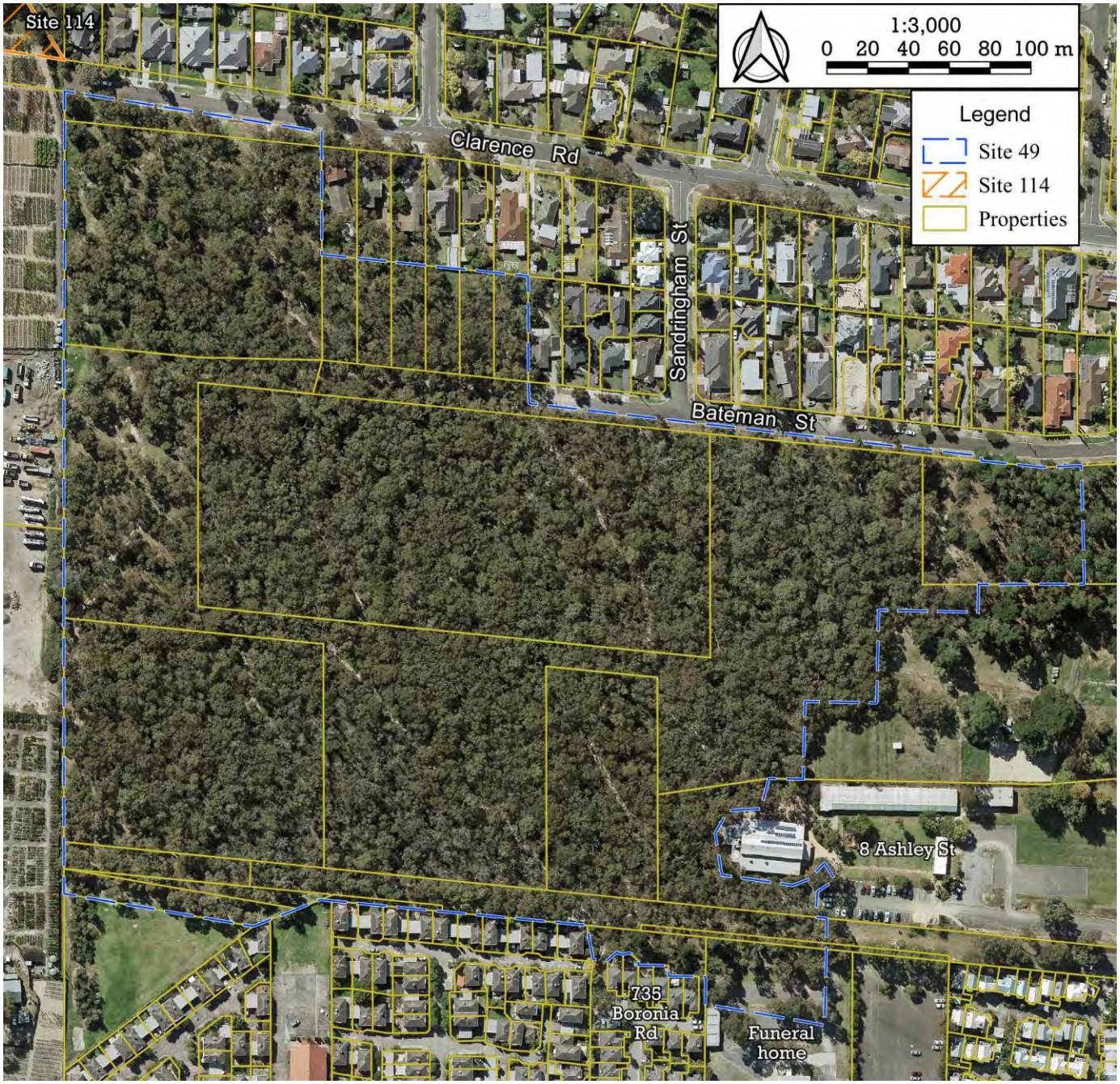
Site 49. Bateman Street Bush, Wantirna

Bushland on the Healesville Freeway reservation, extending slightly onto adjoining properties.

Summary of significant features:

- State significance: a patch of the regionally-endangered vegetation types, Valley Heathy Forest and Swampy Woodland;
- State significance: a population of the spear-grass, *Austrostipa rudis* subspecies *australis*, which is listed as Endangered under Victorian law;
- Regionally significant: the largest of only three known populations of the Woolly Pomaderris (*Pomaderris lanigera*) in the Gippsland Plain biogeographic region;
- Regionally significant: one of the top 5% of sites in the region in terms of numbers of plant species;
- Locally significant: viable populations of many locally-threatened plant species and Krefft's Gliders;
- Locally significant: an ecological stepping-stone between nearby sites;
- The Healesville Freeway is proposed to occupy most of the site when and if it is built.



Boundaries

This 12.9 ha site is as outlined with blue dashes above. The nature strips of Clarence Rd and Bateman St are included. Compared with the previous (2010) edition of this report, buildings at 8 Ashley St have been excised and additions have been made at the eastern extremity (due to discovery of Golden Moths orchids there) and a narrow strip (87 Ashley St) in the southwest.

Land use & tenure: Mostly unused freeway reservation that is treated by members of the public as if it were parkland; Also: (a) private land at 8 Ashley St used for gatherings of the Chinese Association of Victoria; (b) unused land at the rear of a funeral home; and (c) common property of a residential subdivision (735 Boronia Rd), set aside for conservation of the remnant vegetation.

Site description

This site lies on the upper, northwestern flank of a low ridge, at elevations of 91–112 m. The slope varies from 2% in the west to 15% in the east, facing directions between west and north.

A junction between two sedimentary rock formations runs through the site. The Middle Silurian siltstones of the Anderson Creek formation occur in the western third of the site and the Upper Silurian sandstones of the Melbourne (formerly Dargile) formation occupy the rest. The latter is more resistant to erosion, leaving it with steeper, higher ground than the western third of the site. The sudden change in permeability of soil as water moves down the slope is perhaps the reason for the seepage areas in the west. This effect is enhanced in the site's southwest by curvature of contour lines at the head of a drainage line, so that this corner has the highest concentration of swamp-loving plants such as rushes.

Most of the site supports the endangered Valley Heathy Forest. The seepage areas are closer to the regionally endangered Swampy Woodland. There is a very diffuse gradation between the two vegetation types, a very similar situation to the Blind Creek Billabong area in Site 34 (p. 256).

The Bateman Street Bush is one of the largest and richest areas of Valley Heathy Forest in the Melbourne region. It epitomises the distinctive characteristics of that ecological vegetation class, including the rich ground flora with many orchids. It also supports twelve indigenous species of wattle – a high number for a Victorian forest. The very high number of indigenous plant species is all the more notable because the topography and type of vegetation show little variation across the site.

The plants of the Swampy Woodland are not so well represented. Many of the characteristic species of Swampy Woodland have not been recorded since 1985, including Spreading Rope-rush (*Empodisma minus*), Lanky Goodenia (*Goodenia elongata*), Long Purple-flag (*Patersonia occidentalis*), Slender Bog-rush (*Schoenus lepidosperma*) and Tufted Blue-lily (*Thelionema caespitosum*). The decline in species in the Swampy Woodland can be attributed wholly or partly to clearing and heavy machinery traffic in and near the site's southwestern corner around 1990, associated with activities that were supposed to be confined to a neighbouring property. The bog-rush and blue-lily have not been seen since in Knox.

Most of the site is within the footprint of the proposed Healesville Freeway. No time frame has been decided for this freeway. VicRoads owns some of the freeway footprint and there is a Public Acquisition Overlay over the rest, owned by investors. In the site's southeast, the private land and part of the road reservation for Ashley St are outside the freeway footprint.

Knox City Council has taken on management of the vegetation in the VicRoads land and other land within the freeway footprint.

Relationship to other land

The Bateman Street Bush is an ecological stepping-stone for movement of birds and insects (and consequently pollen and seeds), particularly for movements along the Dandenong Creek Valley. There is a chain of such stepping-stones from Koomba Park (part of Site 58), through the former Winton Farm (Site 52), the Bateman Street Bush and Site 48 to Manson Reserve (Site 47). Therefore, fauna seeking to fly from Koomba Park to habitat along Dandenong Creek upstream of Wantirna Rd have two alternatives: fly along the creek or take a shortcut via the Bateman Street Bush. Unfortunately, both routes require crossing EastLink.

The Bateman Street Bush is also a regional stronghold for Valley Heathy Forest and for many plant species that are rare in the Melbourne area. Until and unless the Healesville Freeway is constructed, the site could serve as a seed resource to allow enrichment and rehabilitation of other sites with Valley Heathy Forest. It also provides a

benchmark for the structure and composition of Valley Heathy Forest, which can help guide management of other sites.

Site 114 is only 15 m northwest of the Bateman Street Bush and gains most of its significance from that proximity and the consequent passage of flying fauna between the two sites.

Bioregion: Gippsland Plain

Habitat types

Valley Heathy Forest (EVC 127, **Endangered**), occupying most of the site.

Canopy trees: The dominant eucalypts are generally *Eucalyptus cephalocarpa* and *Eucalyptus radiata*, except in the northeastern corner where *E. melliodora* is dominant. In many areas, there is not much difference between the density of these species and any or all of *E. macrorhyncha*, *E. goniocalyx* and *E. melliodora*. *E. obliqua* is uncharacteristically scarce, being represented by only one adult and one seedling. *Eucalyptus ovata* is also fairly scarce despite the presence of understorey species such as *Sphaerolobium minus* that would normally be accompanied by abundant *E. ovata*. There are rather more hybrids between *E. ovata* and *E. cephalocarpa* (presumably giving rise to the implausible records of *E. bridgesiana* of Paget (1985)), including the second-largest tree that was found in the study. One eucalypt appears to be *E. viminalis* but has atypically rough bark on the bole, perhaps attributable to it growing well out of the normal habitat for the species (e.g. beside nearby Dandenong Ck).

The canopy is typically 14-17 m tall but there are several trees of various species measuring approximately 20 m tall. The projected foliage cover of the canopy is typically 30%.

Sub-canopy trees: Generally dominated by *Exocarpos cupressiformis*, sometimes sharing dominance with *Acacia mearnsii* or *Acacia melanoxylon* (which are both widespread in the bushland). *Acacia pycnantha* is the dominant understorey tree in a small area just west of the houses on Bateman St, probably as a result of recovery from slashing some years ago. The layer of subcanopy trees is typically 8 m tall. *Acacia melanoxylon* was decimated by drought during 2005-2009 but has regenerated to become abundant. *Allocasuarina littoralis* is moderately dense in patches scattered across the bushland, each patch measuring a few hundred square metres. The occurrence of a solitary *Melaleuca ericifolia* close to Bateman St reflects the unusually poor drainage of the land for such a well elevated location. *Pittosporum undulatum* was formerly dense but all mature examples have been removed in recent decades to restore a more natural habitat.

Large shrubs: Thickets of larger shrubs are typically 5–6 m tall layer and dominated variously by *Acacia paradoxa*, *Bursaria spinosa*, *Kunzea*, *Pomaderris lanigera* or *Prostanthera lasianthos*. The thickets are so dense (and often so prickly) as to be hard to walk through, imposing strong competition for light, moisture and nutrients on the ground flora and thereby suppressing the diversity of ground flora. The thickets therefore appear quite different from surrounding vegetation, but data analysis has indicated that rather than being a distinct assemblage of plant species, the thickets contain simply a subset of the surrounding species, consistent with the thickets being an artifice of patchy regeneration following historical clearing.

Medium shrubs: There is a fairly wide range of shrubs roughly 2 m high, with none of them being dense over areas more than a few metres across. The most abundant and widespread of these species are *Cassinia aculeata*, *Cassinia sifton*, *Coprosma quadrifida* and *Leptospermum continentale* (as distinct from *L. scoparium*, which is more localised and taller). *Epacris impressa* is moderately common. The Bateman Street Bush is (or has been until recently) a district-wide stronghold for many species in this category, including *Acacia myrtifolia*, *Acacia ulicifolia*, *Correa reflexa*, *Daviesia latifolia*, *Pomaderris racemosa* and *Spyridium parvifolium*.

Small shrubs: An abundance of small shrubs is a notable feature of the more natural parts of the Bateman Street Bush, though the number of species is low. The most abundant species are *Dillwynia cinerascens* and *Platylobium obtusangulum*, followed by *Hibbertia australis*. *Leucopogon virgatus* is not very abundant but its presence contributes to the heathy character that gives the EVC its name.

Ferns: *Lindsaea linearis* is abundant and *Pteridium esculentum* forms patches scattered thinly around the site. The only other ferns are three sickly young *Cyathea australis* in the southwestern corner and a solitary patch of *Adiantum aethiopicum* 50 m west-southwest of the noticeboard at the western end of Bateman St.

Vines: *Billardiera mutabilis* is abundant through most of the bushland, even becoming the dominant understorey species over hundreds of square metres in the site's northeastern quarter about a decade ago. At its peak density, *B. mutabilis* killed many other understorey plants and reduced the richness of plant

species but this phase has ceased. *Comesperma volubile* is widespread and moderately abundant. *Pandorea pandorana* has spread over the past two decades from being more abundant than *Comesperma volubile*, sometimes smothering shrubs and trees up to at least 6 m above ground. *Clematis decipiens*, which is a relatively recent species to the site, appears to be following a similar progress to *Pandorea pandorana.* The climbing parasite, *Cassytha melantha*, is scattered thinly.

Creepers: *Hardenbergia violacea* is moderately abundant, as are the small creepers *Acacia aculeatissima*, *Bossiaea prostrata* and *Oxalis exilis/perennans*.

Groundcover: As in other local areas of Valley Heathy Forest (e.g. Flamingo Reserve), there are two types of ground flora. In one type, *Gahnia radula* is so dense as to exclude most of the site's ground flora species, whereas in the other type, *Gahnia radula* is sparse enough to leave plenty of space for far more species, particularly tussock-forming grasses such as *Rytidosperma pallidum, Themeda triandra, Poa morrisii* and *Austrostipa rudis*. The following species are abundant in both types of ground flora: *Dianella revoluta, Drosera aberrans, Gonocarpus tetragynus, Lagenophora gracilis, Lomandra filiformis, Viola hederacea, Arthropodium strictum* (which can be dominant in spring), *Burchardia umbellata, Microlaena stipoides, Opercularia varia*, *Poranthera microphylla* and *Xanthorrhoea minor*. The grassy areas also contain abundant *Acrotriche serrulata, Coronidium scorpioides*, *Pterostylis nutans, Pterostylis melagramma* and *Thelymitra peniculata*. Other characteristic (but less abundant) species include *Cryptostylis subulata, Dipodium roseum, Diuris orientis, Hovea heterophylla*, *Stylidium armeria* and *Wurmbea dioica*.

Swampy Woodland (EVC 937, **regionally Endangered**), now scarcely distinguishable from the Valley Heathy Forest; located in the site's southwest corner and a small area just west of the centre.

Canopy trees: Dominated by *Eucalyptus cephalocarpa* and *E. radiata*, with a trace of *E. ovata*.

Sub-canopy trees: *Acacia melanoxylon* and *Exocarpos cupressiformis*.

Shrubs: Very patchy, probably as a result of past clearing. *Coprosma quadrifida* is characteristically present.

Groundcover: Grassy. Species that help to characterise the vegetation include *Allittia cardiocarpa*, *Empodisma minus, Glyceria australis, Goodenia elongata*, *Lepidosperma filiforme, Ornduffia reniformis, Patersonia occidentalis, Schoenus lepidosperma*, *Sphaerolobium minus* and *Thelionema caespitosum*, but most of these species have not been seen since the early or mid-1990s.

Vegetation condition

According to the author's *'2013 Bushland Management Plan for the Bateman Street Bush, Wantirna'* (the most recent thorough botanical investigation), the site's vegetation is divided between 3% in excellent condition (rating 'A'), 30% in good ecological condition (rating 'B'), 46% in fair ecological condition (rating 'C'), 9% in poor ecological condition (rating 'D') and 12% in very poor ecological condition (rating 'E').

Plant species

The following list contains the wild plant species that have been recorded in the Bateman Street Bush. Those species not recorded by the author in the 2020s are indicated by superscripts showing the year of the most recent record. Records dated 2012 and 2013 arise from the author's *'2013 Bushland Management Plan for the Bateman Street Bush, Wantirna'* (the most recent thorough botanical investigation); 1998 refers to the author's *'1998 Flora Survey of Bateman Street Bush, Wantirna'*; 1993 refers to a record of Darren Wallace; and 1985 refers to a record of Andrew Paget in 1985–90. The column headed 'Risk' indicates the indigenous vascular species' risk of dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable, 'N'=Near threatened and 'X'=presumed locally extinct. In addition, *Austrostipa rudis* subsp. *australis* and *Acacia stictophylla* are listed as Endangered throughout Victoria and species with names in bold are rare throughout the Melbourne region. For details of the more significant species' populations, see the abovementioned 2013 management plan.

Indigenous mosses and liverworts

Breutelia affinis, Common Breutelia
Campylopus clavatus, Broody Swan-neck Moss
Campylopus introflexus, Heath Star Moss
Chiloscyphus semiteres, Green Worms
Dicranoloma billarderi, a moss [2013]
Funaria hygrometrica, Common Fire-moss
Hypnum cupressiforme, Common Hypnum [2013]
Marchantia berteroana, a liverwort

Indigenous mosses and liverworts

Polytrichum juniperinum, Common Juniper-moss
Ptychomnion aciculare, Paper Moss, Pipe-cleaners [2016]
Rosulabryum billarderi, Common Thread-moss [2013]
Thuidiopsis furfurosa, Golden Weft-moss

Risk	Wild indigenous vascular species
	Wild fern species
V	*Adiantum aethiopicum*, Common Maidenhair [2013]
C	*Cyathea australis*, Rough Tree-fern
V	*Lindsaea linearis*, Screw Fern
	Pteridium esculentum, Austral Bracken
	Wild flowering species
E	*Acacia aculeatissima*, Thin-leaf Wattle
	Acacia dealbata, Silver Wattle
V	*Acacia implexa*, Lightwood [2013]
V	*Acacia mearnsii*, Black Wattle
V	*Acacia melanoxylon*, Blackwood
E	*Acacia myrtifolia*, Myrtle Wattle [2013]
	Acacia paradoxa, Hedge Wattle
V	*Acacia pycnantha*, Golden Wattle
V	*Acacia stictophylla*, Dandenong Range Cinnamon Wattle [2013]
E	*Acacia stricta*, Hop Wattle
C	***Acacia ulicifolia*, Juniper Wattle** [2013]
	Acacia verticillata, Prickly Moses
V	*Acaena echinata*, Sheep's Burr [1998]
	Acaena novae-zelandiae, Bidgee-widgee
E	*Acrotriche serrulata*, Honey-pots
C	***Allittia cardiocarpa*, Swamp Daisy**
V	*Allocasuarina littoralis*, Black Sheoak
C	*Amyema pendula*, Drooping Mistletoe
	Anthosachne scabra, Common Wheat-grass [2012]
	Arthropodium strictum, Chocolate Lily
	Austrostipa pubinodis, Tall Spear-grass
V	***Austrostipa rudis* subsp. *australis*, Veined Spear-grass**
	Austrostipa rudis subsp. *rudis*, Veined Spear-grass
	Billardiera mutabilis, Common Apple-berry
N	*Bossiaea prostrata*, Creeping Bossiaea
V	*Brunonia australis*, Blue Pincushion
	Burchardia umbellata, Milkmaids
	Bursaria spinosa, Sweet Bursaria
V	*Caesia parviflora*, Pale Grass-lily
C	*Caladenia carnea*, Pink Fingers [2019]
C	***Caladenia catenata*, White Caladenia** [1998]
X	***Calochilus paludosus*, Red Beard-orchid** [1985]
C	*Calochilus robertsonii* s.l., Purplish Beard-orchid [1998]
	Carex breviculmis, Short-stem Sedge
	Cassinia aculeata, Common Cassinia
	Cassinia longifolia, Shiny Cassinia
E	*Cassytha melantha*, Coarse Dodder-laurel
E	*Cassytha pubescens*, Downy Dodder-laurel
E	*Centella cordifolia*, Centella [2013]
C	*Chamaescilla corymbosa*, Blue Stars
V	*Clematis aristata*, Mountain Clematis
	Clematis decipiens, a small-leafed clematis
E	*Comesperma volubile*, Love Creeper

Risk	Wild indigenous vascular species
V	*Coprosma quadrifida*, Prickly Currant-bush [2013]
C	*Coronidium scorpioides*, Button Everlasting
C	*Correa reflexa* var. *reflexa*, Common Correa
X	***Corunastylis despectans*, Sharp Midge-orchid** [1998]
	Cotula australis, Common Cotula
	Crassula decumbens, Spreading Crassula [2012]
C	***Cryptostylis leptochila*, Small Tongue-orchid**
C	***Cryptostylis subulata*, Large Tongue-orchid**
C	*Daviesia latifolia*, Hop Bitter-pea
C	*Daviesia leptophylla*, Narrow-leaf Bitter-pea
	Deyeuxia quadriseta, Reed Bent-grass
	Dianella longifolia var. *longifolia*, Pale Flax-lily
	Dianella revoluta, Black-anther Flax-lily
	Dianella tasmanica, Tasman Flax-lily
	Dichelachne rara, Common Plume-grass
C	*Dichelachne sieberiana*, Plume-grass
	Dichondra repens, Kidney-weed [2013]
V	*Dillwynia cinerascens*, Grey Parrot-pea
E	*Dipodium roseum*, Rosy Hyacinth-orchid [2013]
C	***Diuris chryseopsis*, Golden Moths** [2019]
C	*Diuris orientis*, Wallflower Orchid
V	*Drosera aberrans*, Scented Sundew
V	*Drosera auriculata*, Tall Sundew
N	*Drosera hookeri*, Branched Sundew [1985]
C	*Epacris impressa*, Common Heath
C	*Empodisma minus*, Spreading Rope-rush
	Epilobium cf. *billardiereanum* subsp. *intermedium*, a willow-herb
	Epilobium hirtigerum, Hairy Willow-herb
	Eragrostis brownii, Common Love-grass [2012]
X	***Eriochilus cucullatus*, Parson's Bands** [1985]
E	*Eucalyptus cephalocarpa*, Mealy Stringybark
V	*Eucalyptus goniocalyx*, Bundy
C	*Eucalyptus macrorhyncha*, Red Stringybark
E	*Eucalyptus melliodora*, Yellow Box
E	*Eucalyptus obliqua*, Messmate Stringybark [2013]
V	*Eucalyptus ovata*, Swamp Gum
E	*Eucalyptus radiata*, Narrow-leaved Peppermint
C	*Eucalyptus viminalis* subsp. *viminalis*, Manna Gum (or hybrids thereof)
E	*Euchiton* ?*involucratus*, Common Cudweed [2012]
	Euchiton japonicus, Creeping Cudweed [2013]
E	*Euchiton sphaericus*, Star Cudweed [2012]
V	*Exocarpos cupressiformis*, Cherry Ballart
C	*Gahnia radula*, Thatch Saw-sedge
C	*Glossodia major*, Wax-lip Orchid
V	*Glyceria australis*, Australian Sweet-grass [1998]
E	*Glycine clandestina*, Twining Glycine [1985]
	Gonocarpus tetragynus, Common Raspwort
C	***Goodenia elongata*, Lanky Goodenia** [1985]
N	*Goodenia lanata*, Trailing Goodenia

Risk	Wild indigenous vascular species
	Goodenia ovata, Hop Goodenia
C	***Hakea decurrens*, Bushy Needlewood**
C	*Hakea nodosa*, Yellow Hakea [2013]
E	*Hardenbergia violacea*, Purple Coral-pea
C	*Hibbertia australis*, Upright Guinea-flower
C	*Hovea heterophylla*, Common Hovea [2013]
C	*Hydrocotyle* ?*callicarpa*, Small Pennywort [1985]
E	*Hydrocotyle foveolata*, Yellow Pennywort
E	*Hypericum gramineum*, Small St John's Wort [2013]
	Hypoxis hygrometrica, Golden Weather-glass [2010]
C	*Imperata cylindrica*, Blady Grass [1985]
C	*Indigofera australis*, Austral Indigo
E	*Isolepis hookeriana*, Grassy Club-rush [1998]
C	*Isolepis marginata*, Little Club-rush
V	*Isolepis platycarpa*, a club-rush [1998]
	Juncus amabilis, Hollow Rush
	Juncus bufonius, Toad Rush
C	*Juncus fockei/holoschoenus*, a joint-leaf rush
	Juncus pallidus, Pale Rush [2013]
E	*Juncus planifolius*, Broad-leaf Rush [1998]
	Juncus sarophorus, Broom Rush
E	*Juncus subsecundus*, Finger Rush [2013]
C	*Kennedia prostrata*, Running Postman
	Kunzea ericoides group, Burgan
	Lachnagrostis filiformis, Common Blown-grass [2013]
E	*Lagenophora adenosa/stipitata*, a bottle-daisy [1994]
V	*Lagenophora sublyrata*, Slender Bottle-daisy
	Lepidosperma elatius, Tall Sword-sedge [2013]
C	*Lepidosperma filiforme*, Common Rapier-sedge [1998]
	Lepidosperma gunnii, Slender Sword-sedge [2013]
V	*Lepidosperma laterale*, Variable Sword-sedge [2013]
C	*Leptorhynchos tenuifolius*, Wiry Buttons [2013]
C	*Leptospermum continentale*, Prickly Tea-tree
	Leptospermum scoparium, Manuka [2013]
C	*Leucopogon virgatus*, Common Beard-heath
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
	Lomandra filiformis subsp. *filiformis*, Wattle Mat-rush
	Lomandra longifolia subsp. *exilis*, Cluster-headed Mat-rush [2012]
	Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush [2013]
V	*Luzula meridionalis*, Common Woodrush
	Lythrum hyssopifolia, Lesser Loosestrife [2013]
E	*Melaleuca ericifolia*, Swamp Paperbark [2013]
V	*Melicytus dentatus*, Tree Violet [2013]
	Microlaena stipoides, Weeping Grass
C	***Microseris walteri*, Murnong** [2019]

Risk	Wild indigenous vascular species
V	*Microtis parviflora*, Slender Onion-orchid
E	*Olearia lirata*, Snowy Daisy-bush
V	*Opercularia ovata*, Broad-leaf Stinkweed
V	*Opercularia varia*, Variable Stinkweed
C	***Ornduffia reniformis*, Running Marsh-flower** [1995]
	Oxalis exilis/perennans, Wood-sorrel
V	*Ozothamnus ferrugineus*, Tree Everlasting [2013]
C	***Ozothamnus obcordatus*, Grey Everlasting**
	Pandorea pandorana, Wonga Vine
C	*Patersonia occidentalis*, Long Purple-flag [1994]
E	*Pauridia vaginata*, Yellow Star
C	*Pelargonium inodorum*, Kopata
C	*Pentapogon quadrifidus*, Five-awned Spear-grass [1985]
E	*Pimelea humilis*, Common Rice-flower
E	*Plantago varia*, Variable Plantain
E	*Platylobium obtusangulum*, Common Flat-pea
	Poa ensiformis, Sword Tussock-grass [2013]
E	*Poa labillardierei*, Common Tussock-grass (planted?) [2012]
	Poa morrisii, Soft Tussock-grass
E	*Poa tenera*, Slender Tussock-grass [2013]
E	***Pomaderris lanigera*, Woolly Pomaderris**
C	*Pomaderris racemosa*, Cluster Pomaderris
	Poranthera microphylla, Small Poranthera
V	*Prostanthera lasianthos*, Victorian Christmas-bush
X	***Pterostylis clivosa/parviflora*, a greenhood** [1985]
E	*Pterostylis concinna*, Trim Greenhood [2013]
E	*Pterostylis melagramma*, Tall Greenhood
C	***Pterostylis nana*, Dwarf Greenhood** [2019]
	Pterostylis nutans, Nodding Greenhood
C	*Pterostylis pedunculata*, Maroonhood
V	*Pultenaea gunnii*, Golden Bush-pea [1985]
C	*Rumex* ?*brownii*, Slender Dock [1985]
E	*Rytidosperma caespitosum*, Common Wallaby-grass [2013]
	Rytidosperma fulvum, Leafy Wallaby-grass
	Rytidosperma laeve, Smooth Wallaby-grass
C	***Rytidosperma lepidopodum*, Scaly-foot Wallaby-grass**
E	*Rytidosperma pallidum*, Red-anther (or Silvertop) Wallaby-grass
	Rytidosperma penicillatum, Slender Wallaby-grass
	Rytidosperma pilosum, Velvet Wallaby-grass
	Rytidosperma racemosum, Clustered Wallaby-grass
E	*Rytidosperma semiannulare*, Tasmanian Wallaby-grass
	Rytidosperma setaceum, Bristly Wallaby-grass
	Rytidosperma tenuius, Purplish Wallaby-grass
X	***Schoenus lepidosperma*, Slender Bog-rush** [1985]
C	***Schoenus* ?*tesquorum*, Soft Bog-rush** [2013]

Risk	Wild indigenous vascular species
	Schoenus apogon, Common Bog-rush
V	*Senecio glomeratus*, Annual Fireweed
	Senecio hispidulus, Rough Fireweed
	Senecio minimus, Shrubby Fireweed
	Senecio phelleus, Rock Fireweed
V	*Senecio prenanthoides*, Common Fireweed
	Senecio quadridentatus, Cotton Fireweed
V	*Solanum laciniatum*, Large Kangaroo Apple
V	*Solenogyne dominii*, Smooth Solenogyne [2012]
C	***Sphaerolobium minus*, Globe-pea** [2013]
V	*Spyridium parvifolium*, Australian Dusty Miller
E	*Stackhousia monogyna/subterranea*, Candles
E	*Stylidium armeria*, Common Triggerplant [2013]
C	*Tetraria capillaris*, Hair-sedge [1985]
	Tetrarrhena juncea, Forest Wire-grass [2013]
X	***Thelionema caespitosum*, Tufted Blue-lily** [1985]
C	*Thelymitra brevifolia*, Peppertop Sun-orchid [2013]
C	*Thelymitra ixioides*, Dotted Sun-orchid [1985]
E	*Thelymitra peniculata*, Trim Sun-orchid
	Themeda triandra, Kangaroo Grass
E	*Thysanotus patersonii*, Twining Fringe-lily
C	*Thysanotus tuberosus*, Common Fringe-lily
	Tricoryne elatior, Yellow Rush-lily
V	*Veronica gracilis*, Slender Speedwell [2012]
E	*Viola hederacea*, Ivy-leaf Violet
	Wahlenbergia gracilis, Sprawling Bluebell [2013]
C	***Wahlenbergia gymnoclada*, Naked Bluebell** [1998]
E	*Wahlenbergia stricta*, Tall Bluebell
E	*Wurmbea dioica*, Common Early Nancy
E	*Xanthorrhoea minor*, Small Grass-tree
V	*Xanthosia dissecta*, Cut-leaf Xanthosia

Wild introduced species

Acacia baileyana, Cootamundra Wattle [2013]
Acacia decurrens, Green Wattle [2013]
Acacia elata, Cedar Wattle [2013]
Acacia floribunda, White Sallow-wattle
Acacia howittii, Sticky Wattle [2013]
Acacia longifolia subsp. *longifolia*, Sallow Wattle [2013]
Acer negundo, Box Elder [2013]
Agapanthus praecox, Agapanthus [2013]
Agrostis capillaris, Brown-top Bent [2013]
Aira caryophyllea, Silvery Hair-grass [2012]
Aira praecox, Early Hair-grass [2012]
Allium triquetrum, Angled Onion
Anthoxanthum odoratum, Sweet Vernal-grass
Arctotheca calendula, Cape Weed
Asparagus asparagoides, Bridal Creeper
Asparagus scandens, Asparagus Fern [2013]
Avena barbata, Bearded Oat [2012]
Billardiera fusiformis, Bluebell Creeper [2012]
Briza maxima, Large Quaking-grass

Wild introduced species

Briza minor, Lesser Quaking-grass [2012]
Bromus catharticus, Prairie Grass
Bromus diandrus, Great Brome [2013]
Cardamine hirsuta, Common Bitter-cress [2012]
Cassinia sifton, Sifton Bush
Cenchrus clandestinus, Kikuyu Grass [2013]
Centaurium erythraea, Common Centaury
Cerastium glomeratum s.l., Common Mouse-ear Chickweed
Chrysanthemoides monilifera subsp. *monilifera*, Boneseed
Cicendia filiformis, Slender Cicendia [2012]
Cirsium vulgare, Spear Thistle
Coprosma repens, Mirror-bush [2013]
Correa hybrids and cultivars [2013]
Cotoneaster glaucophyllus, Cotoneaster [2013]
Cotoneaster pannosus, Cotoneaster [2013]
Crassula multicava, Shade Crassula
Crataegus monogyna, Hawthorn [2013]
Crocosmia × *crocosmiiflora*, Montbretia [2013]
Cyperus eragrostis, Drain Flat-sedge [2012]
Cytisus scoparius, English Broom [2011]
Dactylis glomerata, Cocksfoot
Dianella caerulea, Paroo Lily (horticultural origin)
Dianella cf. *longifolia* (non-indigenous), a flax-lily
Dittrichia graveolens, Stinkweed [2012]
Ehrharta erecta, Panic Veldt-grass
Ehrharta longiflora, Annual Veldt-grass
Erica lusitanica, Spanish Heath [2013]
Erigeron bonariensis, Flaxleaf Fleabane
Erigeron sumatrensis, Fleabane
Eriobotrya japonica, Loquat [2013]
Euphorbia peplus, Petty Spurge [2013]
Fraxinus angustifolia, Desert Ash [2013]
Freesia leichtlinii, Freesia
Fumaria bastardii, Bastard's Fumitory
Fumaria capreolata, Ramping Fumitory
Fumaria muralis subsp. *muralis*, Wall Fumitory
Galium aparine, Cleavers
Gamochaeta purpurea, Spiked Cudweed [2012]
Genista linifolia, Flax-leafed Broom [2012]
Genista monspessulana, Montpellier Broom
Gladiolus undulatus, Wild Gladiolus [2013]
Grevillea hybrids and cultivars
Hakea salicifolia, Willow-leaf Hakea
Hedera helix/hibernica, Ivy
Helminthotheca echioides, Ox-tongue
Holcus lanatus, Yorkshire Fog
Homalanthus populifolius, Bleeding Heart [2013]
Hypochaeris radicata, Cat's Ear
Isolepis levynsiana, Tiny Flat-sedge [2012]
Jasminum polyanthum, Pink (or Winter) Jasmine
Juncus pallescens, a rush [1985]
Lactuca serriola, Prickly Lettuce
Leontodon saxatilis, Lesser Hawkbit [2012]
Ligustrum lucidum, Large-leafed Privet [2013]

Wild introduced species

Lolium ?*rigidum*, Wimmera Rye-grass
Lonicera japonica, Japanese Honeysuckle [2013]
Lotus subbiflorus, Hairy Bird's-foot Trefoil
Lysimachia arvensis, Pimpernel
Medicago arabica, Spotted Medic
Narcissus pseudonarcissus, Common Daffodil [2012]
Oxalis incarnata, Pale Wood-sorrel
Oxalis pes-caprae, Soursob
Oxalis purpurea, Large-flower Wood-sorrel
Pandorea pandorana, Wonga Vine [2013]
Paspalum dilatatum, Paspalum [2012]
Pinus radiata, Monterey Pine
Pittosporum undulatum, Sweet Pittosporum [2013]
Plantago lanceolata, Ribwort
Poa annua/infirma, a meadow-grass [2013]
Prunus cerasifera, Cherry-plum [2013]
Pseudoscleropodium purum, Neat Feather-moss
Raphanus raphanistrum, Wild Radish
Romulea rosea, Common Onion-grass
Rubus anglocandicans, Blackberry
Rumex crispus, Curled Dock [2013]

Wild introduced species

Senecio vulgaris, Common Groundsel [2012]
Sisyrinchium micranthum, Blue Pigroot [2012]
Solanum nigrum, Black Nightshade
Soliva sessilis, Jo Jo
Sonchus oleraceus, Sow-thistle
Sporobolus africanus, Rat-tail Grass [2012]
Stellaria media, Chickweed
Symphyotrichum subulatum, Aster-weed
Taraxacum sect. *Taraxacum*, Garden Dandelion
Tradescantia fluminensis, Wandering Trad [2013]
Trifolium glomeratum, Cluster Clover
Trifolium repens, White Clover [2012]
Ulex europaeus, Gorse (Furze)
Viburnum tinus, Laurustinus [2013]
Vicia hirsuta, Tiny Vetch
Vicia sativa, Common Vetch
Vinca major, Blue Periwinkle
Vulpia bromoides, Squirrel-tail Fescue [2013]
Vulpia myuros, Rat's-tail Fescue [2012]
Watsonia meriana var. *bulbillifera*, Bulbil Watsonia [2013]

Fauna of special significance

Krefft's Glider (or Sugar Glider) – one of a small number of populations in Knox.

Fauna habitat features

- Some of the mature eucalypts have hollows suitable for nesting or roosting by native birds, bats, possums or invertebrates;
- The high density and diversity of shrubs significantly improves the habitat for native invertebrates and birds. The prickliness of many of the shrubs helps protect birds from cats at large;
- Swampy depressions probably allow Southern Brown Tree Frogs and Common Froglets to breed.

Significance ratings

The following is an assessment of the site's biological significance against the Department of Energy, Environment & Climate Action's standard criteria (Amos 2004).

Ecological Integrity and Viability

Positioned between J.W. Manson Reserve (Site 47) and Koomba Park (Site 58), the Bateman Street Bush fits the description in criterion 1.2.6 of Amos (2004) of a 'Corridor or component of 'stepping stones' … Local scale link between individual remnant habitat blocks or within subcatchment'. **Local** significance applies to sites meeting this description.

Richness and Diversity

Criterion 2.1.1 accords **Regional** significance to any site whose richness in native species puts them among the top 5% when compared with similar sites in the bioregion. This fits the Bateman Street Bush.

Endangered Vegetation Types

Both vegetation types present are regionally endangered and the vegetation in the Bateman Street Bush easily meets the definition of a 'remnant patch' adopted by the standard criteria, i.e. a continuous area of at least 0.25 ha in which the cover of native understorey is at least 10% throughout. It follows from Appendix 3 of *Victoria's Native Vegetation Management – a Framework for Action* (NRE 2002a) that the site's native vegetation is of at least High conservation significance. This translates to **State** significance under criterion 3.2.3.

Threatened Plants

The spear-grass, *Austrostipa rudis* subsp. *australis*, is listed under the *Flora and Fauna Guarantee Act* as Endangered in Victoria. It also occurs interstate. Any known habitat for such a species (as in the Bateman Street Bush) meets criterion 3.1.2 for **State** significance.

The site has a large, thriving population of *Pomaderris lanigera*. Australasian herbaria hold only two specimens of wild plants of this species from anywhere else in the South East Coastal Plain (or Gippsland Plain) biogeographic region since 1972. The species is clearly very rare regionally and the Bateman Street Bush has the largest known population in the region. These conditions meet criterion 3.1.4 for **Regional** significance.

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

Threatened Fauna

Krefft's Gliders (or Sugar Gliders) are believed to be threatened locally but not throughout the whole Gippsland Plain bioregion. The habitat that the Bateman Street Bush provides for the species qualifies for **Local** significance under criterion 3.1.5.

Threats

- Potential future freeway construction, which would inevitably destroy most of the site's environmental significance;
- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves, fires and storms, as well as substantially lower rainfall (particularly in winter);
- Decline in the health of eucalypts, partly associated with the abovementioned droughts and storms;
- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of climate change. The most impactful species of environmental weeds appear to be Gorse, Blue Periwinkle, Japanese Honeysuckle, Wandering Trad and Angled Onion;
- Loss or decline of plant species that have such small populations that they are vulnerable to inbreeding, poor reproductive success or chance events such as being scratched out buy a dog or struck by a falling tree limb;
- Illegal incursions by vehicles and machinery, particularly motorbikes;
- Dumping of rubbish and garden waste by neighbours.

Strategic planning

- With the exception of two areas added to Site 49 in this edition, the site is covered by Schedule 2 of the Environmental Significance Overlay (ESO2) on the basis of the previous (2010) edition of this report. The reasons for the overlay were the State significance, the endangered EVCs, the significant plant species, the habitat for native fauna, and potential subdivision pressure. Since 2010, the only material changes affecting the original basis for applying ESO2 are: (a) the listing of *Austrostipa rudis* subsp. *australis* as Endangered under Victorian law, which has added to the site's significance; and (b) the expansion of the site to include 87 Ashley St and 3 ha at the eastern extremity. The only recommended amendment to the overlay is to change its boundary to match the boundary adopted here;
- The part of the site that is common property of 735 Boronia Rd is exempt from the state-wide baseline planning controls over removal of native vegetation (clause 52.17) because of its size. The same is also true of 87 Ashley St unless it is owned by VicRoads (as it appears to be);
- The public land in the site is zoned Transport Zone 2 – Principal Road Network (TRZ2) and the privately-owned land is zoned Neighbourhood Residential Zone – Schedule 5 (NRZ5).

Information sources used in this assessment

- Data from thirty-six quadrats (numbers N13101 to N13137, except the missing quadrat N13113) compiled by Andrew Paget in June and July 1985, although some species such as *Eucalyptus bridgesiana* are treated here as unreliable;
- A list of additional species seen by Andrew Paget during 1985–1990 that were not found in his quadrats;
- Discussion with orchid expert, Jeff Jeanes, in the late 1990s and 2003 about his personal observations of orchids in the site during prior decades;

- A written list and verbal description of personal observations of plants seen in the site by reliable naturalist, Darren Wallace, during 1990–1995;
- The report, *'1998 Flora Survey of Bateman Street Bush, Wantirna'* by Dr Lorimer for Knox Environment Society, plus the underlying field data. The fieldwork took twelve hours during October and early November 1998. It included mapping, compilation of lists of indigenous and introduced plant species, and checks for ecological threats, management issues and populations of scarce or threatened plant species;
- The report, *'Flora and Fauna Survey and Management Plan for Bateman Street Bushland'* by S. Cropper (Botanicus Australia Pty Ltd) for VicRoads in 2000;
- A re-inspection of the site by Dr Lorimer in December 2007 to update information for the second edition of this report;
- A re-inspection of the site's southern boundary in May 2010 to determine adjustments to account for new residential development on some of the land included in the site in the first (2004) edition of this report;
- A detailed ecological survey with over 100 hours of fieldwork during August 2012 to January 2013 by Dr Lorimer, culminating in his *'2013 Bushland Management Plan for the, Wantirna'*, for Knox City Council;
- An ecological assessment of part of the site abutting Clarence Rd by Dr Lorimer in 2014, leading to the report, *'Ecological Assessment of a Proposed Development at the Bateman Street Bush, Wantirna'*, for Knox City Council;
- A post-fire ecological study by Dr Lorimer (aided by Josh Revell) in September 2020, reported in *'Bateman Street Bush Post-fire Vegetation Assessment'*, for Knox City Council'
- Brief inspection of the site by Dr Lorimer in early August 2024 for this report, focusing on whether the site's previously-reported biologically-significant attributes remain;
- Several other inspections of the site by the author during springtimes since the mid- to late-1980s;
- Records of flora and fauna observations stored in Knox City Council's biodiversity database;
- Records of flora and fauna observations stored in the Atlas of Living Australia;
- Aerial and satellite imagery from between 1946 and 2025;
- The Victorian Government's 'NatureKit' website;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.