

# BioBlitz 2015: Pourewa Reserve and Kepa Bush, Auckland, 27-28 Mar 2015 – general introduction and vascular plants

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## Introduction

The BioBlitz event held at Orakei ran from Friday 27 March, 10am – 11pm, to Saturday 28 March 2015, 7am – 4pm, on Ngāti Whātua pasture land (Pourewa Reserve) and the adjacent Auckland Council native forest land (Kepa Bush Reserve). The areas are contiguous and lie between Kepa Road and the Pourewa Creek (see Figs. 1 & 2). The event began with Ngāti Whātua Ōrākei giving us a very warm welcome onto their land with a pōwhiri (Fig. 3). During the 22 hours, 1500-2000 members of the public visited the marquee where the BioBlitz teams were identifying and displaying numerous local biota (Fig. 4). Many visitors also participated in the various biologically-focused walks during the event (Fig. 5). The principal organizers of this event were the Auckland Museum, supported by Ngāti Whātua o Orakei, the Auckland Council and Landcare Research. Auckland Botanical Society, Forest and Bird Society, Ornithological Society, University of Auckland, Unitech, WaiCare, and Friends of Kepa Bush all participated.

Plant groups that were surveyed during the event: vascular plants coordinated by Ewen Cameron; mosses by Jessica Beever and Allan Fife (Beever & Fife 2015); liverworts by John Braggins (Braggins 2015); seaweeds by Mike Wilcox (Wilcox 2015) and lichens by Dan Blanchon (to appear in a later issue of this journal). To allow for documenting change over time, Auckland Council erected 12 of 30 proposed permanent 6 m rad. circular vegetation plots (113 m<sup>2</sup>

each) in both forest and pasture, recording cover abundance in standard tiers and cover classes (Craig Bishop pers. comm.).

## Recorded botanical history of the area

Kepa Bush (13.6 ha) was established when Auckland City Council (now included within the greater Auckland Council) bought the land in 1962 from St John's Theological College (Cameron et al. 2008). Lucy Cranwell (1981, p.20) mentions an abundance of kowhai (*Sophora chathamica*), with other common species being: cabbage trees (*Cordyline australis*), karaka (*Corynocarpus laevigatus*), kohekohe (*Dysoxylum spectabile*), karamu (*Coprosma macrocarpa* and *C. robusta*), karo (*Pittosporum crassifolium*), kawakawa (*Piper excelsum*), mapou (*Myrsine australis*), mingimingi (*Leucopogon fasciculatus*), hangehange (*Geniostoma ligustrifolium*); frequent ponga (*Cyathea dealbata*) and mamaku (*C. medullaris*) near the stream bed; glades carpeted with *Oplismenus hirtellus*; tall old kanuka (*Kunzea robusta*); climbers of *Parsonsia heterophylla*, *Rubus cissoides* and *Clematis paniculata*; and conifers lacking. Rhys Gardner (1981) published a vascular plant list for the northern slopes of Pourewa Creek totaling 106 native vascular species of the coastal forest and estuarine communities. He later wrote an article focusing on the history of Pourewa and its cemetery on the south side of Pourewa Creek (Gardner 1987) and also a trip report of a visit by the Auckland Botanical Society to the Kepa Bush Reserve (Gardner 2009).



**Fig. 1.** Location map of the area surveyed during BioBlitz 2015: Kepa Bush and Pourewa Reserves (adapted by Joshua Salter). **Key:** 1 = Kepa Rd; 2 = location of BioBlitz marquee; 3 = entrance to Kepa Bush from Colenso Pl; 4 = entrance to Kepa Bush from Thatcher St; 5 = Kempthorne Cres; 6 = tree privet forest.





**Fig. 2.** Kepa Bush (dark canopy at left) and Pourewa Creek, viewed from Pourewa Reserve. Note yellow-green privet canopy (at right) along south side of the mangrove-lined creek. Photo: Josh Salter, 20 Mar 2015.

Some 100 vascular plant species have been previously collected from the north side of Pourewa Creek by at least seven botanists going back to Thomas Cheeseman in 1870 (Table 1). These herbarium collections have added 17 native and 10 exotic historical species to the present species list. Most of these were recorded prior to 1950 (see Table 1, and Appendix). The type locality for one of these records, *Corybas cheesemanii*, was “in a dense bush” dominated by mapou, *Brachyglottis repanda* and manuka (*Leptospermum scoparium*) at Purewa (St George 2015). Judging from Bishop Selwyn’s 1845 painting reproduced by St George (2015), it was possibly from the bush by St John’s College.

### Kepa Bush Reserve

Kepa Bush is dominated by a central ridge running north-south down to the estuary with gullies on either side supporting running creeks when it rains. The forest canopy is virtually entirely native, and is variable, with magnificent tall kanuka and locally a

few manuka (*Leptospermum scoparium*) on the higher slopes, and groves of broad-leaved trees in the gullies and under the broken canopy of the taller kanuka. Kohekohe is the dominant canopy species with mahoe, karaka, whauwhaupaku (*Pseudopanax arboreus*), ponga and locally putaputaweta (*Carpodetus serratus*) in the gully bottoms. Ponga is common throughout and houhere (*Hoheria populnea*) is locally present on the higher slopes. Surprisingly, puriri (*Vitex lucens*), taraire (*Beilschmiedia tarairi*), titoki (*Alectryon excelsus*) and nikau (*Rhopalostylis sapida*) are uncommon, and mainly represented by a few seedlings with single adult trees of taraire and titoki. Large spreading trees of pohutukawa (*Metrosideros excelsa*) are locally present on the main ridge (Fig. 6) and by the estuarine edge; several of the younger plants epiphytic on ponga trunks appeared to be hybrids of pohutukawa and northern rata. Four trees of rewarewa were emergent above the canopy and a few seedlings were seen along the track margins. Totara (*Podocarpus totara*) was occasional, mainly as seedlings and saplings; however, a tall adult tree was present near the SE corner. Very few old trees of kowhai have survived since Cranwell (1981) reported their flowering as a feature of the area, and more recently Gardner (2009) remarked on their poor condition. In the forest there are individual fine specimen trees of: kanuka (to 18m tall), kohekohe (a sign-posted tree with a short c.1 m diam. trunk reached c.12 m tall with a spreading canopy), taraire, pigeonwood (*Hedycarya arborea*), putaputaweta, and below Thatcher Street a giant whauwhaupaku and two large tutu (*Coriaria arborea*), both species hanging out over the tidal creek.

In the eastern gully floor, near the entrance from Thatcher Street, the forest is more humid – evident from the presence of pate (*Schefflera digitata*),



**Fig. 3.** Ngāti Whātua at the marquee entrance, about to welcome us on to their land. Photo: by unknown Museum staff, 27 Mar 2015.

**Table 1:** Previous main herbarium collections from the Kepa Bush and Pourewa Creek (when known, records from south of the creek are excluded) held in the Auckland Museum (AK) and Te Papa (WELT). Old spelling ('Purewa') retained as it was originally spelt on the labels.

Collector	Location	Date collected	No. of species collected	Herbarium
T.F. Cheeseman	Purewa /Purewa Creek	1867-1907	20	AK, WELT
D. Petrie	Purewa	1874-1919	5	WELT
H.E. Powell	Purewa Bush	1945-49	21	AK
F.I. Dromgoole	Purewa Creek/Bush	1959	17	AK
R.O. Gardner	Purewa Creek/Gully/Bush	1974-2009	18	AK
A.E. Wright	Kepa Road Bush Reserve	1979	12	AK
R.P. Scofield	Kepa Road Bush Reserve	1980	18	AK



**Fig. 4.** The lichen table inside the marquee with Christy Reynolds and Dan Blanchon. Photo: by unknown Museum staff, 27 Mar 2015.



**Fig. 5.** A popular 'creepy crawly' walk led by Ruud Kleinpaste in Kepa Bush. Photo: by unknown Museum staff, 27 Mar 2015.



**Fig. 6.** Finest pohutukawa trees in Kepa Bush up on the main ridge. Photo: Rhys Gardner, 28 May 2015. Note – green lines on bag are 20 cm apart.

wheki (*Dicksonia squarrosa*), abundant ground ferns and single populations of two species of filmy ferns (*Hymenophyllum flabellatum* (Fig. 7) and *Polyphlebium venosum*) on separate ponga trunks. (Note – St John's Bush, c. 1 km to the SE, also contained these two filmy ferns plus *Hymenophyllum rarum* and the wetland tree, pukatea (*Laurelia novae-zelandiae*) (Cameron 2000)). Where this eastern Kepa Bush creek enters the tidal Pourewa Creek there is an ecotone of bolboschoenus (*Bolboschoenus medianus*) sward > 30 m long by 8 m across (Fig. 8); on the fringe of this sward was a single old coastal daisy tree (*Olearia solandri*) (Fig. 9), saltmarsh ribbonwood (*Plagianthus divaricatus*), patches of oioi (*Apodasmia similis*), occasional small trees of mapou, and a single plant of sea rush (*Juncus kraussii*). Mangroves (*Avicennia marina*) to 3 m tall fringe the open front edge of the bolboschoenus, and behind it in the freshwater a small sward of *Carex geminata* occurs with *C. virgata*.

The forest understorey shrub layer looks unnaturally open in places on the upper forested slopes, which may be caused by people walking off the tracks; alternatively, the bush may still be recovering from grazing cattle and horses over many decades (Cranwell 1981, Gardner 2009) and possibly from the soil compaction that the larger animals caused.

Apart from around the entrances to Kepa Bush from Colenso Place and Kepa Road, very little appears to have been planted in the reserve. At these entrances there are plantings of ngaio (*Myoporum laetum*), manuka, kanuka, cabbage trees, karo, *Hebe stricta*, *Pittosporum tenuifolium* cultivars, totara, puriri (×1), tarata (*Pittosporum eugenoides*) (×1), a tawapou (*Planchonella costata*), *Griselinia lucida* (×1), *Meryta sinclairii* (×2) and several flax (*Phormium tenax*). By the upper track behind the supermarket there are several similar-sized trees (6-7 m tall) of *Pittosporum tenuifolium*, tarata and karo that appear to have been planted.





**Fig. 7.** *Hymenophyllum flabellatum* on a punga trunk in the moist valley bottom. One of the two filmy fern additions to Kepa Bush. Young *Parsonsia* vine on RHS. Photo: Ewen Cameron, 26 Apr 2015.



**Fig. 8.** Ecotone: from mangrove, to bolboschoenus browning off, to forest behind. Photo: Ewen Cameron, 26 Apr 2015.



**Fig. 9.** *Olearia solandri*, single plant seen 2 m tall × 3 m across, fruiting abundantly; amongst *Bolboschoenus medianus* sward browning off, by mangroves (to 3 m tall), *Plagianthus divaricatus* and oioi, near a stream confluence with the tidal Pourewa Creek. Photo: Ewen Cameron, 26 Apr 2015.

The single tree of silky oak (*Grevillea robusta*) c. 12 m tall and c. 32 cm dbh near the centre of the bush, I think must have naturally established when the bush was more open. Twenty-five plants of parataniwha (*Elatostema rugosa*) were planted along the stream banks in June 2013 by Te Ngahere (Mike White pers. comm.) and just after BioBlitz twenty-five plants of king fern (*Ptisana salicina*) were planted on 27 May 2015 by Te Ngahere (John La Roche pers. comm.).

Over 70 environmental weed species, and possums and rodents, have been managed in Kepa Bush since 2002 by volunteers and Te Ngahere under contract to Auckland Council. The result is that the reserve is remarkably free of weeds. Most pest plants that we saw were present only as seedlings. Hawthorn (*Crataegus monogyna*), tree privet (*Ligustrum lucidum*), Chinese privet (*L. sinense*) and a single tree of silky oak were the only woody exotic plants that were present as adults. The 15 most removed weeds by Te Ngahere from Kepa Bush in descending order of abundance were: Chinese privet, tree privet, Japanese honeysuckle (*Lonicera japonica*), woolly nightshade (*Solanum mauritianum*), monkey apple (*Syzygium smithii*), Japanese spindle tree (*Euonymus japonicus*), moth plant (*Araujia hortorum*), hawthorn, wandering Jew (*Tradescantia fluminensis*), blue morning glory (*Ipomoea indica*), climbing asparagus (*Asparagus scandens*), kahili ginger (*Hedychium gardnerianum*), brush wattle (*Paraserianthes lophantha*), jasmine (*Jasminum polyanthum*) and Jerusalem cherry (*Solanum pseudocapsicum*). The widespread and quite large Australian sedge (*Carex longebrachiata*) and the invasive veldt grass (*Ehrharta erecta*) present at the two upper entrances and also at the Lookout will also need to be specifically targeted.

### Pourewa Reserve

Pourewa Reserve is part of the mainly pastoral land leased by the St Heliers Bay Pony Club between Kepa Road and Pourewa Creek (35.6 ha) that has recently **been returned to the ownership of Ngāti Whātua Ōrākei, who aim to restore the mauri (life force) to this part of the land** (see Fig. 1). Simmonds (1980) pointed out that the correct spelling of the area and creek is Pourewa (not Purewa) meaning **"the elevated platform"** or **"an ancient lookout"** (Gardner 1987).

The area of Pourewa Reserve that we surveyed during BioBlitz was mainly rough pasture grazed by horses, with some shelter belts dominated by hawthorn and tree privet. The pasture was dominated by paspalum (*Paspalum dilatatum*), ryegrass (*Lolium perenne*), patches of kikuyu (*Cenchrus clandestinus*), and many other grasses including Yorkshire fog (*Holcus lanatus*), browntop (*Agrostis capillaris*), carpet grass (*Axonopus fissifolius*), Indian doab (*Cynodon dactylon*) and

crested dogstail (*Cynosurus cristata*). Non-grass species that were locally common (a sign that they are not very palatable to horses) included: stinking iris (*Iris foetidissima*) (Fig. 10), stinking mayweed (*Anthemis cotula*), parsley dropwort (*Oenanthe pimpinelloides*), wild carrot (*Daucus carota*), oxeye daisy (*Leucanthemum vulgare*), tarweed (*Parentucellia viscosa*), narrow- and broad-leaved plantains (*Plantago lanceolata*, *P. major*), small-leaved wireweed (*Polygonum arenastrum*), selfheal (*Prunella vulgaris*), creeping buttercup (*Ranunculus repens*), clustered dock (*Rumex conglomeratus*), white clover (*Trifolium repens*), Australian sedge, rushes (*Juncus* spp.), *Haloragis erecta*, scrambling speedwell (*Veronica persica*), and locally sweet brier (*Rosa rubiginosa*) and moth plant among the stinking iris.

The forest fringe along the bottom of the paddocks was c.15 m wide, c.7 m tall and the canopy was virtually pure tree privet with hawthorn. It merged with mangroves on its lower side and underneath sheltered a scattering of mainly native shrubs and ferns, including: mapou, kawakawa, hangehange, mahoe, kowhai, karaka, karo, ponga, *Adiantum hispidulum* and *Blechnum parrisiae*. Weeds included climbing asparagus, *Carex divulsa*, Australian sedge and, locally, smilax (*Asparagus asparagoides*). At the foot of the shaded slope, coastal species occurred: *Carex flagellifera*, *Isolepis cernua*, *Apium* "white denticles", and an old kowhai leant out from the bank over the continuous cover of mangroves.

### Vascular Flora

The total vascular flora for BioBlitz was 247 species (51% native) and when the historical records (see Appendix) are added the total is 338 species (52% native) – see Table 2. Comparing the Kepa Bush flora with Pourewa Reserve: 180 species (61% native) vs 124 species (only 32% native) – and only 67 species (45% native) occur in both reserves.



**Fig. 10.** Stinking iris, capsule open, some ripe fruit already taken by birds, Pourewa Reserve. Photo: Josh Salter, 20 Mar 2015.

These results are not surprising, considering that the comparison is between native bush and mainly exotic pasture.

The BioBlitz survey added 17 wild native species and three hybrids to the Kepa Bush species list of Gardner (1981) and to the previous herbarium collections (see Appendix). The additional species were: 5 ferns (*Asplenium polyodon*, *Hymenophyllum flabellatum*, *Polyphlebium venosum* and two *Tmesipteris* spp.); two conifers (kahikatea and rimu); and 10 flowering plants (titoki, *Callitriche muelleri*, *Coprosma grandifolia*, *Haloragis erecta*, *Hoheria populnea*, *Muehlenbeckia complexa* var. *grandifolia*,

**Table 2:** Vascular plant totals for BioBlitz 2015 in Kepa Bush and Pourewa Reserve, their combined totals and with historical records included. Note that these totals exclude the recent planting of king fern.

Vascular plant Groups	Kepa Bush 2015		Paddock 2015		Totals for BioBlitz (Kepa Bush & Paddock combined)		Totals including historical records	
	Native	Exotic	Native	Exotic	Native	Exotic	Native	Exotic
Club mosses	-	1	-	-	-	1	1	1
Ferns	32	1	13	-	33	1	39	2
Conifers	3	1	1	-	3	1	3	1
Dicots	52	53	17	59	58	86	68	113
Monocots	22	18	8	26	26	33	44	45
<b>Totals</b>	<b>109</b>	<b>72</b>	<b>39</b>	<b>85</b>	<b>125</b>	<b>122</b>	<b>176</b>	<b>162</b>
<b>% native</b>	<b>61</b>		<b>32</b>		<b>51</b>		<b>52</b>	





**Fig. 11.** A nationally threatened shrub, *Pimelea tomentosa*, once grew in the bush at Pourewa nearly 70 years ago (H.E. Powell, 28 Jan 1947, AK 44764).

**Table 3:** Regionally and Nationally threatened wild species recorded from Pourewa Creek area.

Species	Conservation status	Collection date	Herbarium Voucher
<b>Nationally Threatened <sup>1</sup></b>			
<i>Paspalum orbiculare</i>	At Risk - Declining	1894	WELT SP069259
<i>Pimelea tomentosa</i> (Fig. 11)	Nationally Vulnerable	1947	AK 44764
<b>Regionally Threatened <sup>2</sup></b>			
<i>Luzula picta</i> var. <i>picta</i>	Regionally Endangered	1891	AK 3086
<i>Myoporum laetum</i>	Regionally Chronically Threatened – Gradual Decline	1948, Gardner (1981)	AK 108219
<i>Ranunculus acaulis</i>	Regionally Endangered	1874	AK 4342
<i>Rytidosperma clavatum</i>	Data Deficient	1993	AK 215080
<i>Wahlenbergia vernicosa</i>	Regionally Sparse	1993	AK 215079
<sup>1</sup> (de Lange et al. 2013)		<sup>2</sup> (Stanley et al. 2005)	

*Solanum nodiflorum*, *Carex dissita*, *Juncus kraussii* and *J. usitatus*). The inclusion of the pasture area only added three native taxa: *Calystegia sepium* subsp. *roseata*, *Pseudognaphalium luteoalbum* and a *Pseudopanax* hybrid.

Twenty of Gardner's (1981) plant records were not seen during the present BioBlitz survey, making a total of 36 unconfirmed previous native plant records. Previous knowledge of naturalised plants of the area is based on herbarium specimens, Cranwell (1981), Gardner (2009) and the weed list of Te Ngahere, which contribute 37 species unconfirmed – bringing the combined total to 77 species unconfirmed (see Appendix).

The unconfirmed records can be explained as follows:

1. that we just missed them (our survey time was limited);
2. that the naturalised ones were weeded out by the weed teams;
3. that the location of many of the older historical records was just "Purewa" or "Purewa Creek" (see Table 1) and therefore may have occurred from further up, down, or from the south side of Pourewa Creek;
4. that the estuarine area has silted up over time (Gardner 1987) possibly causing local extinction of some species: e.g. *Cotula coronopifolia*, *Ranunculus acaulis*;
5. that the bush area is regenerating forest, and the open seral habitat preferred by some species has largely gone, causing their local extinction, e.g. *Dodonaea viscosa*, *Pimelea tomentosa* (Fig. 11), *Pomaderris amoema*; or
6. that for some of the herbaceous species, the competition with naturalised species may have caused their demise, e.g. *Luzula picta*, *Paspalum orbiculare*, *Rytidosperma clavatum*.

Seven Regionally and Nationally threatened vascular species have been recorded for the area (see Table 3). However, all of these are historical, recorded between 1891 and 1993. Note that the ngaio record during BioBlitz was from planted specimens.

### The changing flora

The composition and abundance of species is changing in Kepa Bush as it is recovering from past disturbances. As Gardner (1988: p.19) noted: "On the Auckland isthmus kauri and podocarps are virtually absent, the remnants being of puriri, kohekohe, karaka, rewarewa and taraire (Grafton Gully; Purewa Creek Orakei; Dingle Dell St Heliers)". Cranwell (1981) for Kepa Bush included the following species as common: kowhai, cabbage tree, karamu, karo, kawakawa and mingimingi, all of which now appear to have decreased in abundance. There are species that are now common that weren't mentioned by Cranwell (1981), e.g. houhere, mahoe, putaputaweta, whauwhaupaku; and conifers, mentioned as lacking by her, are now establishing, e.g. totara and kahikatea (see Appendix).

### Future

Apart from the Hillsborough-Blockhouse Bay coastal strip, the Kepa Bush and adjacent bush is the largest piece of native bush on the Auckland isthmus (Gardner 2009). The forest grading into a tidal estuary adds to its biological value (Fig. 2). This wonderful bush area, with few weeds and good walking tracks in the heart of the city is an amazing asset. Although uncommon, native pigeons (kēreru) do visit Kepa Bush, as evident from some of the large-seeded native and exotic seedlings regenerating there. This will be particularly beneficial for the large-fruited native species that appear to be under-represented in the reserve, e.g. puriri, taraire, titoki, and nikau. However, there will be a constant

rain of weed seeds as well, e.g. loquat, monkey apple, brush cherry, and exotic palms. Weed sources close by include: the virtually pure tree privet forest on the north side of the railway running along the southern edge of Pourewa Creek for c.1 km (see Figs. 1 & 2); tree privet and hawthorn along the creek boundary of the Pourewa Reserve; and the many common weed species (especially climbing asparagus, wandering Jew, hawthorn, Chinese privet, tree privet, and kahili ginger) between Kempthorne Crescent and Selwyn College, the "Selwyn Bush". All these present a challenge to eradicate.

As the Kepa Bush forest continues to develop and become more humid, new native species will continue to establish (flora, fauna and fungi), whether brought in by birds, or blown in, or self-establishing (fauna). Regeneration of bush in the adjacent pasture area will occur as long as the pasture itself can be shaded out, and weed and animal pest control management is continued. Therefore the future for this large forest block in the heart of the city is positive; it should continue to expand, become more diverse and with the right encouragement should extend out into the adjacent pasture as that is retired from grazing.

**BioBlitz has provided Ngāti Whātua with data to** inform their restoration plan for Pourewa Reserve. This detailed knowledge of the biota of Kepa Bush reserve gives a good indication of what will act as a seed source for the regeneration of the Pourewa pasture. Historical evidence of Kepa Bush species also indicates what species could be re-introduced to this area. The documented vascular flora of St John's

Bush (Cameron 2000) on the south side of Pourewa valley c.1 km SE of Kepa Bush includes species apparently absent from Kepa Bush. These should also be considered for introduction to the north side of the Pourewa Creek, and include: pukatea, *Metrosideros perforata*, *Coprosma lucida* and *Gahnia setifolia*.

The bigger picture for conservation of the wider area should be to strengthen (by widening and managing weed and animal pest control) the existing green corridor from Tamaki Drive along Pourewa Creek up to St Johns Road, including Kepa Bush, Pourewa Reserve, Selwyn Bush and St John's Bush.

## Acknowledgements

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# Appendix: Vascular plants for Pourewa Creek (northern slopes), Kepa Bush Reserve and part of Pourewa Reserve (sun & shade columns).

For boundaries see Fig. 1. The Pourewa Creek list is based on Gardner (1981), and the Kepa Bush and Pourewa Reserves were surveyed as part of BioBlitz 2015. A few suspected-planted species were included only where there was doubt whether they were planted or wild, and two recent native plantings that might appear to be wild (parataniwha, and king fern) were also included. Where present, herbarium vouchers supporting records are cited.

## Key:

Y = recorded as present in Pourewa Creek by Rhys Gardner (1981) with synonymy as appears probable

M = species managed by the Friends of Kepa Bush and Te Ngahere since 2005

[M] = a weed species being managed by Te Ngahere and volunteers but not seen during BioBlitz

[M2] = a weed species being managed by volunteers (additional to Te Ngahere list) but not seen during BioBlitz

RG '09 = from Gardner (2009)

[YYYY] = record based on a herbarium specimen (year given)

a = abundant

c = common

o = occasional

l = local

lc = locally common

pl = known to be planted (?pl = suspected to be planted)

s = scarce (<5 individuals seen)

×1 = only 1 seen

+ = only seen adjacent to Kepa Bush Reserve (in bush by Pourewa Creek below Thatcher Street)

\* = naturalised species

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Scientific name	Maori / common name	POUREWA CREEK pre-2015 records	BIOBLITZ - 2015			Herbarium voucher
			Kepa Bush	Paddock (sun)	Paddock (shade)	
Club Mosses						
<i>Lycopodium volubile</i>	waekāhu, climbing clubmoss	[1882]				AK 136186
<i>Selaginella kraussiana</i> * M	African clubmoss	RG '09	lc			
FERNS						
<i>Adiantum aethiopicum</i>		[1894], RG '09				WELT P008234
<i>Adiantum cunninghamii</i>	common maidenhair	Y	lc			AK 135716, 214818, 353925
<i>Adiantum diaphanum</i>	mākaka, true maidenhair	Y				AK 153054
<i>Adiantum fulvum</i>	tawny maidenhair	Y	o			
<i>Adiantum hispidulum</i>	rosy maidenhair	Y	o		o	AK 214766
<i>Adiantum raddianum</i> *	delta maidenhair fern	[1980]	l +			AK 153070, 357118
<i>Asplenium bulbiferum</i>	mouku, hen and chickens	Y				WELT P010798
<i>Asplenium bulbiferum</i> x <i>A. gracillimum</i>	hen and chickens hybrid		l			AK 357229

Appendix cont.		POUREWA CREEK pre-2015 records	BIOBLITZ - 2015			Herbarium voucher
Scientific name	Maori / common name		Kepa Bush	Paddock (sun)	Paddock (shade)	
<i>Asplenium flaccidum</i>	makawe, hanging spleenwort	Y	o			AK 180643-47, 180703-06, 214698, 214716
<i>Asplenium gracillimum</i>		Y	o			
<i>Asplenium lamprophyllum</i>		Y				
<i>Asplenium oblongifolium</i>	huruhuruwhenua, shining spleenwort	Y	o		o	
<i>Asplenium polyodon</i>	petako, sickle spleenwort		l			
<i>Blechnum chambersii</i>	rereti	Y	l +			AK 136186, 259878
<i>Blechnum filiforme</i>	thread fern	Y	c			AK 219967, 259855
<i>Blechnum membranaceum</i>		Y	l			AK 136137, 259893
<i>Blechnum novae-zelandiae</i>	kiokio	Y	l			
<i>Blechnum parrisiae</i>	rasp fern	Y	c		o	AK 223045, 259824
<i>Cyathea dealbata</i>	ponga	Y	c		o	AK 259591
<i>Cyathea medullaris</i>	mamaku	Y	l		s	AK 220111-12
<i>Deparia petersenii</i>	Japanese-lady fern	RG '09	l			
<i>Dicksonia squarrosa</i>	wheki	Y	l			AK 137950, 211179
<i>Diplazium australe</i>		[1884]				AK 135902
<i>Hymenophyllum flabellatum</i>	fan-like filmy fern		s			AK 357227
<i>Lastreopsis glabella</i>		Y	o		o	AK 259940
<i>Lastreopsis hispida</i>	old hairy legs	[1979]	l			AK 223315
<i>Lastreopsis microsora</i>		Y	l			AK223329
<i>Loxogramme dictyopteris</i>		[1979]				AK 214745
<i>Microsorium pustulatum</i>	hound's tongue	Y	o		o	
<i>Microsorium scandens</i>	fragrant fern	Y	o		o	AK 223089
<i>Nephrolepis cordifolia</i> * M	tuber ladder fern	[M]				
<i>Pellaea rotundifolia</i>	tarawera	Y	l		l	AK 135754
<i>Pneumatopteris pennigera</i>	gully fern	Y	l		o	
<i>Polyphlebium venosum</i> ( <i>Trichomanes venosum</i> )			s			AK 357226



<i>Polystichum neozelandicum</i>	shield fern	Y (sp.?)			s	
<i>Pteridium esculentum</i>	aruhe, bracken	Y	l			
<i>Pteris macilenta</i>		Y	l			AK 220201
<i>Pteris tremula</i>	turawera	Y	l		Y	
<i>Ptisana salicina</i> M	para, king fern		pl			
<i>Pyrrosia eleagnifolia</i>		Y	lc		Y	
<i>Tmesipteris elongata</i>	tmesipteris		o			
<i>Tmesipteris lanceolata</i>	tmesipteris		o			
<b>CONIFERS</b>						
<i>Cryptomeria japonica</i> *	Japanese cedar		×1 +			AK 357159
<i>Dacrycarpus dacrydioides</i>	kahikatea		s			
<i>Dacrydium cupressinum</i>	rimu		s (pl?)			
<i>Podocarpus totara</i>	totara	Y	o		o	
<b>DICOTS: trees &amp; shrubs</b>						
<i>Acacia mearnsii</i> * M	black wattle	[M]				
<i>Acer pseudoplatanus</i> * M2	sycamore		×1			
<i>Alectryon excelsus</i>	titoki		s			
<i>Avicennia marina</i>	manawa, mangrove	Y	la	la		AK 40247
<i>Bartlettina sordida</i> * M	bartlettina	[M]				
<i>Beilschmiedia tarairi</i>	taraire	Y	s			
<i>Carica pubescens</i> * M	mountain pawapawa	[M]				
<i>Brachyglottis repanda</i>	rangiora	Y	o			AK 40233-34, 44876, 152466, 263737
<i>Carmichaelia australis</i>	native broom	[1875]	s +			WELT SP026153
<i>Carpodetus serratus</i>	putaputaweta	Y	lc			AK 40275
<i>Cestrum nocturnum</i> * M	queen of the night	[M]				
<i>Chrysanthemoides monilifera</i> * M	bone-seed	[1980]				AK 152475
<i>Coprosma grandifolia</i>	kanono		s+			
<i>Coprosma macrocarpa</i>	coastal karamu	Y	l		l	AK 152461

Appendix cont.		POUREWA CREEK pre-2015 records	BIOBLITZ - 2015			Herbarium voucher
Scientific name	Maori / common name		Kepa Bush	Paddock (sun)	Paddock (shade)	
<i>Coprosma macrocarpa</i> × <i>C. robusta</i>			o			
<i>Coprosma rhamnoides</i>		Y	o			
<i>Coprosma robusta</i>	karamu	Y	o		o	AK 152465
<i>Coriaria arborea</i>	tutu	Y	s +			AK 152477
<i>Corynocarpus laevigatus</i>	karaka	Y	lc		o	AK 44780, 152470
<i>Cotoneaster glaucophyllus</i> * M	cotoneaster	[M]				
<i>Crataegus monogyna</i> * M	hawthorn	RG '09	lc	c	c	
<i>Dodonaea viscosa</i>	akeake	[1959]				AK 262940
<i>Dysoxylum spectabile</i>	kohekohe	Y	c			AK 50701
<i>Eriobotrya japonica</i> * M	loquat	[M]				
<i>Euonymus japonicus</i> * M	evergreen spindle	[M]	s			
<i>Fatsia japonica</i> * M	fatsia	[1986]				AK 178706
<i>Fuchsia boliviana</i> * M	Bolivian fuchsia	[M]				
<i>Fuchsia excorticata</i>	kotukutuku	Y	[s] +			AK 151169, 152472
<i>Geniostoma ligustrifolium</i>	hangehange	Y	o		l	AK 40252, 40277, 152640, 263396
<i>Gomphocarpus physocarpus</i> *	swan plant		l			
<i>Grevillea robusta</i> *	silky oak		s pl?			
<i>Hebe stricta</i> var. <i>stricta</i>	koromiko	Y	s			AK 212972
<i>Hedycarya arborea</i>	porokaiwhiri, pigeonwood	Y	o			AK 44785, 152469
<i>Hoheria populnea</i>	houhere, lacebark		lc			
<i>Homalanthus populifolia</i> * M	Queensland poplar	[M]				
<i>Idesia polycarpa</i> * M2	wonder tree		s			AK 357116
<i>Knightia excelsa</i>	rewarewa	Y	s			AK 40274, 262312
<i>Kunzea robusta</i>	kanuka	Y	lc		s	
<i>Leptospermum scoparium</i>	manuka	Y	l			AK 152473, 175758
<i>Leucopogon fasciculatus</i>	mingimingi	Y	o			AK 152468
<i>Ligustrum lucidum</i> * M	tree privet	Y	o	o	lc	AK 273907



<i>Ligustrum sinense</i> * M	Chinese privet	RG '09	o	o	o	
<i>Litsea calicaris</i>	mangeao	RG '09	[s]			WELT SP025570
<i>Melicope ternata</i>	wharangi	[1870-1907 & 1948]				AK 104473, WELT SP029719
<i>Melicytus ramiflorus</i>	mahoe	Y	c		o	
<i>Metrosideros excelsa</i>	pohutukawa	Y	l			
<i>Metrosideros excelsa</i> × <i>M. robusta</i>			l			
<i>Myoporum laetum</i>	ngaio	Y	s pl			AK 108219
<i>Myrsine australis</i>	mapou	Y	o		lc	AK 44873
<i>Olearia furfuracea</i>	akipiro	Y				
<i>Olearia solandri</i>	coastal tree daisy	Y	×1			AK 357228
<i>Paraserianthes lophantha</i> * M	brush wattle	[M]		o		
<i>Pimelea tomentosa</i>		[1947]				AK 44764
<i>Piper excelsum</i>	kawakawa	Y	o		o	AK 45909, 152464, 152479, 261749
<i>Pittosporum crassifolium</i>	karo	Y	o		s	AK 152474
<i>Pittosporum eugenioides</i>	tarata	[1959]	l pl?			AK 262369
<i>Pittosporum tenuifolium</i>	kohuhu	[1959]	l pl?			AK 262391
<i>Plagianthus divaricatus</i>	saltmarsh ribbonwood	[1980]	s			AK152471
<i>Planchonella costata</i>	tawapou		s pl			
<i>Pomaderris amoena</i>	tauhinu	[1872 & 1894]				AK 5146, WELT SP024548
<i>Prunus cerasifera</i> 'Pissardii' * M2	black cherry plum		×1			AK 357171
<i>Prunus campanulata/serrulata</i> * M	Japanese hill/Tawan cherry	[M]	s			
<i>Pseudopanax arboreus</i>	whauwhaupaku	Y	lc			
<i>Pseudopanax crassifolius</i> x <i>P. lessonii</i>					s	
<i>Pseudopanax lessonii</i>	houpara	Y	s			
<i>Psoralea pinnata</i> *	dally pine				s	
<i>Rhamnus alaternus</i> * M	rhamnus	RG '09	[M]			
<i>Rhaphiolepis umbellata</i> * M	sexton's bride	[M]	l			AK 357272
<i>Rosa canina</i> *	dog rose	[1985]				AK 174334
<i>Rosa rubiginosa</i> *	sweet brier			o		

Appendix cont.		POUREWA CREEK pre-2015 records	BIOBLITZ - 2015			Herbarium voucher
Scientific name	Maori / common name		Kepa Bush	Paddock (sun)	Paddock (shade)	
<i>Salix fragilis</i> *	crack willow	RG '09	I +			
<i>Schefflera digitata</i>	patē	Y	I			
<i>Solanum mauritianum</i> * M	woolly nightshade	[M]	s			
<i>Sophora chathamica</i>	kowhai	Y	o		I	AK 40267, 152458-59
<i>Syzygium australe</i> * M	brush cherry	[M]	I			AK 357271
<i>Syzygium smithii</i> * M	monkeyapple	RG '09	o			
<i>Toxicodendron succedaneum</i> *	Japanese wax-tree	[2004]				AK 287191
<i>Ulex europaeus</i> * M	gorse	[M]	I	I		
<i>Vitex lucens</i>	puriri	[1959]	o			AK 264619
<b>DICOTS: climbers and trailers</b>						
<i>Anredera cordifolia</i> * M	Madeira vine	[M]				
<i>Araujia hortorum</i> * M	moth plant	[M]	o	o	o	
<i>Calystegia sepium</i> × <i>C. silvaticum</i> *			I		I	
<i>Calystegia sepium</i> subsp. <i>roseata</i>	pink bindweed			I		
<i>Calystegia tuguriorum</i>		Y	o			
<i>Clematis paniculata</i>	puawhananga	Y	o			AK 44794, 152467, 261686
<i>Delairea odorata</i> * M	German ivy	[1983]				AK 273911
<i>Elaeagnus</i> × <i>reflexa</i> * M	elaeanthus	[M]				
<i>Hedera helix</i> * M	ivy	[M]	s			
<i>Ipomoea indica</i> * M	blue morning glory	[M]	I			
<i>Jasminum polyanthum</i> * M	jasmine	[M]				
<i>Lonicera japonica</i> * M	Japanese honeysuckle	[M]	I	o		
<i>Muehlenbeckia australis</i>	pōhuehue	Y				AK 44797, 178602
<i>Muehlenbeckia complexa</i> var. <i>complexa</i>	pōhuehue	Y	o			
<i>Muehlenbeckia complexa</i> var. <i>grandifolia</i>			I			AK 357112
<i>Parsonsia heterophylla</i>	akakaikiore	Y	Ic			AK 40249-50, 152476



<i>Passiflora tripartita</i> * M	banana passionfruit	[M]	x1 ?			
<i>Rubus cissoides</i>	bush lawyer	Y				AK 262695
<i>Rubus fruticosus</i> agg. * M	blackberry	[M]		o		
<i>Vinca major</i> * M	periwinkle	[M]				
<b>DICOTS: herbs</b>						
<i>Acanthus mollis</i> * M	bear's breeches					
<i>Ageratina adenophora</i> * M	Mexican devil	[M]				
<i>Ageratina riparia</i> * M	mistflower	[M]				
<i>Anagallis arvensis</i> var. <i>arvensis</i> *	scarlet pimpernel		l	o		
<i>Anthemis cotula</i> *	stinking mayweed			lc		
<i>Apium</i> "white denticles"	tūtāe kōau, shore celery	Y			l	
<i>Bellis perennis</i> *	lawn daisy		l			
<i>Callitriche muelleri</i>	starwort		lc			
<i>Centaureum erythraea</i> *	centaury		l	o		
<i>Centella uniflora</i>	centella	[1947]				AK 44779
<i>Chenopodium album</i> *	fathen			l		
<i>Cirsium vulgare</i> *	Scotch thistle		o	o		
<i>Convolvulus arvensis</i> * M	convolvulus	[M]				
<i>Conyza sumatrensis</i> *	fleabane		o	o		
<i>Cotula coronopifolia</i>	batchelor's button	[1947-48]				AK 40236, 40246
<i>Crassula multicava</i> * M	pitted crassula	[M]				
<i>Crepis capillaris</i> *	hawksbeard		s	o		
<i>Daucus carota</i> *	wild carrot			lc		
<i>Dichondra repens</i>	Mercury Bay weed	Y	l			
<i>Elatostema rugosum</i>	parataniwha		pl			
<i>Erigeron karvinskianus</i> * M	Mexican daisy	[M]				
<i>Euchiton japonicus</i>		Y				
<i>Euphorbia peplus</i> *	milkweed		l	l		
<i>Gallium aparine</i> *	cleavers				l	

Appendix cont.			BIOBLITZ - 2015			
Scientific name	Maori / common name	POUREWA CREEK pre-2015 records	Kepa Bush	Paddock (sun)	Paddock (shade)	Herbarium voucher
<i>Gallium divaricatum</i> *	slender bedstraw		I			
<i>Gamochaeta coarctata</i> *	purple cudweed		O			
<i>Gamochaeta simplicicaulis</i> *			O	O		
<i>Haloragis erecta</i>	toatoa		O	Ic		
<i>Helminthotheca echioides</i> *	oxtongue			O		
<i>Hypericum androsaemum</i> * M	tutsan	[M]	I			
<i>Hypochaeris radicata</i> *	catsear		I		O	
<i>Impatiens sodenii</i> * M	shrub balsam	[M]				
<i>Lantana camara</i> * M	lantana	[M]				
<i>Lapsana communis</i> *	nipplewort		I			
<i>Leontodon saxatilis</i> *	hawksbit			O		
<i>Leucanthemum vulgare</i> *	oxeye daisy		O	Ic		
<i>Linum bienne</i> *	pale flax			O		
<i>Linum trigynum</i> *	yellow flax			O		
<i>Lobelia anceps</i>	punakuru	Y	I			
<i>Lotus pedunculatus</i> *	lotus		I	O		
<i>Lotus suaveolens</i> *	hairy birdsfoot trefoil			O		
<i>Lythrum hyssopifolia</i> *	hyssop loosestrife			I		
<i>Malva</i> sp. *	mallow			I		
<i>Mentha pulegium</i> *	penny royal			I		
<i>Mentha suaveolens</i> *	applemint				S	AK 357176
<i>Modiola caroliniana</i> *	creeping mallow			O		
<i>Oenanthe pimpinelloides</i> *	parsley dropwort	[1987]		Ic		AK 179320
<i>Oxalis corniculata</i> *	horned oxalis	[1873]				AK 5004
<i>Oxalis exilis</i>	creeping oxalis	[1871]		O		AK 5009
<i>Oxalis incarnata</i> *	lilac oxalis		I			

<i>Parentucellia viscosa</i> *	tarweed			lc		
<i>Phytolacca octandra</i> * M	inkweed	[M]	s		s	
<i>Plantago lanceolata</i> *	narrow-leaved plantain		l	lc		
<i>Plantago major</i> *	broad-leaved plantain		l	lc		
<i>Plectranthus ecklonii</i> *	blue spur flower				s	
<i>Plectranthus ciliatus</i> * M2	plectranthus	[M2]	[M2]			
<i>Polygonum arenastrum</i> *	small-leaved wireweed			c		
<i>Potentilla indica</i> *	Indian strawberry				l	
<i>Prunella vulgaris</i> *	selfheal		lc	lc		
<i>Pseudognaphalium luteoalbum</i>	pukatea, Jersey cudweed			o		
<i>Ranunculus acaulis</i>	sand buttercup	[1874]				AK 4342
<i>Ranunculus repens</i> *	creeping buttercup		lc	lc		
<i>Rumex conglomeratus</i> *	clustered dock		s	lc		
<i>Rumex obtusifolius</i> *	broad-leaved dock				l	
<i>Rumex pulcher</i> *	fiddle dock			o		
<i>Samolus repens</i>	<b>mākoako</b>	Y				AK 44776
<i>Selliera radicans</i>	remuremu	Y				
<i>Senecio angulatus</i> * M	Cape ivy	[M]				
<i>Senecio bipinnatisectus</i> *	Australian fireweed				l	
<i>Senecio esleri</i> *	Esler's fireweed		l			
<i>Senecio vulgaris</i> *	groundsel	[1959]				AK 264234
<i>Sherardia arvensis</i> *	field madder		l	l		
<i>Solanum linnaeanum</i> * M2	apple of Sodom		[M2]			
<i>Solanum nigrum</i> *	black nightshade		l			
<i>Solanum nodiflorum</i>	small-flowered nightshade		lc			
<i>Solanum pseudocapsicum</i> * M	Jerusalem cherry	[1980]			l	AK 152478
<i>Sonchus oleraceus</i> *	<b>pūhā</b>		o		o	
<i>Stellaria media</i> *	chickweed				l	
<i>Taraxacum officinale</i>	dandelion			o		

Appendix cont.		POUREWA CREEK pre-2015 records	BIOBLITZ - 2015			
Scientific name	Maori / common name		Kepa Bush	Paddock (sun)	Paddock (shade)	Herbarium voucher
<i>Trifolium pratense</i> *	red clover	[M]	I	o		AK 215079
<i>Trifolium repens</i> *	white clover			lc		
<i>Tropaeolum majus</i> * M	garden nasturtium				s	
<i>Verbena bonariensis</i> *	purple-top				s	
<i>Veronica persica</i> *	scrambling speedwell			lc		
<i>Wahlenbergia vernicosa</i>	native harebell	Y				
MONOCOTS: trees & shrubs						
<i>Archontophoenix cunninghamiana</i> * M	bangalow palm	[M]	[M]			AK 329780 AK 357117
<i>Cordyline australis</i>	ti, cabbage tree	Y	o		o	
<i>Dracaena draco</i> *	dragon tree	[2011]				
<i>Phoenix canariensis</i> * M	phoenix palm	[M]	I			
<i>Rhopalostylis sapida</i>	nikau	RG '09	I			
MONOCOTS: climbers and trailers						
<i>Asparagus aethiopicus</i> * M	asparagus fern	[M]				
<i>Asparagus asparagoides</i> * M	smilax	[M]			I	
<i>Asparagus scandens</i> * M	climbing asparagus	RG '09	o		o	
<i>Ripogonum scandens</i>	supplejack	Y	I			
MONOCOTS: rushes & allies						
<i>Apodasmia similis</i>	oioi	Y	I			AK 2971 AK 305055
<i>Juncus australis</i>	leafless rush	Y		o	o	
<i>Juncus bufonius</i> var. <i>bufonius</i> *	toad rush	[1870]				
<i>Juncus bufonius</i> var. <i>congestus</i> *		[1870]				
<i>Juncus edgariae</i>		Y		o		



<i>Juncus effusus</i> *	soft rush			o		
<i>Juncus filicaulis</i> *	leafless rush	[1878]				AK 2966
<i>Juncus kraussii</i>	sea rush		s			
<i>Juncus planifolius</i>	flat-leaved rush	[1893]				AK 2987
<i>Juncus tenuis</i> *	track rush		o			
<i>Juncus usitatus</i>			s	o		
<i>Luzula picta</i> var. <i>picta</i>		[1891]				AK 3086
<b>MONOCOTS: sedges</b>						
<i>Bolboschoenus caldwellii</i>		Y				
<i>Bolboschoenus medianus</i>	kōpūngāwhā	Y	l			
<i>Carex dissita</i>			o			
<i>Carex divulsa</i> *		[1999]		o	o	AK 250145
<i>Carex flagellifera</i>	mānaia	Y	lc		lc	AK 2666
<i>Carex geminata</i> agg.		Y	l			
<i>Carex lambertiana</i>	rautahi	Y	lc		o	
<i>Carex longebrachiata</i> *	Australian sedge	RG '09	o	lc	lc	AK 97422
<i>Carex ochrosaccus</i>		Y				AK 2777
<i>Carex secta</i>	makura	Y				AK 165435
<i>Carex solandri</i>		Y	l +			
<i>Carex uncinata</i>	hook grass	Y	o			WELT SP001860
<i>Carex virgata</i>		Y	l			
<i>Cyperus eragrostis</i> * M	umbrella sedge		lc		l	
<i>Cyperus ustulatus</i>	toetoe	Y	l			
<i>Ficinia nodosa</i>	wīwī, knobby clubrush	Y				
<i>Gahnia lacera</i>	tarangārara	Y	lc		o	
<i>Isolepis cernua</i>	slender clubrush	Y			l	AK 178704
<i>Isolepis ?inundata</i>		Y				
<i>Isolepis prolifera</i>		[1983]				AK 166240
<i>Isolepis reticularis</i>		Y	l			

Appendix cont.		POUREWA CREEK pre-2015 records	BIOBLITZ - 2015			
Scientific name	Maori / common name		Kepa Bush	Paddock (sun)	Paddock (shade)	Herbarium voucher
<i>Lepidosperma australe</i>	square sedge	Y				WELT SP020856
<i>Machaerina juncea</i>	tussock swamp twig rush	Y	I			
<i>Machaerina rubiginosa</i>	common twig rush	Y				
MONOCOTS: grasses						
<i>Agrostis capillaris</i> *	browntop			c		AK 178707
<i>Agrostis stolonifera</i> *	creeping bent			lc		
<i>Austroderia fulvida</i>	toetoe	[1946]				
<i>Axonopus fissifolius</i> *	carpet grass		I	lc		AK 357120
<i>Cenchrus clandestinus</i> *	kikuyu grass			lc		
<i>Cortaderia jubata</i> * M	purple pampas	[M]				
<i>Cortaderia selloana</i> * M	pampas grass	[M]	[M]	s		AK 357120
<i>Cynodon dactylon</i> *	Indian doab			lc		
<i>Cynosurus cristata</i> *	crested dogtail			lc		
<i>Dactylis glomerata</i> *	coxsfoot		I	o		AK 357120
<i>Ehrharta erecta</i> *	veldt grass		lc		o	
<i>Holcus lanata</i> *	Yorkshire fog			lc		
<i>Lolium perenne</i> *	ryegrass			lc		AK 357120
<i>Lolium rigidum</i> *	annual ryegrass			o		
<i>Microlaena stipoides</i>	meadow rice grass	Y	o			
<i>Oplismenus hirtellus</i>	oplismenus	Y	c		o	WELT SP069259
<i>Paspalum dilatatum</i> *	paspalum		I	la		
<i>Paspalum distichum</i> *	Mercer grass			I		
<i>Paspalum orbiculare</i>		[1894]				WELT SP069259
<i>Paspalum urvillei</i> *	Vasey grass			o		
<i>Phyllostachus</i> spp./ <i>Pseudosasa japonica</i> ? * M	bamboos	[M]				
<i>Poa anceps</i>	broad-leaved poa	Y				

<i>Rytidosperma clavatum</i>	danthonia	[1993]				AK 215080
<i>Rytidosperma racemosum</i> *	danthonia		o	o		
<i>Setaria gracilis</i> *	knot-root bristle grass			o		
<b>MONOCOTS: other monocot herbs</b>						
<i>Agapanthus praecox</i> * M	agapanthus	[M]	I			
<i>Allium triquetrum</i> * M	onionweed	RG '09	[M]		I	
<i>Alocasia brihanensis</i> * M	elephant's ear	[M]				
<i>Amaryllis belladonna</i> *	naked ladies			s		
<i>Astelia banksii</i>	<b>kōwharawhara, coastal astelia</b>	Y				
<i>Canna indica</i> * M	Indian shot	[M]				
<i>Clivia miniata</i> *	bush lily		I			
<i>Corybas cheesemanii</i>		[1867]				AK 11242
<i>Crocosmia xcrocosmiiflora</i> * M	montbretia	[M]				
<i>Dianella nigra</i>	<b>tūrutu</b>	Y	s			
<i>Earina mucronata</i>	bamboo orchid	Y				
<i>Hedychium gardnerianum</i> * M	kahili ginger	RG '09	I			
<i>Iris foetidissima</i> * M	stinking iris	[M]	I	lc	o	
<i>Monstera deliciosa</i> * M	fruit salad plant	[M]				
<i>Phormium tenax</i>	harakeke	RG '09	I			
<i>Tradescantia fluminensis</i> * M	wandering Jew	Y	lc			
<i>Triglochin striata</i>		Y				AK 44783
<i>Zantedeschia aethiopica</i> 'Green Goddess' * M	green goddess	[1986]	I			AK 178616
<i>Zostera muelleri</i>	eelgrass	Y				AK 153026, 153034, 175652, 266322