Site 24. St Bernadette's Primary School, The Basin

Treed playground area and a small school sanctuary.

Summary of significant features:

- Nationally significant: known habitat for the flat-pea, *Platylobium infecundum*, which is critically endangered globally;
- State significance: a patch of native vegetation containing two regionally endangered Ecological Vegetation Classes;
- Locally significant: habitat for viable populations of some locally-threatened plant species.

Aerial photograph and plan: See page 189, which covers this site and Site 25.

Note: Permission was not obtained to enter the school for this edition, so it was inspected from public land, assisted by aerial photographs. Some native understorey would have gone undetected.

Boundaries

Three sides of the site boundary coincide with the school's property boundary, and the fourth (northeastern) side is parallel to, and 65.6 m from, the southwestern property boundary. The total area is 0.69 hectares.

Land use & tenure: Primary school playground and sanctuary.

Site description

This site comprises a treed playground for the school's children and a small, fenced sanctuary (marked on the aerial photograph) with young regrowth along a drainage line.

The site is within a narrow transition zone between the Gippsland Plain bioregion and the Highlands - Southern Fall bioregion. The vegetation types are intermediate between those that one would expect to find in similar topography in each of these bioregions. In particular, the main vegetation in the playground is intermediate between the Valley Heathy Forest that one would associate with the Gippsland Plain and Grassy Forest that one would associate with the Highlands Southern Fall.

The school sanctuary's vegetation is mostly young Swampy Woodland, with a narrow strip of the intermediate Grassy Forest / Valley Heathy Forest just inside the western edge. When inspected in 2002, the ecological condition of vegetation in the sanctuary was patchy, with localised serious infestations of environmental weeds. This is a common problem along drainage lines, due to the good growing conditions for environmental weeds and the prevalence of major soil disturbance for installation of sewerage and stormwater pipes.

Native vegetation in the playground is less affected by environmental weeds and more affected by trampling and other effects of children playing. The number of indigenous plant species outside the sanctuary is actually higher than inside, despite the comparable area. This probably reflects a worse history of vegetation degradation along the drainage line prior to creation of the sanctuary.

Relationship to other land

The site abuts George Grumont Reserve (Site 25) and there would no doubt be substantial traffic of fauna, seeds and pollen between the two sites. Other treed properties in the neighbourhood help to keep native birds and insects in the area.

Bioregion: Mapped by the Department of Energy, Environment and Climate Action as Gippsland Plain, close to the edge where it abuts the Highlands Southern Fall. Geologically, it belongs in the Highlands Southern Fall.

Habitat types

Intermediate Valley Heathy Forest / Grassy Forest (EVCs 127 and 128, both regionally **Endangered**): Estimated in 2002 to cover 2,500 m², comprising 50 m² in good ecological condition (rating B), 150 m² in fair

ecological condition (rating C) and 2,300 m² in poor ecological condition (rating D). 38 indigenous plant species were recorded by the author on 3/4/02.

Canopy trees: Dominated by *Eucalyptus obliqua*, with fewer *E. radiata* and even fewer *E. cephalocarpa*.

Sub-canopy trees: *Exocarpos cupressiformis* and *Acacia melanoxylon* dominate, and *Acacia mearnsii* is also present.

Shrubs: Dominated by *Bursaria spinosa* (typical of Valley Heathy Forest), and also with abundant *Kunzea* and smaller numbers of other species.

Vines: None found.

Ferns: *Pteridium esculentum* is present but not abundant.

Groundcover: Grassy, with 80% ground coverage. Dominated by *Austrostipa rudis*. Other abundant species include *Rytidosperma penicillatum, Microlaena stipoides, Lomandra filiformis, L. longifolia, Tetrarrhena juncea, Gonocarpus tetragynus* and *Platylobium infecundum*. *Gahnia radula, Rytidosperma pallidum, Dianella revoluta, Dipodium roseum, Pimelea humilis* and *Hypericum gramineum* are present, as they usually are in Grassy Forest and Valley Heathy Forest locally.

Swampy Woodland (EVC 937, **regionally Endangered**): Estimated in 2002 to cover 1,500 m², all in fair ecological condition (rating C). 21 indigenous plant species were recorded by the author on 3/4/02.

Canopy trees: Young *Eucalyptus obliqua* to 12 m tall and 150 mm trunk diameter, indicating regeneration after clearing some years ago. *E. ovata* is usually dominant in local Swampy Woodland, but not in this case.

Sub-canopy trees: *Acacia melanoxylon* is dense, with approximately 70% cover.

Shrubs: Patchy in density due to uneven natural regeneration. *Leptospermum scoparium, Kunzea* and *Ozothamnus ferrugineus* are the main species.

Vines: *Billardiera mutabilis* is present.

Ferns: *Pteridium esculentum* is dense among blackberries, beneath gaps in the tree canopy.

Groundcover: Dominated by *Gahnia sieberiana* and *Lepidosperma elatius*. The characteristic species, *Centella cordifolia* and *Lobelia anceps* are present.

Plant species

The following plant species were observed in an ecological survey on 3rd April 2002 for the first edition of this report. An asterisk following a species' name indicates that its continuing presence was confirmed from the abutting George Grumont Reserve in June 2024. The column headed 'Risk' indicates the indigenous species' risk of dying out in Knox, with 'C'=Critically endangered, 'E'=Endangered and 'V'=Vulnerable. In addition, *Platylobium infecundum* is critically endangered, globally. Additional wild indigenous species would no doubt be found in other seasons.

Risk	Indigenous species
V	*Acacia mearnsii*, Black Wattle*
V	*Acacia melanoxylon*, Blackwood*
V	*Acacia verticillata*, Prickly Moses
	Austrostipa rudis subsp. *rudis*, Veined Spear-grass*
	Billardiera mutabilis, Common Apple-berry
	Bursaria spinosa, Sweet Bursaria
E	*Centella cordifolia*, Centella
	Deyeuxia quadriseta, Reed Bent-grass
	Dianella revoluta, Black-anther Flax-lily
	Dianella tasmanica, Tasman Flax-lily
E	*Dipodium roseum*, Rosy Hyacinth-orchid
C	*Epacris impressa*, Common Heath
	Eragrostis brownii, Common Love-grass
E	*Eucalyptus cephalocarpa*, Mealy Stringybark
E	*Eucalyptus obliqua*, Messmate Stringybark*
E	*Eucalyptus radiata*, Narrow-leaved Peppermint
	Euchiton japonicus, Creeping Cudweed
V	*Exocarpos cupressiformis*, Cherry Ballart
C	*Gahnia radula*, Thatch Saw-sedge*
E	*Gahnia sieberiana*, Red-fruit Saw-sedge
	Gonocarpus tetragynus, Common Raspwort
	Goodenia ovata, Hop Goodenia*
E	*Hypericum gramineum*, Small St John's Wort
	Isolepis inundata, Swamp Club-rush
	Kunzea ericoides group, Burgan
	Lepidosperma elatius, Tall Sword-sedge
	Leptospermum scoparium, Manuka
E	*Lobelia anceps*, Angled Lobelia
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
	Lomandra filiformis subsp. *filiformis*, Wattle Mat-rush
	Lomandra longifolia, Spiny-headed Mat-rush*
	Microlaena stipoides, Weeping Grass

Risk	Indigenous species
V	*Microtis* ?*parviflora*, Slender Onion-orchid
V	*Opercularia varia*, Variable Stinkweed
V	*Ozothamnus ferrugineus*, Tree Everlasting
E	*Pimelea humilis*, Common Rice-flower
E	*Platylobium infecundum*, a flat-pea
	Poa morrisii, Soft Tussock-grass
E	*Poa tenera*, Slender Tussock-grass
	Pteridium esculentum, Austral Bracken
E	*Rytidosperma pallidum*, Red-anther (or Silvertop) Wallaby-grass
	Rytidosperma penicillatum, Slender Wallaby-grass
E	*Rytidosperma semiannulare*, Tasmanian Wallaby-grass
	Schoenus apogon, Common Bog-rush
	Senecio quadridentatus, Cotton Fireweed
E	*Stylidium armeria*, Common Triggerplant
	Tetrarrhena juncea, Forest Wire-grass
	Themeda triandra, Kangaroo Grass

Introduced species
Agrostis capillaris, Brown-top Bent
Crocosmia × *crocosmiiflora*, Montbretia
Dactylis glomerata, Cocksfoot
Hakea salicifolia, Willow-leaf Hakea
Holcus lanatus, Yorkshire Fog
Hypochaeris radicata, Cat's Ear
Paspalum dilatatum, Paspalum
Pinus radiata, Monterey Pine
Pittosporum undulatum, Sweet Pittosporum
Ranunculus repens, Creeping Buttercup
Rubus anglocandicans, Blackberry

Notes concerning some of the plant species

Gahnia sieberiana (Red-fruit Saw-sedge) – a dominant species in the Swampy Woodland of the fenced sanctuary – a stronghold of this locally-endangered species in Knox.

Platylobium infecundum (a flat-pea) – critically endangered globally; recorded in 2002 as being fairly abundant in the Grassy Forest / Valley Heathy Forest, both inside and outside the sanctuary.

Fauna of special significance

None found.

Fauna habitat features

- The substantial numbers of *Gahnia sieberiana* would provide good habitat for the locally uncommon Swordgrass Brown butterfly, whose conservation has been made a priority by Knox City Council and the Knox Environment Society;
- The groundcover of dense grasses and sedges in and adjacent to the sanctuary is excellent habitat for insects that rely on such habitat, including butterflies. A survey for skipper butterflies would be worthwhile;
- The trees would attract a reasonable diversity of forest birds, and probably also bats;
- The damp vegetation along the drainage line, and its proximity to drier vegetation, are ideal for the Southern Brown Tree Frog, which was observed at the site in 2002.

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).

Vegetation Type and Condition

Grassy Forest, Valley Heathy Forest and Swampy Woodland are all regionally-endangered EVCs. The Department of Energy, Environment & Climate Action's significance criterion 3.2.3 (Amos 2004) assigns State significance to a 'remnant patch' of an Endangered EVC. The definition of a 'remnant patch' for that purpose is 'a continuous area of native vegetation that is at least 0.25 hectares in extent and indigenous native understorey cover is 10% or greater'. This definition is met by native vegetation that extends from the school into George Grumont Reserve, thereby qualifying for **State** significance.

Threatened Plant Species

Viewing the site from George Grumont Reserve in 2023, the author formed the view that Site 24 was unlikely to have lost the substantial population of the flat-pea, *Platylobium infecundum*, that he had recorded in 2002. That species is listed under the *Flora and Fauna Guarantee Act* as Critically Endangered and it does not occur

outside Victoria. As a result, the habitat provided for *Platylobium infecundum* in the site qualifies as **National** significance under criterion 3.1.2.

Platylobium infecundum had not been scientifically described in 2010 when the previous edition of this report was written. As a result, the site's significance level has risen from State to National.

Many of the locally-threatened plant species listed above were recorded in 2002 as having viable populations. Looking from outside the fence in 2024, at least some of those species still have viable populations, thereby meeting criterion 3.1.5 for **Local** significance.

Threats

The following appear to be the main threats to the site's conservation significance, in roughly decreasing order of severity or urgency:

- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of climate change. Viewed from George Grumont Reserve, the environmental weed species, Sweet Pittosporum, appears to be having a large adverse impact;
- 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);
- Loss or decline of plant species that are present in such precariously small numbers that they are vulnerable to inbreeding, poor reproductive success or localised chance events;
- Potentially trampling in the playground, but the vegetation appears to have reached a stable state with the current level of trampling and other play activities.

Strategic planning

- This site is covered by Schedule 2 of the Environmental Significance Overlay (ESO2) as a result of the previous (2010) edition of this report. That edition cited the regionally-endangered EVCs. Since then, *Platylobium infecundum* has been scientifically described as a species and recognised to be critically endangered, raising the site's biological significance to the National level. Despite this change, ESO2 remains an appropriate protective instrument. The only apparent reason to amend the ESO2 boundary is to very slightly refine its corners to match property corners in the current state cadastre;
- The whole school and its surroundings are covered by Schedule 3 of the Significant Landscape Overlay (SLO3) and Schedule 2 of the Design and Development Overlay (DDO2);
- The school is larger than 0.4 ha and therefore does not qualify for the size-based exemption from the state-wide baseline planning controls over removal of native vegetation (clause 52.17);
- The whole school is zoned Neighbourhood Residential Zone – Schedule 1 (NRZ1), like the residential properties that abut it;
- The school and its surroundings are inside the Urban Growth Boundary for Melbourne.

Information sources used in this assessment

- An ecological survey undertaken by Dr Lorimer for 1 hour 30 minutes on 3/4/02 for the first edition of this report. This included a description of the vegetation composition, compilation of lists of indigenous and introduced plant species for three separate parts of the site, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- An inspection from George Grumont Reserve on 16th June 2024, focusing on changes to the vegetation;
- A check for records of flora and fauna observations stored in the Atlas of Living Australia, finding none;
- The Victorian Government's 'NatureKit' website;
- Aerial and satellite imagery from between 1946 and 2024;
- Maps of geology, topography and strategic planning information produced by agencies of the Victorian Government.

Acknowledgment

Thank you to the school for permission to inspect the site in 2002.