

HFNC Report on Kanawalla Rail Flora Reserve works 2020

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Background

2004: HFNC applied to VicTrack in 2004 to manage the Kanawalla section of the disused Hamilton-Cavendish rail reserve. Despite a history of grazing after the line closed in the late 1970s this reserve contained valuable remnants of the Basaltic Plains Grassy Woodlands, of which less than 0.2% remains in the public domain.

Control of weeds has been on-going in most years since 2004. One aim of the weed control measures is to greatly reduce the *Phalaris* and Cocksfoot in the fertile degraded area near the Hensley Pk Rd area, before planting Drooping Sheoak and Silver Banksia on those infested areas. The sheoaks are capable of suppressing weeds once the ground is clear. Other aims are to remove all weed spots from the native grassland areas. The weeds include Briar Rose, *Phalaris*, *Dactylis glomeratum*, *Sparaxis bulbifera*, *Oxalis purpurea*, *Oxalis pes-caprae*, *Gladiolus* sp., *Fumaria*, *Galium*, *Disa bracteata*, *Rosa rubiginosa*, *Hypericum perforatum* and thistles. Wild *Gladiolus*, Cleavers, *Fumaria*, African Weed Orchid (AWO), St John's Wort and Canola are recent arrivals and it is vital that these (and other 'new' weeds) are closely monitored and controlled in future years.

2004-08: HFNC worked with various funding bodies to remove 200 pines (100 of which were from 30-150 cm diam.) and 41 large cypress from the reserve – and then to re-establish local flora.

2006: 336 trees were planted: 42 *Allocasuarina verticillata* (Old Reservoir), 100 *Allocasuarina verticillata* (Rail Res South of Kanawalla), 74 *Bursaria spinosa* (Lake Linlithgow), 50 *Banksia marginata* (Yatchaw Rail Res), 22 *Banksia marginata* (Hawkesdale Rail Res), 48 *E. ovata* (Hamilton), 47 *E. viminalis* (Hamilton). Also, 50 *Poa sieberiana* tussocks were planted on N & S blocks.

2007: 448 shrubs and trees were planted on degraded parts of the reserve. The plants were 165 *Allocasuarina verticillata* (Rail Res South of Kanawalla), 177 *Banksia marginata* (Yatchaw Rail Res), 50 *Acacia melanoxylon* (Hamilton), 48 *E. ovata* (Hamilton), 8 *Bursaria spinosa* (Lake Linlithgow)

2008: 20 *Ozothamnus ferrugineus* (Lake Bulrush) were planted.

Some of those Silver Banksia, Sweet Bursaria, Tree Everlasting, Drooping Sheoak, Manna Gum, Swamp Gum and Blackwood planted in 2006-8 have blown over in storms, or failed due to unfavourable site conditions, but the main loss has been from Black Wallabies that browsed many of the trees that only had plastic guards for protection. The surviving browsed trees have recently been fitted with wire mesh guards and are responding.

2018: 166 trees were planted, comprising 60 Drooping Sheoak (Old Reservoir), 65 Silver Banksia (Yatchaw) and 41 Silver Banksia (Pierrepoint Rail Reserve). Losses were 10%.

2019: HFNC applied for funds through the Southern Grampians Shire Council's (SGSC) Greater Grants Program 2019/20 and was granted \$2,057 to buy hardwood stakes and wire mesh to make guards for the seedlings to be planted in 2019. In total, 309 trees were planted, including 17 replacements for losses in 2018, and only 15 subsequently died (a 5% loss). The trees planted were 22 *Bursaria spinosa* (Hensley Pk Rd), 43 *Bursaria spinosa* (Lake Linlithgow), 61 *Allocasuarina verticillata* (Tarrington), 56 *Allocasuarina verticillata* (Old Reservoir), 63 *Banksia marginata* (Pierrepoint Rail Res), 45 *Banksia marginata* (Yatchaw Rail Res).

Care will be taken to maintain the integrity of the open native grassland areas and that will include culling *A. mearnsii* seedlings that invade such areas and avoiding planting those areas. There are a few places left where Drooping Sheoak, Silver Banksia and Manna Gum can be planted (sheoaks are mainly used at the edges and fertile places where exotic grasses are often a problem).

27 Nov 2019 – for proposed 2020 planting, some cones were collected from the only original *Al. verticillata* surviving just Nth of the junction. Capsules were also collected from the only 2 surviving original *E. viminalis* – one very large healthy specimen about 250 m Sth of the junction on the E side, and a large very old tree about 200 m Sth of the power line on the W side. Only a few capsules could be collected from that tree [1 hr].

03 Dec 2019 – the collected Sheoak cones and Manna Gum capsules were dried and seed collected and sown in a 50% coarse sand/50% pine bark potting mix in 'Forestry Tubes'. Manna Gum will be preferred as replacements. Seeds collected previously of *B. marginata* from Yatchaw, Pierrepont and Old Reservoir, and seeds of *Al. verticillata* from the Old Reservoir, were also sown [5 hr]

Site works in 2020

Past experience of depredations of resident Black Wallabies and the current presence of up to 50 Eastern Grey Kangaroos in the adjacent Blue Gum plantation has obliged us to fit all of the newly planted trees with wire mesh guards over the plastic guards. Other sources were used in 2020 to procure Cyclone mesh to construct guards.

In all, at least 255 hours of voluntary labour has been devoted to work on the reserve in 2020. The work has included site preparation (spraying and then crow-barring planting spots), planting and fitting plastic guards over 268 seedlings (incl. 15 replacements from 2019 planting), hand-weeding around the plants, spraying grass around the plastic guards and also patches of exotic weeds throughout the reserve, and construction and fitting of Cyclone mesh guards over trees planted in 2020. To secure the guards, we used 68 hardwood stakes not employed in 2019 and we cut 165 large stakes from invasive *A. paradoxa* shrubs at the Wannan that were removed in another conservation project, and 35 stakes from invasive *A. mearnsii* at Kanawalla.

Site preparation, planting, guarding and weeding in 2020

13 Jan 2020 – PH & RB [4 hr] fitted 32 single cylinders of 8-90-15 cm cyclone over Bunnings guards around Old Cypress area. Heat wave in December is stressing the Banksias.

14 Jan 2020 – RB [3.5 hr] watered Banksias at power line, at mid-junction and some at HP gate area and E of the Tk. About 385 L given @ 4.5 L/tree. A few of 2018 planting also watered. At least 5 trees dead S of gate.

15 Jan 2020 – RB [2 hr] applied 185 L water mostly to Banksias along Tk and W of 2006 planting near HP gate

16 Jan 2020 – RB [3.5 hr] applied 205 L water to plants S of old Cypress area (4L/plant). Also, removed weeds from many guards

17 Jan 2020 – RB [4 hr] applied 205 L water to trees at the Jn (a few deaths there) and at NE corner

08 Feb 2020 – RB [3 hr] nursery work, pricking out seedlings of Sheoak (70 for Old Res & 65 Kanawalla source) & Manna Gum (70 from tree N of power line & 12 from tree S). Banksias yet too small

04 Mar 2020 – RB [1 hr] weeded trees S from HP gate and near old Cypress area.

05 Mar 2020 – RB [4 hr] applied 220 L of water to Banksia and a few stressed Sheoak in the N area of reserve.

06 Mar 2020 – PH & RB [8 hr] applied 370 L water to trees at power line and at Jn and W fence.

10 Mar 2020 – RB [3.5 hr] applied 220 L water to Banksia and some Bursaria S of HP gate, E of Tk and near old Cypress area and E fence.

25 Mar 2020 – RB [4 hr] pricked out 195 Pierrepont Banksia & 100 Yatchaw Banksia

06 May 2020 – RB [1.5 hr] spot-spraying [10 L spray] weeds at S end to power line as well as 5 planting area (each with 7-8 spots) on W fence. Noted a few seedlings from Sheoak regeneration near the Tk.

07 May 2020 – RB [3 hr] sprayed weeds on S block, at the Jn and on W side to HP gate, and emerging *Fumaria* on the embankment (a few dozen plants). Also sprayed [10 L] planting spots (< 1 m diam) at 3 sites on W fence, Station Block and 1 place on E fence, opposite the pool.

12 May 2020 – RB [3 hr] sprayed [8 L] planting spots on W fence Station Block and some Phalaris & Cocksfoot, plus a patch of *O. purpurea* on mid-W fence and around 2018/19 trees on Sth Block and some on Station Block.

14 May 2020 – RB [3.5 hr] sprayed [25 L] around 2018/19 trees on Station Block, plus planting spots on E & W fences and Phalaris, Cocksfoot and Briar.

15 May 2020 – RB [2.5 hr] finished spraying [10 L] around trees, plus more planting spots on W fence bend and Phalaris, Cocksfoot plants encountered.

26 May 2020 – RB [4.5 hr] crow-barred spots, planted, watered in (5 L) and guarded (plastic and cyclone mesh) 12 *E. viminalis* seedlings near HP gate and old Cypress area, replacing dead trees from 2019.

27 May 2020 – RB [3 hr] crow-barred holes, planted/guarded/watered in 5 *E. viminalis* in a patch among Black Wattle S from old Cypress area.

28 May 2020 – RB [3.5 hr] crow-barred holes/planted/guarded/watered 7 *E. viminalis* on E fence & 3 on W fence

29 May 2020 – RB [6 hr] sprayed [6 L] remaining spots for planting in 2020 and crow-barred holes, planted, guarded and watered 6 *E. viminalis* on W fence.

03 Jun 2020 – RB [5 hr] crow-barred holes/planted/guarded/watered 1 *E. viminalis* on E fence & 7 on W fence. Cut out a few small *A. mearnsii* on W fence that were invading the grassland.

04 Jun 2020 – RB [5.5 hr] crow-barred holes/planted/guarded/watered 3 *E. viminalis* on E fence near the pool and 6 on W fence from power line to McFarlanes Rd gate. Tidied up branches cut by neighbour from trees overhanging the W fence and loose barbed wire and plain wire from fence repair recently done

05 Jun 2020 – RB [4 hr] crow-barred holes/planted/guarded/watered 6 Drooping Sheoak on N fence (NW corner) and 3 (Old Res) to replace losses in 2019. In summary, of the 309 trees planted in 2019, only 15 died (5% loss).

11 Jun 2020 – RB [5 hr] spot-sprayed [6 L] *O. purpurea* at 8 areas (near cypress, S of embankment, E fence opposite pool, several spots on E fence to S of dam, on W fence near Jn & on E side of Tk there.

A small patch of *Sparaxis* behind the embankment and dozens of small *Fumaria* plants sprayed on the ramp. Crow-barred 10 holes on E fence area.

12 Jun 2020 – RB [2 hr] crow-barred 13 holes on E fence and cut a few *A. mearnsii* to keep grassland open.

Jun-July 2020 – RB sharpened 167 stakes & PH 28 stakes = 195 stakes [10 hr]. Time to cut the stakes was similar [10 hr]. The construction of 150 cyclone 8-90-15 type guards (single cylinder) was 7 min/guard. The 90 cyclone 8-90-30 guards (dual cylinders) took 15 mins to make (total time = 40 hrs). [In all, 60 hrs for guards & stakes].

17 Jun 2020 – RB carted stakes and cyclone guards for W side and crow-barred 15 spots on W side [3 hr]

19 Jun 2020 – [3 hr] RB carted stakes and cyclone guards to some sites and crow-barred 2 more spots on E fence. Cut another 12 *A. mearnsii* stakes from the site.

28 Jun 2020 – RB [3 hr] carted 10 cyclone guards to E side and crow-barred 10 spots there.

29 Jun 2020 – RB [3 hr] carted stakes and crow-barred last 8 spots on W side.

03 Jul 2020 – RB [1.5 hr] assembled materials for planting at the site.

04 Jul 2020 – RZ & RB [6 hr] crow-barred holes on W fence and sorted plants to go to various sites.

05 Jul 2020 – **Working Bee** [30 hr], RZ, YI, JS, PH, DL, PM, RH, RT, RB crow-barring holes, planting, guarding and watering 120 plants at 6 sites (H, I, J, O, P, Q), plus forming the cyclone guards

Note – in the table below, the 16 eucalypts were planted in late May.

Site	<i>E. viminalis</i>	Sheoak	Yatchaw Banksia	Pierrepoint Banksia	Old Res Banksia
H	3	10	7	7	-
I	3	8	-	12	-
J	3	6	12	-	-
O	2	6	-	13	-
P	3	6	-	-	15
Q	2	2	8	8	-

12 Jul 2020 – RB [3 hr] carted cyclone guards, drums of water and *A. paradoxa* stakes to Site G and crow-barred 6 holes missed at the working bee plus 5 of the spots where a crow-bar had not been used (holes mostly only 15-25 cm deep but required to be 35-45 cm deep to penetrate through the gravel into clay). Pulled a few dozen seedling *Fumaria* from embankment area.

13 Jul 2020 – RB [4 hr] carted cyclone guards and stakes to Site F. Crow-barred remainder of holes on Site G.

15 Jul 2020 – RB [2 hr] carted cyclone guards & stakes to Sites G & F and crow-barred 17 holes at Site F.

16 Jul 2020 – RB [3 hr] carted cyclone guards and stakes to Site F and completed crow-barring 11 holes at Site F. Took GPS readings of sites on Station Block.

17 Jul 2020 – RB [3 hr] carted cyclone guards & stakes to Site E and part of D. Replaced 2 plastic guards & bamboo stakes stolen from Forts Rd planting. Removed plastic guards and most bamboos from tall Sheoaks of 2018 planting in the NW area. Took GPS readings of all planting sites on the South Block

22 Jul 2020 – RB [3 hr] carted cyclone guards and crow-barred 9 holes at Site E

23 Jul 2020 – RB [3 hr] carted the last of the manufactured 7 cyclone guards to Site D and crow-barred 8 holes there. Recycled 14 shorter guards from earlier planting to Sites A and B

24 Jul 2020 – RB [4 hr] constructed 4 mesh guards from old 8-90-30 Cyclone and carted to Site B. Crow-barred all holes at Site C

26 Jul 2020 – RB [4 hr] crow-barred 11 holes at Site B and shifted dead branches from the site. Used scrap mesh to construct a further 4 guards, to complete the assembly of guards

29 Jul 2020 – RB [2 hr] crow-barred last 10 holes at Site A and distributed 4 mesh guards to complete that task

3-4 Aug 2020 – **Working Bee** [15 hr] with RB & PH planting, guarding & watering 92 plants at 7 sites (A, B, C, D, E, F & G). The planting was brought forward from the scheduled Sun 16 Aug. due to impending new restrictions due to Covid-19. The planting holes had been crow-barred and mesh guards prepared prior to this day.

The seedlings planted at this working bee are presented below:

Site	<i>E. viminalis</i>	Sheoak	Yatchaw Banksia	Pierrepoint Banksia
A	2	2	-	8
B	1	-	-	11
C	1	2	4	-
D	1	-	8	-
E	1	-	-	9
F	3	8	-	20
G	3	8	6	8

20 Aug – RB [1.5 hr] replaced 2 sheoaks from 2019. Removed a few Black Wattle on grassland at Jn.

30 Aug – RB [2 hr] sprayed 9 L on phalaris clumps & *O. purpurea* from McFarlanes Lane to just past junction. Also *Galium* sp. (Cleavers) on E side of track about 200 m from gate. New species found: *Galium gaudichaudiana*.

31 Aug – RB [3 hr], 10.5 L herbicide sprayed on phalaris and other weed at Nth end of reserve. Cleavers found near NE area and near 5 Manna Gum planted in 2020. *Sparaxis* and *O. purpurea* found again E of embankment.

10 Oct – RB [4 hr], weeding trees S from Hensley Pk Rd gate.

25 Oct – RT [1.3 hr], wiped 120 AWO along W fence at Nth end.

26 Oct – RB & DL [6 hr] weeding, wiped 150 AWO, cleared *Fumaria* & *Galium* from embankment.

27 Oct – RB [4 hr], weeding and spraying the track (28 L)

15 Nov – RT [1.3 hr], dug 55 AWO along W fence

24 Nov – RB [5 hr] weeding trees, pulling a new infestation of St John's Wort on Forts Rd & HPk Rd, 72 AWO and a few *Fumaria* from the embankment, Canola from Sth of HP gate and a Melaleuca near the pool. Wallabies have been trimming eucalypts in some guards, so an additional ring of cyclone mesh will need to be added to prevent that. The side fence in the NE corner also needs to be repaired. A splendid Copperhead snake was seen.

The final planting tallies at the various sites for various species/sources in 2020:

Site	<i>E. viminalis</i>	Sheoak	Yatchaw Banksia	Pierrepoint Banksia	Old Res Banksia	
A	2	2	-	8	-	
B	1	-	-	11	-	
C	1	2	4	-	-	
D	1	-	8	-	-	
E	1	-	-	9	-	
F	3	8	-	20	-	
G	3	8	6	8	-	
H	3	10	7	7	-	
I	3	8	-	12	-	
J	3	6	12	-	-	
K*	4	3-	-	-	-	
L		6	-	-	-	
M*	8	-	-	-	-	
N	6	-	-	-	-	
O	2	6	-	13	-	
P	3	6	-	-	15	
Q	2	2	8	8	-	
R	1	-	-	-	-	
Total	47	65	45	96	15	∑ 268

* replacements for plants lost from 2019 planting.

Summary of species and numbers of trees, shrubs and grasses planted at Kanawalla from 2006-20

Species	Source	2006	2007	2008	2018	2019	2020	Total
<i>Acacia melanoxylon</i>	Hamilton	-	50	-	-	-	-	50
<i>Allocasuarina verticillata</i>	Old Reservoir	42	-	-	60	56	35	193
<i>Allocasuarina verticillata</i>	N Ham Rail Res	100	165	-	-	-	-	265
<i>Allocasuarina verticillata</i>	Tarrington	-	-	-	-	61	-	61
<i>Allocasuarina verticillata</i>	Kanawalla Rail	-	-	-	-	-	30	30
<i>Banksia marginata</i>	Yatchaw Rail	50	177	-	65	45	45	391
<i>Banksia marginata</i>	Hawkesdale Rail	22	-	-	-	-	-	22
<i>Banksia marginata</i>	Pierrepoint Rail	-	-	-	41	63	96	191
<i>Banksia marginata</i>	Old Reservoir	-	-	-	-	-	15	15
<i>Bursaria spinosa</i>	Lake Linlithgow	74	8	-	-	43	-	125
<i>Bursaria spinosa</i>	Hensley Pk Rd	-	-	-	-	22	-	22
<i>Eucalyptus ovata</i>	Hamilton	48	48	-	-	-	-	96
<i>Eucalyptus viminalis</i>	Hamilton	47	-	-	-	-	-	47
<i>Eucalyptus viminalis</i>	Kanawalla Rail	-	-	-	-	-	47	47
<i>Ozothamnus ferrugineus</i>	Lake Bulrush	-	-	20	-	-	-	20
<i>Poa sieberiana</i>		50	-	-	-	-	-	50
Totals		433	448	20	166	290	268	1625

Bird list – the list so far is 67 species (Australian Wood Duck, New Holland Honeyeater, White-winged Chough, Pied Currawong & Painted Button-quail were added this year).

Flora List – with 1 new addition, the native plant list stands at 87 species.

Tree-planting sites in 2020

