Site 21. Dobson's Treed Paddock, The Basin

A treed area of 1.6 ha with grazed native understorey vegetation, in a semi-rural landscape, close to suburbia and also to more substantial areas of habitat for native flora and fauna.

Summary of significant features:

- Nationally significant: a population of the flat-pea, *Platylobium infecundum*, which is Critically Endangered globally;
- State significance: a patch of the regionally vulnerable Ecological Vegetation Class called Grassy Forest;
- Locally significant: viable populations of plant species that are threatened with dying out in Knox.

Aerial photograph and plan: See page 159, which covers this site, Liverpool Road Retarding Basin and Sugarloaf Hill.

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

Boundaries

This 1.6-hectare site is outlined with orange dashes on page 159, unchanged from the previous (2010) edition of this report. The site boundary is intended to be a simple shape that circumscribes the treed area that can be seen on the aerial photograph. It lies within a single lot, and while it is usually preferable to make site boundaries align with property boundaries, it does not seem reasonable in this case: the rest of the lot slopes away from the site and is much less likely to affect the site than the homes and gardens on Academy Drive, uphill.

Land use & tenure: Part of a private Rural Living lot, used for horse agistment.

Site description

The site is on a lower, north-facing slope at the very edge of the Dandenong Ranges. The elevations are 141–163 m and the slope is 1:8 (12–13%). The soil is loam over clay subsoil, derived from the Mt Evelyn rhyodacite formation of the Dandenong Ranges volcanic group.

This area has been previously fenced, but the only fences that remain are on the southwestern and southeastern boundaries (corresponding to lot boundaries). Almost half the site has a full canopy of remnant eucalypts but there is a canopy gap in the middle. Mature Monterey Pines are scattered among the eucalypts along the site's southeastern edge and they dominate the vegetation in the northern half of the site. The pines are seriously degrading the ecological condition of the native vegetation through the effects of their shade, soil modification and competition for soil moisture and nutrients. The pine-dominated area also has serious eucalypt dieback, no doubt exacerbated or caused by the pines. Lesser dieback has occurred across the rest of the site.

The treeless parts of the site's northern lobe have very little native vegetation.

Elsewhere in the site, horses have grazed the native understorey, eliminating many shrub species and stunting the remainder. The groundcover has survived rather better, retaining a substantial number of wildflowers. Environmental weeds have secured a foothold, particularly where there are signs of digging many years ago, but the grazing is suppressing many environmental weeds as much as it is suppressing the indigenous flora.

Overall, the site has many large eucalypts in fair to good condition, up to approximately 25 m tall. This is significant because of the importance of such trees for nesting and roosting of wildlife (bats, birds, possums) and the severe depletion of large eucalypts in Knox and the metropolitan area as a whole. Such trees become much more common east of nearby Sheffield Rd.

Relationship to other land

The site is 60 m from Liverpool Road Retarding Basin (Site 21) and 320 m from native vegetation of the Dobson Creek habitat corridor (in Site 20), each of which are well connected to other native habitat. Dobson's treed paddock may act as an ecological stepping-stone between these sites for movement of birds, bats and insects. Apart from their intrinsic value, birds and insects can play an important role in dispersal of pollen and seeds.

Bioregion

The site is on the border between the Highlands Southern Fall and the Gippsland Plain, and is better taken as being in the former bioregion because the site is geologically and topographically part of the Dandenong Ranges and its vegetation best matches the form of Grassy Forest (EVC 128) that occurs in the Highlands Southern Fall.

Habitat type

Grassy Forest (EVC 128, **regionally Vulnerable**, or Endangered if the bioregion is taken to be the Gippsland Plain): Total area 1.6 hectares, of which approximately 0.5 ha is in fair ecological condition (rating C) and 1.1 ha is in poor ecological condition (rating D).

Canopy trees: Dominated by *Eucalyptus obliqua*, followed by *E. radiata*. There are scattered *E. goniocalyx* and very few living *macrorhyncha* since deaths during the Millennium Drought. The eucalypts reach 25 m tall and are typically 4 m apart.

Sub-canopy trees: *Exocarpos cupressiformis* was abundant in 2002 but is now sparse. *Acacia melanoxylon* is scarce. Both these species are up to about 8 m tall.

Shrubs: Heavily grazed. The main species left are *Coprosma quadrifida* and *Bursaria spinosa*. *Acacia stricta* and *Cassinia aculeata* were recorded in 2002 but the 2024 inspection was done from public land and could not spot either of those species.

Vines: *Clematis aristata* is abundant and *Pandorea pandorana* is present, but both are grazed.

Ferns: *Pteridium esculentum* is fairly abundant, perhaps encouraged by grazing.

Groundcover: Greatly reduced in density and depth by grazing. As reported in the 2002 survey, the groundcover is dominated by *Microlaena stipoides*, *Rytidosperma penicillatum*, *Gahnia radula* and pasture grasses; also with many *Carex breviculmis* and *Austrostipa rudis*. Character species include *Gonocarpus tetragynus*, *Platylobium infecundum* and *Veronica calycina* (the last of which not seen in the 2024 inspection).

Plant species

The following wild vascular plant species were observed by the author in a fairly thorough survey in April 2002 and/or an inspection from public land in June 2024. Indigenous species with an asterisk after their names were only seen in 2002. Introduced species were only recorded in 2002. 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 and listed under the Victorian *Flora and Fauna Guarantee Act*.

Risk	Indigenous species
V	*Acacia melanoxylon*, Blackwood
E	*Acacia stricta*, Hop Wattle*
	Acaena novae-zelandiae, Bidgee-widgee
V	*Acrotriche prostrata*, Trailing Ground-berry*
	Austrostipa rudis subsp. *rudis*, Veined Spear-grass
	Billardiera mutabilis, Common Apple-berry*
	Bursaria spinosa, Sweet Bursaria
	Carex breviculmis, Short-stem Sedge*
	Cassinia aculeata, Common Cassinia*
V	*Clematis aristata*, Mountain Clematis
V	*Coprosma quadrifida*, Prickly Currant-bush
C	*Cyathea australis*, Rough Tree-fern
	Dichondra repens, Kidney-weed
V	*Eucalyptus goniocalyx*, Bundy
C	*Eucalyptus macrorhyncha*, Red 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*
	Gonocarpus tetragynus, Common Raspwort*
	Goodenia ovata, Hop Goodenia*
C	*Hackelia suaveolens*, Sweet Hound's-tongue*
E	*Hardenbergia violacea*, Purple Coral-pea*
	Juncus amabilis, Hollow Rush*
	Juncus pallidus, Pale Rush
E	*Juncus subsecundus*, Finger Rush
	Lachnagrostis filiformis, Common Blown-grass*
E	*Lagenophora adenosa/stipitata*, a bottle-daisy
	Leptospermum scoparium, Manuka*
	Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush*
	Microlaena stipoides, Weeping Grass
V	*Opercularia ovata*, Broad-leaf Stinkweed*
V	*Opercularia varia*, Variable Stinkweed*
	Oxalis exilis/perennans, Wood-sorrel
	Pandorea pandorana, Wonga Vine
E	*Platylobium infecundum*, a flat-pea
	Poa morrisii, Soft Tussock-grass*
	Poranthera microphylla, Small Poranthera*

Risk	Indigenous species
	Pteridium esculentum, Austral Bracken
	Rytidosperma penicillatum, Slender Wallaby-grass
	Rytidosperma racemosum, Clustered Wallaby-grass*
	Rytidosperma tenuius, Purplish Wallaby-grass*
	Senecio hispidulus, Rough Fireweed*
V	*Senecio prenanthoides*, Common Fireweed*
	Tetrarrhena juncea, Forest Wire-grass*
	Themeda triandra, Kangaroo Grass*
C	*Veronica calycina*, Hairy Speedwell*

Introduced species
Acacia baileyana, Cootamundra Wattle
Agrostis capillaris, Brown-top Bent

Introduced species
Anthoxanthum odoratum, Sweet Vernal-grass
Centaurium erythraea, Common Centaury
Crataegus monogyna, Hawthorn
Crepis capillaris, Smooth Hawksbeard
Dactylis glomerata, Cocksfoot
Ehrharta erecta, Panic Veldt-grass
Hedera helix/hibernica, Ivy
Hypochaeris radicata, Cat's Ear
Ilex aquifolium, Holly
Pinus radiata, Monterey Pine
Pittosporum undulatum, Sweet Pittosporum
Plantago lanceolata, Ribwort
Prunella vulgaris, Self-heal
Rubus anglocandicans, Blackberry
Trifolium repens, White Clover
Vinca major, Blue Periwinkle

Fauna of special significance

No fauna survey has been done but Powerful Owls (listed as Vulnerable) are likely to visit occasionally. In 2002, a Powerful Owl was found roosting 500 m away in Site 20. The habitat on Dobson's treed paddock would form only a small fraction of the range of a Powerful Owl.

Fauna habitat features

- A substantial sized patch of large eucalypts (many of which are diseased), some with hollows;
- The possible role as a stepping-stone for movement of birds, bats and insects (see above).

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

According to the criteria of *'Victoria's Native Vegetation Management – A Framework for Action'* (NRE 2002a), remnants of a regionally vulnerable EVC (including Grassy Forest) have a conservation significance rating of Medium to Very High, depending on their habitat score. No habitat score has been determined in the present site, but it is quite possible that some of the vegetation would reach the threshold of 0.3 that would make the conservation significance High according to the Framework criteria. Any such vegetation qualifies for **State** significance under criterion 3.2.3 of Amos (2004). This may reduce to Regional in light of a formal assessment of habitat scores after the vegetation is allowed to recover from grazing.

Faced with some uncertainty between the State and Regional ratings, it is recommended that the Precautionary Principle be applied. This principle is well established in Australian and Victorian environmental law and would mean that the site should be protected almost the same as if it were definitely of State significance.

Threatened Plant Species

The flat-pea, *Platylobium infecundum*, occurs in the site in 2024 but its abundance could not be determined in the 2024 site inspection, which was done from public land. 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.

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

Threats

- Displacement of indigenous flora and fauna by environmental weeds, exacerbated by debilitation of the native vegetation by the impacts of the threats below. The environmental weed species with greatest impact appear (from public land) to be Monterey Pine (*Pinus radiata*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Blackberry (*Rubus anglocandicans*) and Ivy (*Hedera* sp.);
- Rapid escalation of environmental weeds if grazing ceases and other control measures are not taken;
- 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);
- Continuation of the current moderate to severe eucalypt dieback disease, exacerbated by the effects of climate change;
- Grazing impacts on remnant vegetation;
- Rabbits, which are fairly abundant;
- Loss or decline of plant species that are present in such precariously small numbers that they are vulnerable to inbreeding, poor reproductive success, the threats above or elimination by chance incidents;
- Potential development.

Management

Controlling the large population of rabbits on this site would require cooperation with surrounding landowners.

Strategic planning

- As discussed above, the site's planning should be administered almost the same as if it were definitely of State significance, based on the Precautionary Principle;
- This site is covered by Schedule 2 of the Environmental Significance Overlay (ESO2) on the basis of the previous (2010) edition of this report. That edition cited potential residential subdivision and the matters of biological significance cited above other than *Platylobium infecundum*. Since then, *Platylobium infecundum* has been scientifically described as a species and recognised to be critically endangered, raising the importance of planning protection. Despite that change, ESO2 remains an appropriate protective instrument;
- The whole site is covered by 'Green Wedge Zone – Schedule 2' (GWZ2) and Schedule 4 of the Significant Landscape Overlay (SLO4). The Bushfire Management Overlay affects most of the site;
- The property 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 site is outside the Urban Growth Boundary for Melbourne.

Information sources used in this assessment

- Detailed vegetation data compiled by Dr Lorimer over 1½ hours on 3rd April 2002 for the first edition of this report;
- An inspection by Dr Lorimer in June 2024 for this edition, from public land;
- A check for records of flora and fauna observations stored in the Atlas of Living Australia, of which there were none;
- A check of the Victorian Government's 'NatureKit' website, which does not even show any native vegetation to exist on the site;
- 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

Thanks to Jim Dobson for granting permission to inspect the site in 2002.