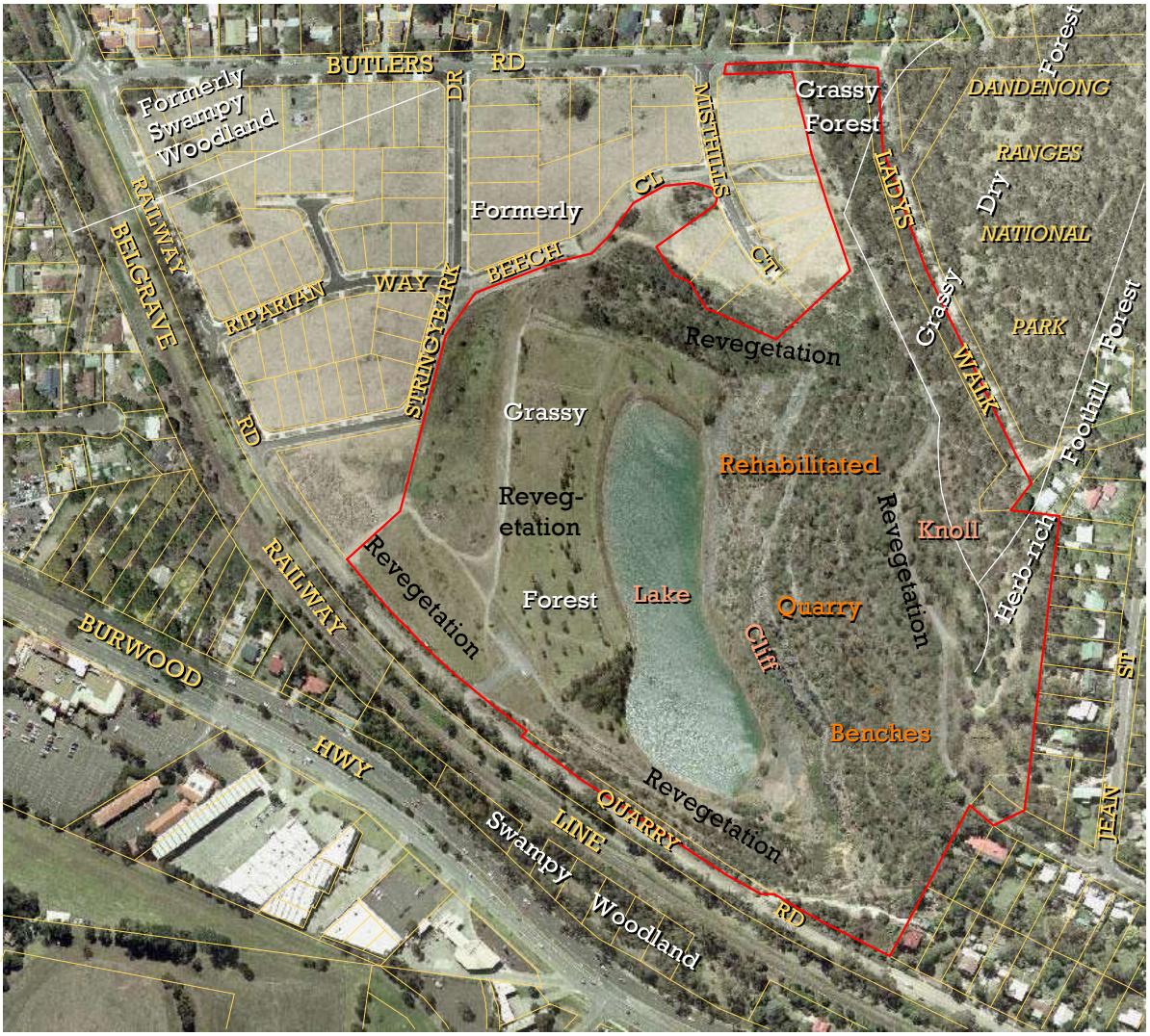
Site 4. Former CSR Ferntree Gully Quarry

Former quarry land containing a lake, cliffs, revegetation areas and peripheral remnant vegetation.
Melway ref. 74 D4.

Site Significance Level: *State*

- Part of the remnant vegetation belongs to the vulnerable EVC, Grassy Forest, in reasonable condition;
- Peregrine Falcons nest annually on a cliff face;
- The site's vegetation and habitat buffers the adjacent Dandenong Ranges National Park.



Aerial photograph taken February 2007

Boundaries

This site's boundary appears in red above. Most of it coincides with property boundaries; however it includes the full vegetated width of the road verges along Ladys Walk, Butlers Rd and part of Quarry Rd.

Note: The steeper, more heavily vegetated slopes were not accessible due to hazards. Some native ground flora would have gone undetected.

Land use & tenure: Former quarry and adjoining roadside, all owned by Knox City Council.

Site description

This former quarry site is on the edge of the rhyodacite geology that forms the Dandenong Ranges. Elevations of the natural ground level vary from 127 m in the western corner to 216 m on the marked knoll. The natural soil is a light grey loam over clay subsoil.

The quarry benches on the eastern side have a steeply stepped profile, with some cliffs towards the bottom that provide nesting sites for Peregrine Falcons. These benches have been revegetated with a mixture of natural regeneration and planting with Australian species, many of which are indigenous. The benches on the other sides of the former quarry pit have been smoothed out to form a steep slope down to a lake at the base. There are some recent revegetation plots on these slopes.

When this area was inspected for this study in 2002, the area bordered by Butlers Rd, Railway Rd and the site described here contained regenerating indigenous plants, weeds and a patch of degraded native vegetation. All of this was destroyed by 2007 to develop the new subdivision seen on the aerial photograph. The patch of native vegetation belonged to two endangered vegetation types and the regenerating plants included at least twelve plants of the uncommon shrub species, Golden Spray (*Viminaria juncea*). The vegetation lost was of Regional significance.

Beside the eastern end of Butlers Rd, there is a narrow strip of vegetation that contains a mixture of remnant plants, weeds and planted plants that once provided visual screening of the quarry. This strip of vegetation continues beside Ladys Walk, where there is a transition from Grassy Forest to Grassy Dry Forest. The roadside verge of Ladys Walk is badly affected by environmental weeds that have become established largely because of the effects of the road's construction and ongoing runoff and soil disturbance.

The least modified native vegetation on the site is in a strip below Ladys Walk, between the old quarry fence and a vehicle track.

The quarry benches east and southeast of the lake have dense infestations of the declared noxious weeds,. Pines also threaten to become a serious problem.

Revegetation on the verge of Quarry Rd and on the slope that extends from there down to the lake is at an adolescent stage and is providing habitat for native birds and insects, but is starting to become invaded by Montpellier Broom and Boneseed. This area also contains a reasonable cover of naturally regenerated indigenous plants, particularly grasses.

Relationship to other land

The Peregrine Falcons that nest on the cliffs may hunt in the adjoining Dandenong Ranges National Park, a site of National significance.

Some other species of birds and insects probably undertake daily or seasonal movements along the railway corridor (Site 88) and into the park via the quarry site and treed properties on either side. The role of the quarry site for such movements will be substantially strengthened once the revegetation is more advanced and extensive.

The environmental weeds along Ladys Walk and within the quarry fence present a risk of infestation into the park. Fortunately, the park is uphill, and many weeds do not spread very rapidly uphill.

Bioregion: Highlands Southern Fall

Habitat types

Because hazards prevented access to some of the site, and because so much of the vegetation is in such a state of transition due to revegetation or natural regeneration, it has not been possible to fully quantify the amount of vegetation in each category of ecological condition (A to D).

Grassy Dry Forest (EVC 22, conservation status rated 'Least Concern' in the bioregion). Estimated as 1·2 ha in area, comprising 0·35 ha in good ecological condition (rating 'B') and 0·85 ha in fair ecological condition (rating 'C').

Dominant canopy trees: *Eucalyptus goniocalyx* and *E. macrorhyncha*.

Dominant lower trees: *Exocarpos cupressiformis*, abundant in the more intact areas.

Shrubs: *Acacia implexa, A. myrtifolia, A. pycnantha, A. stricta*, *Cassinia aculeata* and *C. longifolia*.

Vines: Sparse *Comesperma volubile*.

Ferns: *Adiantum aethiopicum* is present but not abundant.

Ground flora: Dominated by *Rytidosperma pallidum*. Other abundant species are *Rytidosperma* species, *Dianella* species, *Lomandra filiformis, Poa morrisii, Senecio* species and *Themeda triandra*. *Lepidosperma laterale* is a character species.

Herb-rich Foothill Forest (EVC 23, conservation status rated 'Least Concern' in the bioregion)

Based on the vegetation surrounding this site, combined with topographic and geological maps, it appears that Herb-rich Foothill Forest would once have occurred in the site's southeastern corner (as shown on the aerial photograph). Most of this has been quarried, but vestiges probably persist in a degraded state behind the houses on Jean St. Access to this part of the property could not be arranged.

Grassy Forest (EVC 128, **regionally Vulnerable**). Estimated as occupying 0·34 ha, comprising 0·23 ha in good ecological condition (rating 'B') and 0·11 ha in fair ecological condition (rating 'C').

Dominant canopy trees: *Eucalyptus obliqua, E. goniocalyx, E. macrorhyncha* and *E. radiata*.

Dominant lower trees: *Exocarpos cupressiformis* and *Acacia melanoxylon*, abundant in the more intact areas.

Shrubs: Dominated by *Bursaria spinosa* (a common phenomenon after disturbance of Grassy Forest). Other species include *Acacia pycnantha, A. stricta*, *Cassinia arcuata, C. aculeata, Olearia lirata* and *Ozothamnus ferrugineus*.

Vines: The light twiners *Comesperma volubile, Glycine clandestina* and *Hardenbergia violacea* are found in the less disturbed patches. The more vigorous *Pandorea pandorana* is present in small numbers.

Ferns: None seen, but perhaps present out of sight from the fenceline.

Ground flora: The indigenous ground flora is greatly reduced in density and depth. Dominated by *Gahnia radula* and *Themeda triandra*. Other abundant species are *Carex breviculmis, Rytidosperma* species, *Dianella longifolia Lomandra filiformis, Microlaena stipoides, Poa morrisii, Schoenus apogon* and *Senecio* species.

Plant Species

The list below was compiled mostly in 2002 for the enlarged site described in the first edition of this report. Based on the areas that have since been cleared and my inability to gain entry through the security fence, I expect that at least 50 species remain in 2010, possibly more than 70. The column headed 'Risk' indicates the indigenous species' risk of extinction in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable. In addition, *Viminaria juncea* is uncommon throughout the Melbourne region.

Risk	Indigenous Species
V	*Acacia implexa*
V	*Acacia mearnsii*
V	*Acacia melanoxylon*
E	*Acacia myrtifolia*
	Acacia paradoxa
E	*Acacia pycnantha*
E	*Acacia stricta*
V	*Acaena agnipila/ echinata*
	Acaena novae-zelandiae
	Acrotriche serrulata
V	*Adiantum aethiopicum*
	Arthropodium strictum
	Austrostipa pubinodis
	Austrostipa rudis subsp. *rudis*
	Burchardia umbellata
	Bursaria spinosa
	Carex appressa
	Carex breviculmis
	Cassinia aculeata
	Cassinia arcuata
V	*Cassinia longifolia*
E	*Cassytha melantha*
E	*Cassytha pubescens*
V	*Comesperma volubile*
V	*Coprosma quadrifida*
E	*Daviesia latifolia*
	Deyeuxia quadriseta
	Dianella admixta
V	*Dianella longifolia* s.l.
	Dichelachne rara
	Dichondra repens
E	*Dipodium roseum*
V	*Drosera peltata* subsp. *auriculata*
	Elymus scaber

Risk	Indigenous Species
V	*Epacris impressa*
	Epilobium hirtigerum
V	*Eucalyptus cephalocarpa*
	Eucalyptus goniocalyx
E	*Eucalyptus macrorhyncha*
V	*Eucalyptus obliqua*
V	*Eucalyptus ovata*
E	*Eucalyptus radiata*
V	*Euchiton collinus*
E	*Euchiton involucratus*
V	*Exocarpos cupressiformis*
	Gahnia radula
V	*Glycine clandestina*
	Gonocarpus tetragynus
	Goodenia ovata
V	*Hardenbergia violacea*
V	*Helichrysum luteoalbum*
E	*Hypericum gramineum*
	Juncus pallidus
E	*Juncus procerus*
E	*Juncus subsecundus*
	Lachnagrostis filiformis
	Lepidosperma elatius
V	*Lepidosperma laterale*
	Leptospermum continentale
	Lomandra filiformis subsp. *coriacea*
	Lomandra filiformis subsp. *filiformis*
	Lomandra longifolia
V	*Lythrum hyssopifolia*
	Microlaena stipoides
C	*Muellerina eucalyptoides*
V	*Olearia lirata*
V	*Opercularia varia*
	Oxalis exilis/perennans

Risk	Indigenous Species
E	*Ozothamnus ferrugineus*
	Pandorea pandorana
E	*Pimelea curviflora*
V	*Plantago varia*
V	*Platylobium formosum*
	Poa morrisii
	Poranthera microphylla
	Rytidosperma linkii var. *fulvum*
	Rytidosperma pallidum
V	*Rytidosperma pilosum*
	Rytidosperma racemosum
	Rytidosperma setaceum
	Rytidosperma tenuius
	Schoenus apogon
	Senecio hispidulus
E	*Senecio prenanthoides*
	Senecio quadridentatus
	Themeda triandra
	Tricoryne elatior
C	*Viminaria juncea*
E	*Viola hederacea*

Introduced Species		
Acacia baileyana	*Cynodon dactylon*	*Pennisetum clandestinum*
Acacia longifolia subsp. *longifolia*	*Cynosurus echinatus*	*Pinus radiata*
Acetosella vulgaris	*Cyperus eragrostis*	*Pittosporum undulatum*
Agapanthus praecox	*Dactylis glomerata*	*Plantago coronopus*
Agrostis capillaris	*Daucus carota*	*Plantago lanceolata*
Allium triquetrum	*Dittrichia graveolens*	*Plantago major*
Anthoxanthum odoratum	*Ehrharta erecta*	*Polygala myrtifolia*
Asparagus asparagoides	*Erica lusitanica*	*Prunella vulgaris*
Asparagus scandens	*Foeniculum vulgare*	*Rubus anglocandicans*
Aster subulatus	*Galium aparine*	*Rumex crispus*
Briza maxima	*Genista linifolia*	*Setaria parviflora*
Bromus catharticus	*Genista monspessulana*	*Sonchus oleraceus*
Bromus diandrus	*Hedera helix*	*Sporobolus africanus*
Bromus hordeaceus	*Helminthotheca echioides*	*Taraxacum officinale* spp. agg.
Centaurium erythraea	*Holcus lanatus*	*Tradescantia fluminensis*
Centaurium tenuiflorum	*Hypochoeris radicata*	*Trifolium angustifolium*
Chamaecytisus palmensis	*Juncus articulatus*	*Trifolium arvense*
Chrysanthemoides monilifera subsp. *monilifera*	*Leontodon taraxacoides*	*Trifolium dubium*
Cirsium vulgare	*Linum trigynum*	*Trifolium repens*
Conyza bonariensis	*Lolium rigidum*	*Ulex europaeus*
Coprosma repens	*Melaleuca armillaris*	*Vicia sativa*
Cortaderia selloana	*Modiola caroliniana*	*Vinca major*
Cotoneaster glaucophyllus	*Oxalis incarnata*	*Watsonia meriana* var. *bulbillifera*
Cotoneaster pannosus	*Oxalis pes-caprae*	
Crataegus monogyna	*Paspalum dilatatum*	

Fauna of special significance

Peregrine Falcons are regionally uncommon (LCC 1991) and regularly breed on the quarry wall.

Crescent Honeyeaters are locally uncommon and were observed by the author near the knoll.

Powerful Owls (a species listed as vulnerable in Victoria) are regularly sited or heard around Ferntree Gully generally and may sometimes visit the quarry. However, the habitat appears inferior to many nearby areas and it is not deemed here to be 'probable habitat' for the purposes of assessing the site's significance.

Fauna habitat features

- There are some large eucalypts that would suit roosting or nesting of certain birds and mammals (although most of these were cleared since the first edition of this report in 2004);
- The low, scrubby vegetation around the knoll and on the quarry benches forms good habitat for certain small birds.

Significance ratings

The following is an assessment of the site's significance against the Department of Sustainability & Environment's standard criteria (Amos 2004).

Regionally Threatened Ecological Vegetation Class

According to the criteria of *'Victoria's Native Vegetation Management – A Framework for Action'* (NRE 2002a), remnant vegetation of regionally vulnerable EVCs (including Grassy Forest) have a conservation significance rating of

Medium or higher. The Grassy Forest in this site would have a habitat score of at least 0·3, raising the conservation significance to High. As a consequence, the site is of **State** significance under criterion 3.2.3 of Amos (2004).

Locally rare or threatened plants

Many of the locally threatened plant species listed above have viable populations, thereby meeting criterion 3.1.5 for a site of **Local** significance.

Locally rare or threatened fauna

On the same basis as the rare or threatened plants, the presence of Crescent Honeyeaters and a breeding site for Peregrine falcons is **Locally** significant.

Threats

- Continuing degradation by environmental weeds, including:
  - Very serious: Asparagus fern (*Asparagus scandens*), Boneseed (*Chrysanthemoides monilifera monilifera*) Panic Veldt-grass (*Ehrharta erecta*), Montpellier Broom (*Genista monspessulana*), Pale Wood-sorrel (*Oxalis incarnata*);
  - Serious: Angled Onion (*Allium triquetrum*), Bridal Creeper (*Asparagus asparagoides*), Cotoneaster (*Cotoneaster glaucophylla*), Tree Lucerne (*Chamaecytisus palmensis*), Sweet Pittosporum (*Pittosporum undulatum*), Gorse (*Ulex europaeus*), Bulbil Watsonia (*Watsonia meriana*).
- Possibly loss or decline of plant species that are present in dangerously small numbers, due to inbreeding, poor reproductive success or vulnerability to localised chance events, but population sizes could not be checked in this study.

Management issues

- The rehabilitation and revegetation of the steep slope between the lake and Quarry Rd have been very successful so far but are at serious risk of becoming overrun by Montpellier Broom and Boneseed. A high priority should be placed on removing this risk by killing the weeds before more seed are produced.

Administration matters

- This site is worthy of inclusion within the proposed Environmental Significance Overlay, ESO2, because of its biological significance;
- The site is zoned for Public Park and Recreation and it is covered by Vegetation Protection Overlay VPO1 of the Knox Planning Scheme. It is inside the Urban Growth Boundary.

Information sources used in this assessment

- A vegetation map showing EVCs and vegetation quality, and lists of plant species (indigenous and introduced) for the strips of vegetation along Butlers Rd and Ladys Walk, observed by Dr Lorimer on 19th December 1997, as described in the report, *'A Survey and Management Plan for Significant Vegetation of Roadsides in Knox'* by G.S. Lorimer for Knox City Council (May 1998, 137 pp.);
- Vegetation mapping and a list of all introduced and indigenous plant species found within the quarry fence (viewed only from publicly accessible areas), compiled by Dr Lorimer on 28th August 2002;
- Detailed vegetation data for the adjoining roadside of Quarry Rd in accord with this study's standard approach described in Section 2.4 of Vol.1, including a list of indigenous and introduced plant species, compiled by Dr Lorimer on 28th August 2002;
- Reinspections of the site for one hour on 7/3/08 and 75 minutes on 7/5/08 to map the vegetation more accurately and update this report to take account of the extensive changes that had occurred to the site since 2002;
- A list of fauna observed during each of the above botanical surveys;
- Aerial photography from February 2001, April 2003 and February 2007;
- Satellite imagery of the district;
- A map of EVCs within the adjoining Dandenong Ranges National Park prepared by Mr Doug Frood for Parks Victoria in 2002;
- The Department of Sustainability & Environment's BioMaps of the area;
- Maps of geology and topography produced by agencies of the Victorian government. (Note that the EVC maps are not reliable in this area.)