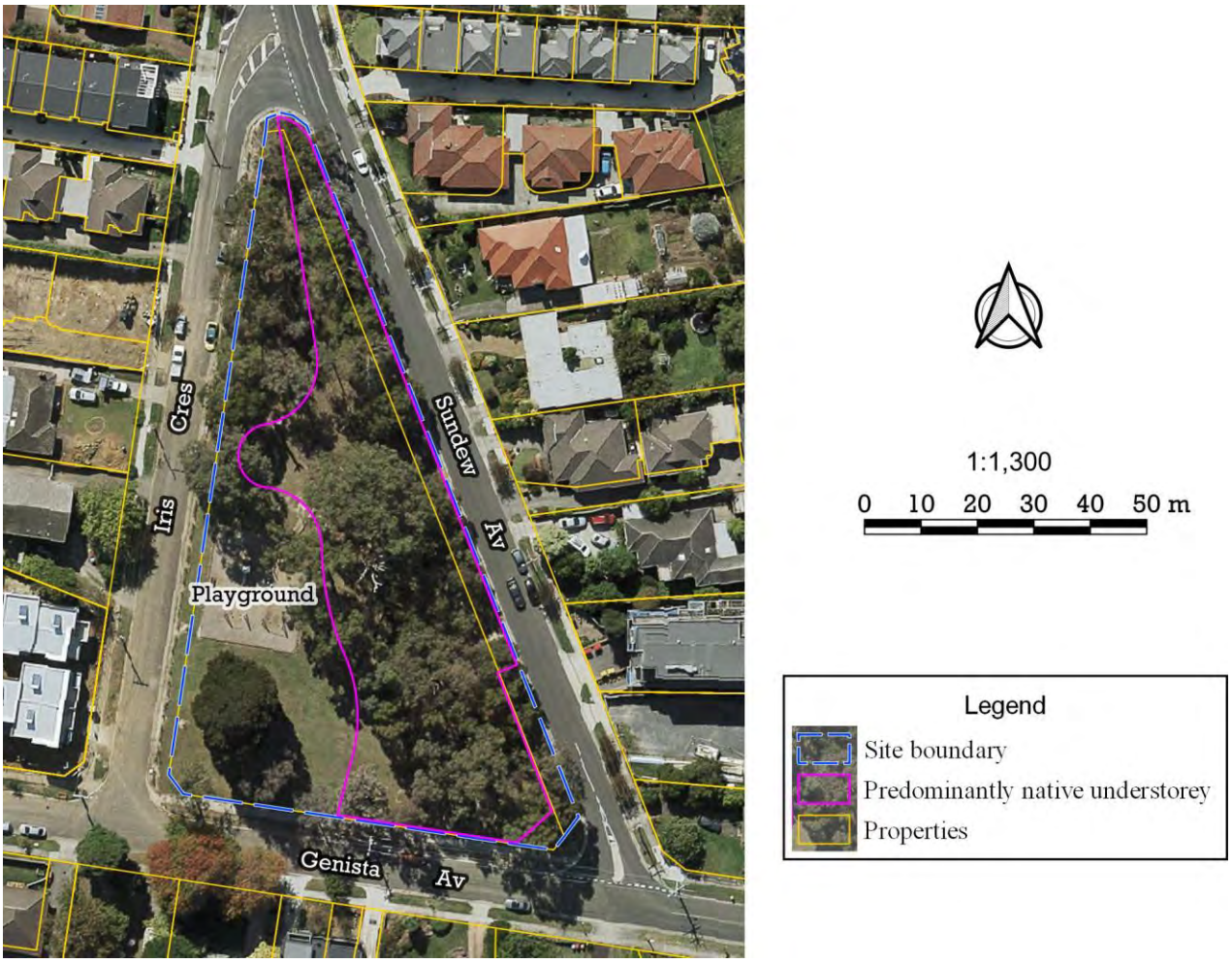
Site 30. Genista (or Sundew) Reserve, Boronia

A small Council park with native vegetation.

Summary of significant features:

- State significance: a patch of the regionally-endangered vegetation type, Valley Heathy Forest;
- Locally significant: viable populations of several plant species that are threatened with dying out in Knox, notably the regionally-rare Scaly-foot Wallaby-grass.



Boundaries

The site is the whole of the reserve, supplemented by the nature strip along Sundew Avenue. It measures 5,023 m². The boundary is outlined with blue dashes above.

Land use & tenure: Council park with a playground.

Site description

This reserve has no official name. The second (2010) edition of this report suggested 'Sundew Reserve', referencing the reserve's sundews and the abutting Sundew Av. Instead, a sign has since been erected with the name, Genista Reserve, referencing the abutting Genista Av and the declared noxious *Genista monspessulana* (Montpellier Broom) that once grew in the reserve.

The park is almost flat, at an elevation of just under 120 m. The soil is shallow, poorly draining, clay loam over clay subsoil. The soil has been produced by *in-situ* weathering of Lower Devonian siltstone of the Humevale

formation, possibly metamorphosed into hornfels by the heat of magma that eventually formed the Dandenong Ranges to the east.

A 1946 aerial photograph shows that there were only four trees in the site, probably pines. There were no shrubs. A 1976 aerial photograph shows the four trees as having been removed, replaced by a generation of trees that include some of the eucalypts present today. There were still few if any shrubs. The whole site's groundcover was kept mown until around the turn of the 21st Century, when mowing ceased within most of the area outlined in magenta on the aerial photograph above. The cessation of mowing resulted in regeneration of a surprising number of indigenous plant species, from groundcovers to eucalypts. Some small indigenous species persist in part of the reserve where mowing continues. There has also been a small amount of planting of indigenous species.

However, in the reserve's southeast, indigenous groundcover is still being mown low and frequently, causing the slow loss of species, including locally threatened species.

Many of the reserve's indigenous plant species are represented by very few individuals – only one or two in some cases. Some of them are significantly scarcer than when the author first inspected the reserve in 2002. Some other species have proliferated.

The fraction of the reserve's area that has predominantly indigenous understorey (the magenta-outlined area) has increased substantially since the author's first inspection in 2002. However, the ecological condition of some of the indigenous understorey has deteriorated since 2002, largely associated with proliferation of the lawn species, Buffalo Grass and Kikuyu Grass.

Interestingly, the reserve has an unusually large range of species of indigenous mosses and liverworts. Two of those species had not been recorded in Knox prior to the inspection for this edition in 2024. (However, mosses and liverworts are poorly surveyed in Knox and in general.)

Relationship to other land

This site is quite ecologically isolated, but some native birds and insects visit the park as they move around nearby treed neighbourhoods and the Belgrave Railway Line corridor (Site 88, 100 m away).

Bioregion: Gippsland Plain

Habitat types

Valley Heathy Forest (EVC 127, **Endangered**): 2,500 m², of which 10% is estimated to be in good ecological condition (rating B), 70% in fair ecological condition (rating C) and 20% in poor ecological condition (rating D).

Canopy trees: *Eucalyptus obliqua* dominates; *E. cephalocarpa* is subdominant.

Sub-canopy trees: *Acacia melanoxylon* and *Allocasuarina littoralis* have regenerated from plants that had been mown for perhaps scores of years.

Shrubs: Naturally-occurring shrubs have been reduced to a single *Pultenaea gunnii*. A single *Epacris impressa* was present in 2002 but none have been present in subsequent surveys.

Vines and Ferns: None found.

Groundcover: Grassy and with abundant herbs, patchy in composition. *Microlaena stipoides* (which tolerates mowing well) and *Acrotriche prostrata* each dominate small areas but the introduced Buffalo Grass (*Stenotaphrum secundatum*) is taking over in the south. Indigenous species that are abundant but not dominant in foliage cover include *Austrostipa pubinodis, Carex breviculmis, Gonocarpus tetragynus, Lomandra filiformis* (two subspecies), *Opercularia ovata, Oxalis exilis/perennans, Poa morrisii, Poranthera microphylla, Rytidosperma racemosum, Schoenus apogon, Solenogyne dominii, S. gunnii* and *Themeda triandra*. Typical of Valley Heathy Forest, orchids are represented by *Microtis* and *Thelymitra*.

Plant species

The following list includes plant species recorded as growing wild in the reserve, plus indigenous species that have been planted. The data comes almost wholly from botanical surveys by the author on 20/8/02, 2/10/15 and June 2024. Species not seen in 2024 are indicated by the year of the last sighting in parentheses. Onion-orchids were seen in 2024 but at that time of year, it is not possible to distinguish the species. Wild species with names in bold are rare throughout metro Melbourne. The column headed 'Risk' indicates the risk of species dying out in Knox as follows: 'C'=Critically Endangered; 'E'=Endangered; 'V'=Vulnerable; and 'N'=Near threatened.

Risk Wild indigenous species

Mosses and liverworts

Campylopus clavatus, Broody Swan-neck Moss
Fissidens bifrons, a pocket-moss
Fossombronia ?*wondraczekii*, a liverwort
Hypnum cupressiforme, Common Hypnum
Lethocolea pansa, a liverwort
Thuidiopsis furfurosa, Golden Weft-moss (2015)
Polytrichum juniperinum, Common Juniper-moss

Ferns and flowering species

V *Acacia melanoxylon*, Blackwood
V *Acaena echinata*, Sheep's Burr (2015)
V *Acrotriche prostrata*, Trailing Ground-berry
V *Allocasuarina littoralis*, Black Sheoak
Arthropodium strictum, Chocolate Lily
Austrostipa pubinodis, Tall Spear-grass
Austrostipa rudis subsp. *rudis*, Veined Spear-grass (2015)
N *Bossiaea prostrata*, Creeping Bossiaea
Carex breviculmis, Short-stem Sedge
E *Centella cordifolia*, Centella
C *Coronidium scorpioides*, Button Everlasting (2020)
Crassula decumbens, Spreading Crassula
C *Diuris chryseopsis*, Golden Moths (2016)
V *Drosera aberrans*, Scented Sundew
N *Drosera gunniana/hookeri*, a sundew (2019)
C *Epacris impressa*, Common Heath (2002)
Eragrostis brownii, Common Love-grass
E *Eucalyptus cephalocarpa*, Mealy Stringybark
E *Eucalyptus obliqua*, Messmate Stringybark
Euchiton japonicus, Creeping Cudweed
V *Exocarpos cupressiformis*, Cherry Ballart
Gonocarpus tetragynus, Common Raspwort
V *Hemarthria uncinata*, Mat Grass
E *Hypericum gramineum*, Small St John's Wort (2015)
Lomandra filiformis subsp. *coriacea*, Wattle Mat-rush
Lomandra filiformis subsp. *filiformis*, Wattle Mat-rush
Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush (2015, probably planted)
V *Luzula meridionalis* var. *flaccida*, Common Woodrush
Microlaena stipoides, Weeping Grass
V *Microtis parviflora*, Slender Onion-orchid (2002)
E *Microtis unifolia*, Common Onion-orchid (2015)
V *Opercularia ovata*, Broad-leaf Stinkweed
Oxalis exilis/perennans, Wood-sorrel
Pandorea pandorana, Wonga Vine
Poa morrisii, Soft Tussock-grass
Poranthera microphylla, Small Poranthera
V *Pultenaea gunnii*, Golden Bush-pea
C *Rytidosperma lepidopodum*, Scaly-foot Wallaby-grass
Rytidosperma ?*penicillatum*, Slender Wallaby-grass (2015)

Risk Wild indigenous species

Rytidosperma racemosum, Clustered Wallaby-grass
Rytidosperma setaceum, Bristly Wallaby-grass
Schoenus apogon, Common Bog-rush
Senecio minimus, Shrubby Fireweed (2015)
V *Solenogyne dominii*, Smooth Solenogyne
V *Solenogyne gunnii*, Hairy Solenogyne
E *Thelymitra* ?*peniculata*, Trim Sun-orchid
Themeda triandra, Kangaroo Grass
Tricoryne elatior, Yellow Rush-lily
C *Wahlenbergia multicaulis*, Tadgell's Bluebell
E *Wurmbea dioica*, Common Early Nancy (2015)

Risk Planted species

V *Acacia stictophylla*, Dandenong Range Cinnamon Wattle
Dianella longifolia var. *longifolia*, Pale Flax-lily
Dianella tasmanica, Tasman Flax-lily
Dietes grandiflora, Wild Iris
Eucalyptus sideroxylon, Mugga
C *Eucalyptus viminalis* subsp. *viminalis*, Manna Gum
Lomandra longifolia subsp. *longifolia*, Spiny-headed Mat-rush

Wild introduced species

Agrostis capillaris, Brown-top Bent
Anthoxanthum odoratum, Sweet Vernal-grass
Arctotheca calendula, Cape Weed (2015)
Briza maxima, Large Quaking-grass
Cassinia sifton, Sifton Bush
Cenchrus clandestinus, Kikuyu
Centaurium erythraea, Common Centaury
Cerastium glomeratum s.l., Common Mouse-ear Chickweed (2015)
Cicendia filiformis, Slender Cicendia (2015)
Cirsium vulgare, Spear Thistle (2015)
Coprosma repens, Mirror-bush (2015)
Cotoneaster glaucophyllus, Cotoneaster (2015)
Cotoneaster pannosus, Cotoneaster
Crepis capillaris, Smooth Hawksbeard (2002)
Cynodon dactylon, Couch (2015)
Dactylis glomerata, Cocksfoot
Ehrharta erecta, Panic Veldt-grass (2002)
Ehrharta longiflora, Annual Veldt-grass (2015)
Erica lusitanica, Spanish Heath (2002)
Festuca ?*rubra*, Red Fescue
Galium murale, Small Bedstraw (2015)
Genista monspessulana, Montpellier Broom (2002)
Hedera helix/hibernica, Ivy
Hypochaeris radicata, Cat's Ear
Linum trigynum, French Flax (2015)
Lysimachia arvensis, Pimpernel (2015)
Oxalis incarnata, Pale Wood-sorrel
Paspalum dilatatum, Paspalum

Wild introduced species

Pinus radiata, Monterey Pine (2015)
Pittosporum undulatum, Sweet Pittosporum
Plantago coronopus, Buck's-horn Plantain (2015)
Plantago lanceolata, Ribwort
Prunella vulgaris, Self-heal (2002)
Pseudoscleropodium purum, Neat Feather-moss

Wild introduced species

Romulea rosea, Common Onion-grass
Soliva sessilis, Jo Jo
Sonchus oleraceus, Sow-thistle (2015)
Sporobolus africanus, Rat-tail Grass
Stenotaphrum secundatum, Buffalo Grass
Trifolium repens, White Clover (2002)

Fauna of special significance

None observed.

Fauna habitat features

The reserve's eucalypts (even planted non-indigenous species) provide habitat for native forest birds and invertebrates. The native groundcover would suit skinks and a range of invertebrates.

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).

Regionally Threatened Ecological Vegetation Class

Amos (2004) adopted a definition of a remnant patch as a continuous area of at least 0.25 ha with at least 10% cover of native understorey throughout. The reserve's vegetation just meets the size threshold, within the precision that can be attained. As such, the vegetation just meets criterion 3.2.3 for **State** significance 3.2.3, taking into account that the vegetation type is the regionally-endangered Valley Heathy Forest.

At the time of the previous edition of this report (in 2010), the size threshold of 0.25 ha was not met.

Threatened Plants

Some of the locally-threatened plant species listed above have viable populations, thereby meeting criterion 3.1.5 for **Local** significance. Most notable of those is the regionally-rare Scaly-foot Wallaby-grass (*Rytidosperma lepidopodum*).

Threats

- Dogs scratching out locally-threatened plant species. The apparent loss of the Golden Moths orchid (which is very rare in the district) may well be due to this cause, as dogs regularly defecate and scratch at that location;
- Displacement of indigenous flora by environmental weeds, particularly Buffalo Grass (*Stenotaphrum secundatum*) and Kikuyu Grass (*Cenchrus clandestinum*);
- 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 such as being scratched out buy a dog or struck by a falling tree limb;
- Mowing native groundcover too low and too frequently, as is happening in the reserve's southeast corner;
- Human-induced climate change, which is predicted to cause more severe droughts, heatwaves and storms, as well as substantially lower rainfall (particularly in winter).

Management

- It would be desirable to cease mowing the southern part of the area outlined in magenta on the aerial photograph. That mown area has a moderate to high (but declining) component of native plant species, including the locally-threatened *Luzula meridionalis* and *Bossiaea prostrata*. If complete cessation of mowing is unacceptable, the next-best alternative is to mow less frequently and not so low as to scalp the vegetation (as has been happening);
- Dogs off lead are a significant environmental problem in the reserve.

Strategic planning

- As a result of the second edition of this report in 2010, this site is covered by Schedule 2 of the Environmental Significance Overlay (ESO2). That edition cited the locally-threatened sundews and the regionally-

endangered Valley Heathy Forest. Since then, one of the sundew species has dwindled or died out but the significance level of the Valley Heathy Forest has risen from Local to State (see above). Despite those changes, ESO2 remains an appropriate protective instrument. No change is recommended to the boundary or content of ESO2;

- The reserve 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 reserve is zoned Public Park and Recreation Zone (PPRZ). All land surrounding the reserve is zoned General Residential Zone – Schedule 4 (GRZ4).

Information sources used in this assessment

- An ecological survey undertaken by Dr Lorimer for 1 hour 25 minutes on 15th and 20th August 2002 for the first edition of this report. This included a description of the vegetation composition, compilation of a list of indigenous and introduced plant species, incidental fauna observations, and checks for fauna habitat, ecological threats and management issues;
- A follow-up ecological survey undertaken by Dr Lorimer on 2nd October 2015, including (in part) a list of all vascular plant species and their abundances (or counts and precise locations of individuals, in the case of scarce species);
- A follow-up botanical survey of 2¼ hours undertaken by Dr Lorimer for this report on 6th and 19th June 2024, including a list of all vascular and non-vascular plant species and their abundances (or counts and precise locations of individuals, in the case of scarce species);
- Records of flora and fauna observations stored in the Atlas of Living Australia;
- 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.