

MAINTENANCE PLAN

Barlow St Forest

24/07/2023

by **jila** for The Dirt Witches

Overview

This planting is a recreation of the critically endangered Eastern Suburbs Banksia Scrub (ESBS), which is an endemic to the area. This planting re-introduces a functional, messy eco-system to the urban environment.

ESBS is a landscape that has been cared for by Gadigal, Birrabirragal and Dharawal people for thousands of years before European settlement.

The following maintenance plan is a series of actions framed as acts of ecological assistance, they do not set out to achieve an aesthetic or form and are driven by the natural processes that occur in a functioning ecosystem. They are acts of care that respond to the seasons and the agency of the flora and fauna and rely on observation and responding to a constantly changing landscape.

- Prune to mimic fire, assist with pollination, facilitate recruitment of self sown juvenile plants and for public amenity.
- Water to mimic large rain events.
- Fertilise to nurture the soil as a living biota of fungal and microbial relationships.

The table of maintenance actions is arranged by plant to illustrate expected observations and the actions needed to respond to these observations, it is a document that will be reviewed periodically and updated as the garden matures.

The timing of the maintenance actions is entirely dependent on when plants fruit and flower, when this happens will be unique to the specific microclimate of the site and the weather. Estimates for when these events may occur have been made. Use this plan to inform site observations that will determine the right time to act.

Above all, walk on this site with care and work with respect. This small forest reflects an ancient landscape that once existed on this site and is to be treated with reverence.

Reporting

Public art maintenance contractors will inspect the forest weekly as part of routine maintenance of the City's public art collection and

- remove any rubbish and litter
- report any tagging or vandalism
- report any broken trees or plant material.

Site inspections with the City's greening and tree contract managers and the public art manager to review plant establishment, growth and health will be once at the start of the maintenance period and once every 3 months for the first year.

Guide notes on maintenance

Mulching

It is intended for ground covers to eventually create a green mulch generally covering the ground plane. Areas of bare soil max 1m² are ok as this creates habitat for ground dwelling insects.

- all prunings should be processed to <300mm lengths and left in the garden to break down
- ensure any mulch/pruning are kept away from the base of plants to allow plants sufficient access to water and air.

Pruning

Much of the planting is shaded and pruning is done to encourage density and to prevent plants from becoming leggy. Do not prune to isolate individual plants, it is intended for plants to grow into each other to eventually create a dense scrub.

- generally tip prune after flowering to encourage dense growth
- allow plants to overflow edges on high side
- only trim back plants from footpath if necessary to remove trip hazards
- all prunings should be processed to <300mm lengths and left in the garden to break down

Watering

Generally this is a low water environment and watering should only be done to ensure adequate soil moisture in periods of low rainfall. In this shaded location overwatering may cause the plants and mulch to rot.

- ALWAYS check soil moisture before watering
- deep watering when soil is dry
- check areas of poor drainage and impact on plants – if necessary respond with appropriate replacement planting
- lower area in NW corner with *Banksia robur* and *Baurea rubioides* can be damp and has been planted accordingly

Weeding

- refer to CoS specifications on maximum weed coverage and species to be removed
- all weeding to be by hand – no pesticides to be used

Fertilising

Plants in this garden generally thrive in a low nutrient environment, 'fertilising' is done to ensure a healthy soil biota.

- fertilise entire planting with a mycorrhizal inoculation to manufacturers specifications
- fertilise only the plants specified in the maintenance table with low phosphorous fertiliser specific to native plants – equal to Bush Tucker by Neutrog

Replacement plants

Replant with the species as specified in the attached planting plan unless proven to be in-appropriate, if not available suitable substitutes are specified in the table attached.

Substitutes must be of similar height, spread and form and must be suitable to the micro-climate they are being planted into and all replanting is to be done in consultation with the client.

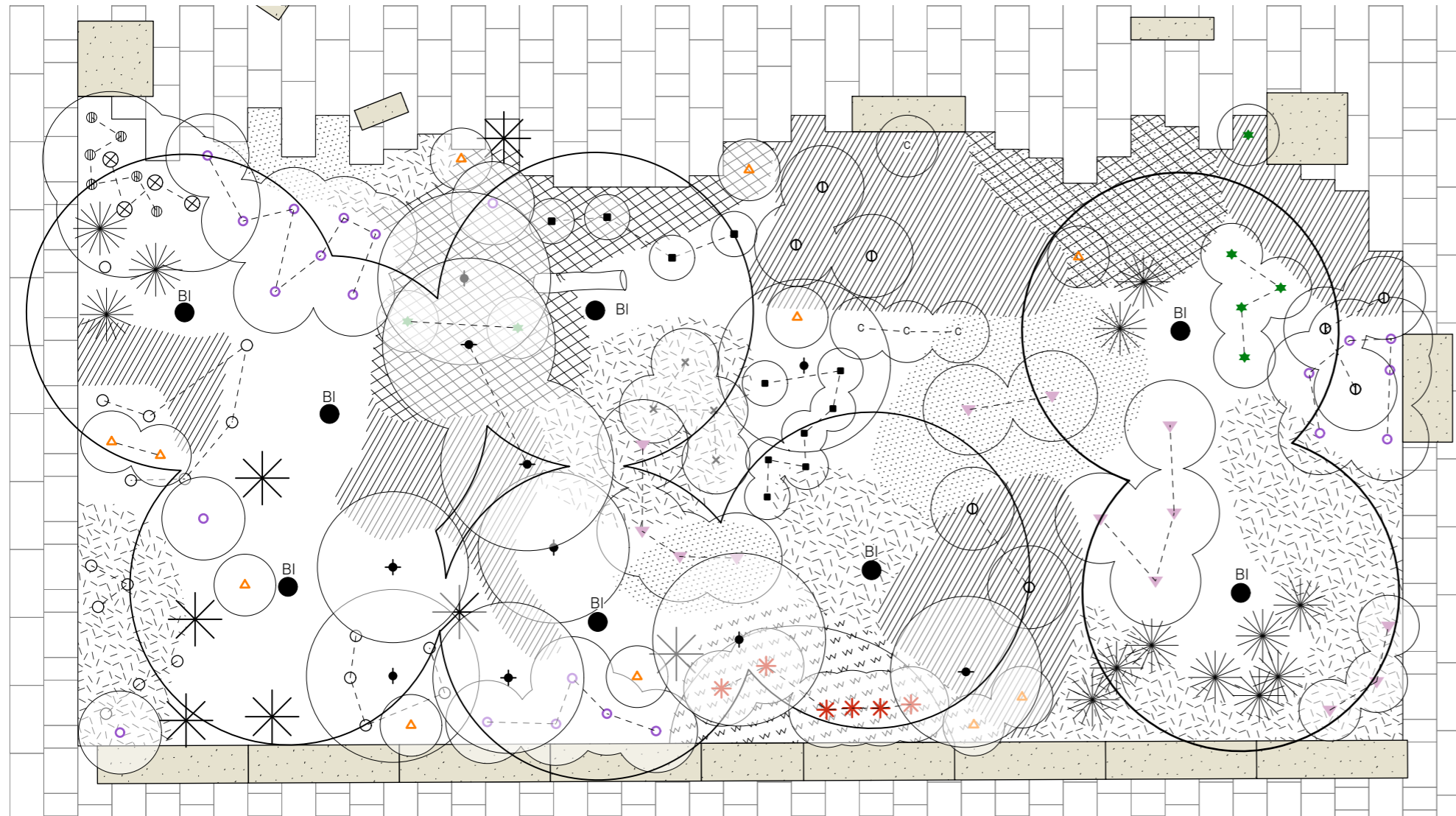
Rubbish removal

All rubbish should be removed from the garden and correctly.



Eastern Suburbs Banksia Scrub at Little Bay

As planted plan



Not to scale
NORTH



Typical section - not to scale

Legend

SYMBOL	BOTANICAL NAME	COMMON NAME
○	<i>Actinotus helianthi</i>	Flannel flower
● ^{BI}	<i>Banksia integrifolia</i>	Coast Banksia
⊕	<i>Banksia robur</i>	Swamp banksia
⊖	<i>Breytia oblongifolia</i>	Coffee Bush
⊕	<i>Bauera rubioides 'Candy Stripe'</i>	River Rose
×	<i>Correa reflexa</i>	Native Fuchsia
⊗	<i>Dianella spp.</i>	Blue Flax-Lily
△	<i>Rulingia hermannifolia</i>	Wrinkled Kerrawang
⋈	<i>Dichelachne crinata</i>	Long-hair plume grass
c	<i>Calytrix tetragona</i>	Fringe Myrtle
✳	<i>Themeda triandra</i>	Kangaroo Grass
■	<i>Gonocarpus teucrioides</i>	Forest Raspwort
⋈	<i>Hibbertia scandens</i>	Snake Vine
○	<i>Hardenbergia violacea</i>	Purple Coral Pea
▽	<i>Indigofera australis</i>	Australian indigo
✳	<i>Lomandra longifolia</i>	Basket Grass
◆	<i>Leptospermum flavescens</i>	Cardwell Tea Tree
◆	<i>Leptospermum laevigatum</i>	Coast Tea Tree
◆	<i>Leptospermum polygalifolium</i>	Laky-barked Tea Tree
★	<i>Grevillea olivacea</i>	Olive Grevillia
///	<i>Poa labillardieri</i>	Tussock-grass
⊕	<i>Viola hederacea</i>	Native Violet
⋈	<i>Xanthorrhoea resinifera/latifolia</i>	Wallum Grass Tree
✳		

Structure

Loose, complex and wild.

ESBS is characterised by "Schlerophyllous heath, scrub and low forest"¹ with a canopy layer of *Banksia integrifolia* and a dense understorey of clumped shrubs with clumps of grasses and ground covers on the ground layer.

The ground layer has logs, sticks and leaf litter that form an important habitat for insects and should be left in place

See image 1 on page 1.

PLANT DESCRIPTION

Form

Identifying feature

Bio

MAINTENANCE ACTIONS

Trees



Banksia integrifolia
Coast Banksia

Form: tree
Height: 4-15m

Fertilising

● Fertilise w/ low phosphorous fertiliser only - Equal to Neutrog Bush Tucker

Pruning

✗ No formative pruning
○ Trim dead branches only if absolutely necessary - leave branches in garden

Suitable substitutes

Banksia ameula, Banksia serrata



Banksia robur
Swamp Banksia

Form: small tree/shrub
Height: 1-2m

Description: big fat leaves, open habit

● Fertilise w/ low phosphorous fertiliser only - Equal to Neutrog Bush Tucker

✗ No formative pruning
○ Trim dead branches only if absolutely necessary - leave branches in garden

Banksia ericifolia, Banksia robur

Shrubs



Breynia oblongifolia
Coffee Bush

Form: shrub
Height: 2-3m
Description: similar to Indigofera but larger darker leaves, brown stems, denser habit.

● - Prune branches with red fruit
- check for self sown plants, remove if they begin to take over

Acacia longifolia, Acacia suaveolens, Indigofera australis, Allocasuarina distyla



Calytrix tetragona
Fringe Myrtle

Form: Shrub
Height: 1.5-2m

Description: lots of small spiny leaves, tight clumps of white flowers at the ends of branches

○ Check density, regular light tip pruning to maintain dense 1.5m habit

Lambertia formosa, Eriostemon australasius, Melaleuca squamea, Leucopogon ericoides



Correa reflexa
Native Fuchsia

Form: Shrub
Height: 0.5-1.2m

Description: small smooth shiny leaves with recurved margin (edges are turned down), bumpy stems



Indigofera australis
Australian Indigo

Form: Shrub
Height: 1.5-2m

Description: similar to Breynia but smaller, more feathery leaves, sparse habit, droopy branches



Leptospermum flavescens 'Cardwell'
Leptospermum Cardwell

Form: Shrub
Height: 2-3m

Description: small linear (spiky) leaves, droopy habit, LOTS of flowers!



Leptospermum laevigatum
Coast Tea Tree

Form: Shrub
Height: 1.5-6m

Description: larger flatter leaves compared to Cardwell, perkier branches, can turn into larger tree

Fertilising

- Fertilise w/ low phosphorous fertiliser only - Equal to Neutrog Bush Tucker

Pruning

- Light tip prune during first 3 months, allow to grow to 1m then prune back to old wood after flowering
- This is a pioneer plant and may die back over time. Replace with same if gaps are created by dead plants.
- Tip prune after flowering to keep to max 1.5m but do not hard prune back to old wood.
- Tip prune periodically during first 2 years.
- Allow to grow to 1.5m then under prune every spring to allow space under for grasses/ground covers

Suitable substitutes

Epacris longiflora, Eriostemon australasius, Dillwynia retorta

Epacris longiflora, Eriostemon australasius, Dillwynia retorta

Leptospermum trinervium, Leptospermum laevigatum, Leptospermum polygalifolium

Leptospermum trinervium, Leptospermum flavescens, Leptospermum polygalifolium



Leptospermum polygalifolium
Flaky-barked Tea Tree

Form: Shrub
Height: 4m

Description: very similar to L. Cardwell but has flakier bark, flowers profusely normally on the ends of branches rather than all along them.



Grevillea olivacea
Olive grevillea

Form: Shrub
Height: 2-4m

Description: discolourous leaves (dark top/light green bottom) look like olive leaves



Kunzea ambigua
Tick Bush

Form: Shrub
Height: 2-3m

Description: similar form to *Leptospermum* spp. but much longer stamens on flowers (fluffier flowers)

Grasses

flowers

fruit



Lomandra longifolia
Basket Grass

Form: Grass
Height: 1m

Description: long strappy leaves, no midrib

Tip prune after flowering to keep to max 2m but do **not** hard prune branches running laterally or prune back to old wood.

Leptospermum laevigatum,
Leptospermum flavescens,
Leptospermum trinervium

Fertilise w/ low phosphorous fertiliser only - Equal to Neutrog Bush Tucker

Prune back to roughly 1.5m x 1.5m loose dome after flowering to encourage dense form

Fertilise at time of pruning w/ low phosphorous fertiliser only - Equal to Neutrog Bush Tucker

Prune back to roughly 1.5m x 1.5m loose dome after flowering to encourage dense form

After fruit has formed prune back seed stalks to centre of growth.

do not prune when in flower
do not prune leaves

Poa labillardieri, *Eragrostis brownii*



Dianella spp.
Blue Flax Lilly

Form: Grass
Height: 0.6m

Description: strappy leaves with prominent midrib - darker, wider, strappier leaves than other grasses in garden



Dichelachne crinita
Long-hair plume grass

Form: Grass
Height: 0.8m

Description: tall fluffy, white seed heads, thin pendulous leaves



Themeda triandra
Kangaroo Grass

Form: Grass
Height: 1.2m

Description: tall, prominent red/brown seed heads that sit above clump of red/green pendulous leaves at base



Poa labillardieri
Tussock Grass

Form: Grass
Height: 0.7m

Description: tussock grass, with blue/grey very thin almost cylindrical leaves, soft flowers



Xanthorrhoea resinifera/latifolia
Grass tree

Form: Grass
Height: 0.8m

Description: Sharply ribbed bright green leaves

● Harvest fruits at end of Autumn when they have turned dark blue/purple - scatter seeds throughout garden to encourage self seeding

● Cut back seed heads in late summer, scatter seeds heads throughout garden to encourage self sowing

● Cut back seed heads in winter (July/Aug) after flowering, scatter seeds heads throughout garden to encourage self sowing

● Remove dead flower stalks in late winter and leave on ground

○ Monitor for density- if there is too much competition between individual plants thin by removing plant within group

○ Cut back every 2 years to 100mm above ground Remove dead leaves from base as plant grows

✗ Do not prune into middle/base of plant

Dianella spp.

Eragrostis brownii

Eragrostis brownii

Eragrostis brownii

Xanthorrhoea glauca or johnsonii



Gonocarpus teucrioides
Forest Raspwort

Form: Forb
Height: 0.5m

Description: light green leaves, stem same colour, rough texture to leaves and stems, small reddish flowers.



Actinotus helianthi
Flannel Flower

Form: Grass
Height: 0.8m

Description: white flowers with soft, floppy, fluffy white bracts (petals). Equally soft, fluffy foliage



Rulingia hermannifolia
Wrinkled Kerrawang

Form: Ground cover
Height: 0.7m

Description: glossy, dark green leaves with wrinkled edges, brown stem



Hibbertia scandens
Snake Vine

Form: Ground cover
Height: 0.4m

Description: twining climber (has little tendrils that go looking for something to hold onto), thick dark green leaves

● Fertilise w/ low phosphorous fertiliser only - Equal to Neutrog Bush Tucker

○ Monitor for density, tip prune if necessary.

● After flowering (early Sept) prune adjacent plants to create open ground plane, place spent/pollinated flower heads on exposed mulch, replant at this time if plant numbers have diminished

✗ Do nothing, allow to ramble, white flowers in October

○ Manage spread by periodically removing plant material to encourage even diversity of ground cover species.

Woollisia pungens, Rulingia hermannifolia

Actinotus minor, Woollisia pungens



Viola hederacea
Native Violet

Form: Ground cover
Height: 0.4m

Description: light green leaves slightly reniform leaves (shaped like a kidney)



Hardenbergia violacea
Purple Coral Pea

Form: Ground cover
Height: 0.4m

Description: long slender leaves, prominent mid vein, bright purple pea flower

○ Manage spread by periodically removing plant material to encourage even diversity of ground cover species.

○ Trim back to prevent growing over other species, allow to grow over edges on high side, trim back to avoid sprawling over footpath.

Eastern Suburbs Banksia Scrub

The following is a full species list of plants of the Eastern Suburbs Banksia Scrub as a reference

Trees

Banksia aemula
Banksia integrifolia
Banksia serrata
Melaleuca nodosa
Eucalyptus gummifera
Leptospermum laevigatum
Leptospermum trinervium

Shrubs

Acacia longifolia
Acacia suaveolens
Acacia terminalis
Acacia ulicifolia
Banksia ericifolia
Allocasuarina distyla
Boronia parvifolia
Darwinia fascicularis
Darwinia leptantha
Dillwynia retorta
Epacris longiflora
Epacris microphylla
Epacris obtusifolia
Kunzea ambigua
Lambertia formosa
Philothea salsolifolia
Pimelea linifolia
Leucopogon ericoides
Eriostemon australasius

Billardiera scandens
Baeckaea imbricata
Bossiaea heterophylla
Bossiaea scolopendria
Brachyloma daphnoides
Conospermum taxifolium

Hakea teretifolia
Hibbertia fasciculata
Melaleuca squamea
Monotoca elliptica
Monotoca scoparia
Persoonia lanceolata
Ricinocarpos pinifolius
Styphelia viridis

Grasses

Dianella revoluta
Dichelachne crinita
Eragrostis brownii
Xanthorrhoea resinifera
Xanthosia pilosa
Lomandra longifolia
Caustis pentandra
Cyathochaeta diandra
Lepidosperma laterale
Leptocarpus tenax
Lepyrodia scariosa
Restio fastigiata

Ground covers

Bauera rubioides
Astroloma pinifolium
Hardenbergia violacea
Hypolaena fastigiata

Wildflowers/forbs/herbs

Gonocarpus teucrioides
Actinotus helianthii
Actinotus minor
Haemodorum planifolium
Pomax umbellata
Pteridium esculentum
Woolfsia pungens

Good examples of Eastern Suburbs Banksia Scrub include:

Planting outside Centennial Park - York Rd opp Moriah College

Botany Bay NP

Malabar Headland NP

Aspirations

The following is a list of potential initiatives that could be taken up as an extension of the ongoing maintenance of the garden

Seed collection

Collecting of seed could be done to propagate and grown on plants for future planting installations or community events

Insect monitoring

Monitoring of insects could be done to ascertain ecosystem health, this could be done using traps that are checked for species composition and population density

Native bee hives

Soil micro-fauna monitoring

Soil testing could be done to determine micro-fauna species make up and presence of mycorrhizal fungi present in the soil

Maintenance diary

Observations of how different species are responding to the site and the different maintenance actions could be done to see where improvements could be made.

References

- 1 Benson, D.H and Howell, J *Taken for Granted: The bushland of Sydney and its suburbs*, Kangaroo Press, Sydney, 1990