

Field trip to the eucalyptus forest near Murphy's Motorcamp, Matatā, 9 July 2022

Sarah Beadel

A small group met at Murphy's Motorcamp on a blustery winter's day to explore natural regeneration occurring under the eucalyptus (*E. botryoides*) forest on the dunes to the west and east of the camp. This exploration followed a field trip in 2021 that explored the dunes west of Matatā, and a study of indigenous regeneration in the understorey of the eucalyptus stand in 2007 (Wildland Consultants 2007). All plant species observed in the eucalyptus in 2007, 2021, and 2022 are set out in the attached list, and a separate list is also provided for the dunes between Murphy's Motorcamp and Pikowai. The eucalyptus stand was planted at least as early as 1920 for railway sleepers, around the time when the railway line was built.

The eucalyptus canopy is relatively open, probably as a result of the impacts of the brown lace lerp (*Cardiaspina fiscella*), which is a defoliating psyllid that causes severe damage to *Eucalyptus botryoides* foliage. It was very interesting to see the lerps on the eucalyptus leaves during the day. In places the forest is eucalyptus/houpara (*Pseudopanax lessonii*) forest with eucalyptus trees up to 24 m tall, emergent over houpara approximately eight metres tall. Houpara forms a diverse understorey beneath these two species with a few scattered kawakawa (*Piper excelsum* subsp. *excelsum*), and some *Asplenium oblongifolium*. On the top of the sand ridges there was local Japanese honeysuckle (*Lonicera japonica*), *Ficinia nodosa*, and Yorkshire fog (*Holcus lanatus*).

One of the highlights of the day was the *Kunzea toelkenii* which was found in several places near the foredune. This is the most westerly known population of this species (one patch was at grid reference E1926595 N5801890). It was also good to see *Carex inversa* beneath eucalyptus forest. This species is often overlooked and has not been recorded from many sites in the Bay of Plenty. We also saw over 100 nīkau (*Rhopalostylis sapida*) seedlings in the eucalyptus forest. Another interesting find was *Cordyline banksii* × *C. pumilio*.

Near the railway line to the west of the motorcamp we found four ngaio (*Myoporum laetum*), two of which were 7 m tall and up to 0.25 m DBH, four *Veronica arborea*, and two karaka (*Corynocarpus laevigatus*) up to 6 m tall (E1926676 N5801741). It was debated as to whether some or all of these were planted, particularly the

Veronica arborea, as Whakatāne District Council planted this species relatively extensively in the period 1980s—2000s. However, the size of the ngaio indicates that it is of natural origin. We also saw two large whau (*Entelea arborescens*).

It was disappointing to see various exotic species that have established locally following dumping of garden rubbish, including *Crassula multicava*, begonia (*Begonia* sp.), yucca (*Yucca gloriosa*), some examples of species from the Iridaceae family (not flowering or fruiting in the winter), and agapanthus (*Agapanthus praecox*). It appears that the agapanthus may be spreading in the area. It was good to see that the self-introduced smilax rust biological control (*Puccinia mysiphylli*) was having an impact on smilax (*Asparagus asparagoides*), effectively keeping it to low levels in the area.

We saw several skinks in one place towards the end of the day which were likely to be rainbow or plague skink (*Lampropholis delicata*), which is an introduced pest species. §

Overall, it was an interesting day of botanical exploration, and a good way to spend a mid-winter day.

References

- Beadel, S.M. 2021a: Vascular plants observed in the dunes between Matatā and the eucalyptus stand east of Murphy's Motorcamp, 9 July 2021. *Rotorua Botanical Society Newsletter No. 77*, 27-30.
- Beadel, S.M. 2021b: Vascular plants of eucalyptus forest at Matatā. Update of 2007 list from Wildland Consultants 2007. *Rotorua Botanical Society Newsletter No. 77*, 31-35.
- Simpson, A. and Beadel, S.M. 2021: Sand dunes west of Matatā – 9 July 2021. *Rotorua Botanical Society Newsletter No. 77*, 24-26.
- Wildland Consultants 2007: Ecological survey of regenerating indigenous dune forest, Matatā, Bay of Plenty. *Wildland Consultants Ltd Contract Report No. 1678*. Prepared for Environment Bay of Plenty, 62 p.

§ “The pest status of this species is uncertain, and killing of these skinks is regarded as ‘inadvisable’.” Purdie, S. 2022. A naturalist's guide to the reptiles and amphibians of New Zealand. John Beayfoy Publishing. Editors

Vascular plants observed in the dunes between Matatā and Pikowai beach, 9 July 2022

Sarah Beadel

Notes

- All species were observed during the July 2022 field trip (except for ** species).
- E = new record in 2021/2022, beneath eucalyptus-houpara-pōhutukawa forest (see Wildland Consultants 2007).
- Threat rankings are from de Lange *et al.* (2018).
- * Species recorded on 9 July 2022, but not in July 2021.
- ** Recorded in 2021 (Beadel 2021a) but not 2022.

Indigenous Species

Monocot. trees and shrubs

<i>Cordyline australis</i>	tī kōuka, cabbage tree
<i>Cordyline pumilio</i> *	tī rauriki
<i>Cordyline banksii</i> × <i>C. pumilio</i> *	
<i>Rhopalostylis sapida</i>	nīkau

Dicot. trees and shrubs

<i>Brachyglottis repanda</i> subsp. <i>repanda</i> **	rangiora
<i>Coprosma grandifolia</i>	kanono, raurēkau, raurākau, manono
<i>Coprosma lucida</i>	karamū, kāramuramu, glossy karamū
<i>Coprosma repens</i>	taupata
<i>Coprosma robusta</i>	karamū, kāramuramu
<i>Coriaria arborea</i> var. <i>arborea</i>	tutu
<i>Dodonaea viscosa</i> **	akeake
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Hedycarya arborea</i>	porokaiwhiri; pigeonwood
<i>Kunzea robusta</i> (Threatened-Nationally Endangered)	kānuka
<i>Kunzea toelkenii</i> (Threatened-Nationally Vulnerable) (E)Thornton	kānuka
<i>Leptospermum scoparium</i> agg. (At Risk-Declining)	mānuka
<i>Melicytus ramiflorus</i> subsp. <i>ramiflorus</i>	māhoe
<i>Metrosideros excelsa</i> (Threatened-Nationally Vulnerable)	pōhutukawa
<i>Myrsine australis</i>	māpou, matipou, māpau
<i>Piper excelsum</i> subsp. <i>excelsum</i>	kawakawa
<i>Pittosporum crassifolium</i>	karo
<i>Pseudopanax arboreus</i> var. <i>arboreus</i>	whauwhaupaku, five finger
<i>Pseudopanax crassifolius</i> × <i>P. lessonii</i>	
<i>Pseudopanax lessonii</i>	houpara
<i>Veronica arborea</i> *	
<i>Veronica stricta</i> var. <i>stricta</i>	koromiko, kōkōmuka

Dicot. lianes

<i>Calystegia sepium</i> subsp. <i>roseata</i>	pink bindweed
<i>Calystegia soldanella</i>	panahi, shore bindweed
<i>Muehlenbeckia australis</i>	puka
<i>Muehlenbeckia complexa</i> var. <i>complexa</i>	small-leaved pōhuehue

Ferns

Asplenium flaccidum subsp. *flaccidum***

makawe

Asplenium polyodon

petako

*Blechnum parrisiae** (*Doodia australis*)

pukupuku

Cyathea dealbata

ponga, silver fern

Cyathea medullaris

mamaku

Diplazium australe

*Histiopteris incisa***

mātātā, water fern

Microsorium pustulatum

kowaowao, hounds tongue fern

*Parablechnum novae-zelandiae***

kiokio

*Pneumatopteris pennigera***

pakau

Pteridium esculentum

rārahu, bracken

Pteris tremula

turawera, shaking brake

Grasses

Lachnagrostis billardierei

sand wind grass

Microlaena stipoides

pātītī, meadow rice grass

Oplismenus hirtellus subsp. *imbecillis*

Spinifex sericeus

kōwhangatara, spinifex

Sedges

*Bolboschoenus fluviatilis***

pūrua grass, kukuraho

*Bolboschoenus medianus***

pūrua grass

*Carex breviculmis***

Carex geminata

*Carex inversa***

*Carex maorica***

*Carex pumila***

*Carex solandri**

*Carex testacea***

*Carex uncinata**

kamu matau a Maui, kamu

Carex virgata

Cyperus ustulatus f. *ustulatus*

toetoe upoko-tangata

Ficinia nodosa

wīwī

Ficinia spiralis (At Risk-Declining)

pīngao

Gahnia pauciflora (E)**

takahikahi

Machaerina sinclairii (E)*

toetoe tūhara, pēpepe

Rushes

*Juncus edgariae***

wi

Monocot. herbs (other than orchids, grasses, sedges, and rushes)

Dianella nigra

tūrutu

Phormium cookianum subsp. *hookeri*

wharariki, mountain flax

*Typha orientalis***

raupō

Composite herbs

Pseudognaphalium luteoalbum agg. **

*Senecio bipinnatisectus***

Australian fireweed

Dicot. herbs (other than composites)

Haloragis erecta subsp. *erecta*

toatoa

*Oxalis rubens***

sand oxalis

Persicaria decipiens **

tutunawai

Naturalised and exotic species

Gymnosperms

Pinus radiata

radiata pine

Dicot. trees and shrubs

Erica lusitanica

Spanish heath

Eucalyptus botryoides

eucalyptus, bangalay

*Helichrysum petiolare***

liquorice plant

*Ligustrum sinense**

Chinese privet

Lupinus arboreus

lupin

*Lycium ferocissimum***

boxthorn

Paraserianthes lophantha

brush wattle

Rubus phoenicolasius

Japanese wineberry

Rubus sp. (*R. fruticosus* agg.)

blackberry

*Salix cinerea***

grey willow

Ulex europaeus

gorse

Monocot. lianes

Asparagus asparagoides

smilax

Dicot. lianes

*Ipomoea indica***

blue morning glory

Lonicera japonica

Japanese honeysuckle

Grasses

*Agrostis stolonifera***

creeping bent

*Ammophila arenaria***

marram

*Anthoxanthum odoratum***

sweet vernal

*Bromus willdenowii***

prairie brome

Cenchrus clandestinus

kikuyu grass

Cortaderia selloana

pampas

*Cynodon dactylon***

Indian doab

Dactylis glomerata

cocksfoot

Ehrharta erecta

veldt grass

*Holcus lanatus***

Yorkshire fog

Lagurus ovatus

haretail

Lolium arundinaceum subsp. *arundinaceum*

tall fescue

*Paspalum dilatatum***

paspalum

*Pennisetum clandestinum***

kikuyu grass

Setaria gracilis

knot-root bristle grass

*Setaria palmifolia***

palm grass

Sporobolus africanus

ratstail

Sedges

Cyperus eragrostis

*Cyperus involucratus*** umbrella sedge

Monocot. herbs (other than orchids, grasses, sedges, and rushes)

Agapanthus praecox agapanthus
Gladiolus sp. gladiolus
*Tradescantia fluminensis** tradescantia
Watsonia sp.* watsonia
*Zantedeschia aethiopica*** arum lily

Composite herbs

*Achillea millefolium*** yarrow
*Aster subulatus*** sea aster
Crepis capillaris hawksbeard
Erigeron sumatrensis broad-leaved fleabane
*Gamochaeta coarctata*** cudweed
Hypochaeris radicata catsear
Senecio elegans purple groundsel
Sonchus oleraceus puha, sow thistle

Dicot. herbs (other than composites)

*Anagallis arvensis*** scarlet pimpernel
Cakile maritima sea rocket
*Digitalis purpurea*** foxglove
*Foeniculum vulgare*** fennel
Fumaria muralis scrambling fumitory
Galium aparine cleavers
Lepidium africanum agg. ** pepper cress
*Lotus pedunculatus*** lotus
*Modiola caroliniana*** creeping mallow
*Myosotis discolor** grassland forget-me-not
*Oenothera stricta*** evening primrose
Oxalis sp.** oxalis
Phytolacca octandra inkweed
Plantago lanceolata narrow-leaved plantain
Plantago major (E)** broad-leaved plantain
*Prunella vulgaris*** selfheal
Ranunculus repens creeping buttercup
Rumex acetosella sheep's sorrel
*Rumex obtusifolius*** broad-leaved dock
*Silene gallica*** catchfly
*Solanum chenopodioides*** velvety nightshade
*Solanum nigrum*** black nightshade
*Trifolium repens*** white clover
*Verbena bonariensis*** purple-top
*Veronica anagallis-aquatica*** water speedwell
*Veronica arvensis*** field speedwell
*Vicia sativa*** vetch

Vascular plants of eucalyptus forest at Matata

Sarah Beadel and Jenny Lux

July 2007

Updated 8 July 2021 (Beadel 2021b) and 9 July 2022 - Sarah Beadel

Key

1. Observed in 2007
2. Natural, and planted in Vegetation Type 15¹ (young indigenous plantings near train lines east of motor camp.
3. One young plant seen; appeared to be *Phormium cookianum* (wharariki, mountain flax) but could be *P. tenax*.
4. Seedling(s) only.
5. Planted in Vegetation Type 15 only; no natural karaka seen in study area.
6. Seedlings and saplings only.
7. Greg Jenks (Coast Care Bay of Plenty) pers. comm 2007.
8. Environmental pest plant.
9. Observed in 2021 (Beadel 2021b).
10. Observed in 2022

Indigenous Species

Monocot. trees and shrubs

<i>Cordyline australis</i> ^{1,2,9,10}	tī kouka, cabbage tree
<i>Cordyline pumilio</i> ¹⁰	tī rauriki
<i>Phormium</i> sp. ^{1,3}	
<i>Phormium cookianum</i> subsp. <i>hookeri</i> ¹⁰	wharariki, mountain flax
<i>Cordyline banksii</i> × <i>C. pumilio</i> ¹⁰	
<i>Phormium tenax</i> ^{1,2,9}	harakeke, flax
<i>Rhopalostylis sapida</i> ^{1,4,9,10}	nikau

Dicot. trees and shrubs

<i>Beilschmiedia tawa</i> ^{1,4}	tawa
<i>Brachyglottis repanda</i> subsp. <i>repanda</i> ^{1,9}	rangiora
<i>Coprosma grandifolia</i> ^{1,9,10}	kanono
<i>Coprosma lucida</i> ^{1,9,10}	karamū
<i>Coprosma repens</i> ^{1,9,10}	taupata
<i>Coprosma robusta</i> ^{1,9,10}	karamu
<i>Coriaria arborea</i> var. <i>arborea</i> ^{1,9,10}	tutu
<i>Corynocarpus laevigatus</i> ^{1,5,10}	karaka
<i>Dodonaea viscosa</i> ^{1,9,10}	akeake
<i>Entelea arborescens</i> ^{1,7,10}	whau
<i>Fuchsia excorticata</i> ^{1,6}	kotukutuku
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i> ^{1,9,10}	hangehange
<i>Hebe stricta</i> var. <i>stricta</i> ^{1,9,10}	koromiko
<i>Hedycarya arborea</i> ^{1,9,10}	porokaiwhiri
<i>Knightia excelsa</i> ^{1,9,10}	rewarewa
<i>Kunzea robusta</i> ^{1,9,10}	kānuka
<i>Kunzea toelkenii</i> ^{1,10}	Thornton kānuka

<i>Leptospermum scoparium</i> agg. ^{1,9,10}	mānuka
<i>Leucopogon fasciculatus</i> ^{1,10}	mingimingi
<i>Litsea calicaris</i> ^{1,6,10}	mangeao
<i>Melicytus ramiflorus</i> subsp. <i>ramiflorus</i> ^{1,9,10}	mahoe
<i>Metrosideros excelsa</i> ^{1,2,9,10}	pohutukawa
<i>Myoporum laetum</i> ^{1,10}	ngaio
<i>Myrsine australis</i> ^{1,9,10}	mapou
<i>Piper excelsum</i> subsp. <i>excelsum</i> ^{1,2,9,10}	kawakawa
<i>Pittosporum crassifolium</i> ^{1,9,10}	karo
<i>Pseudopanax arboreus</i> var. <i>arboreus</i> ^{1,9,10}	whauwhaupaku, five finger
<i>Pseudopanax crassifolius</i> × <i>P. lessonii</i> ^{1,9,10}	
<i>Pseudopanax lessonii</i> ^{1,9,10}	houpara
<i>Vitex lucens</i> ^{1,6,10}	puriri
<u>Monocot. lianes</u>	
<i>Ripogonum scandens</i> ^{1,4,10}	kareao, supplejack
<u>Dicot. lianes</u>	
<i>Calystegia sepium</i> subsp. <i>roseata</i> ^{1,9,10}	pohue
<i>Calystegia sepium</i> × <i>C. soldanella</i> ^{1,10}	
<i>Calystegia soldanella</i> ^{1,9,10}	panahi
<i>Muehlenbeckia australis</i> ^{1,9,10}	puka
<i>Muehlenbeckia complexa</i> ^{1,9,10}	pohuehue
<u>Ferns</u>	
<i>Asplenium flaccidum</i> subsp. <i>flaccidum</i> ^{1,9,10}	makawe
<i>Asplenium oblongifolium</i> ¹⁰	huruhuru whenua, shining spleenwort
<i>Asplenium polyodon</i> ^{1,9,10}	petako
<i>Blechnum parrisiae</i> ¹⁰ (<i>Doodia australis</i>)	pukupuku
<i>Cyathea dealbata</i> ^{1,9,10}	ponga
<i>Cyathea medullaris</i> ^{1,9,10}	mamaku
<i>Dicksonia fibrosa</i> ¹	wheki-ponga
<i>Diplazium australe</i> ^{1,9,10}	
<i>Hypolepis ambigua</i> ¹	
<i>Microsorium pustulatum</i> ^{1,9,10}	kowaowao, hounds tongue fern
<i>Paesia scaberula</i> ^{1,9,10}	matata
<i>Parablechnum novae-zelandiae</i> ^{1,9,10}	kiokio
<i>Pneumatopteris pennigera</i> ^{1,9}	pakau
<i>Pteridium esculentum</i> ^{1,9,10}	bracken, rarahū
<i>Pteris tremula</i> ^{1,9,10}	turawera, shaking brake
<u>Grasses</u>	
<i>Lachnagrostis billardierei</i> ^{1,9}	perehia
<i>Microlaena stipoides</i> ^{1,9,10}	patiti, meadow rice grass
<i>Oplismenus hirtellus</i> subsp. <i>imbecillis</i> ^{1,9,10}	
<u>Sedges</u>	
<i>Bolboschoenus fluviatilis</i> ^{1,9}	ririwaka
<i>Carex breviculmis</i> ^{1,9}	
<i>Carex geminata</i> ^{1,9,10}	

<i>Carex inversa</i> ^{1,9,10}	
<i>Carex maorica</i> ^{1,9}	
<i>Carex pumila</i> ^{1,9,10}	
<i>Carex secta</i> ¹	purei
<i>Carex solandri</i> ^{1,10}	
<i>Carex testacea</i> ^{1,9}	
<i>Carex uncinata</i> ¹⁰	kamu matau a Maui, kamu
<i>Carex virgata</i> ^{1,9,10}	purei
<i>Cyperus ustulatus</i> ^{1,9,10}	toetoe upokotangata
<i>Ficinia nodosa</i> ^{1,9,10}	wīwī
<i>Gahnia pauciflora</i> ⁹	takahikahi
<i>Machaerina sinclairii</i> (E) ¹⁰	toetoe tūhara, pēpepe

Rushes

<i>Juncus edgariae</i> ^{1,9}	wi
<i>Juncus planifolius</i> ¹	

Monocot. herbs (other than orchids, grasses, sedges and rushes)

<i>Dianella nigra</i> ^{1,9,10}	turutu
<i>Typha orientalis</i> ^{1,9}	raupo

Composite herbs

<i>Pseudognaphalium luteoalbum</i> agg. ^{1,9}	
<i>Senecio hispidulus</i> ¹	
<i>Senecio bipinnatisectus</i> ¹	Australian fireweed

Dicot. herbs (other than composites)

<i>Dichondra repens</i> ¹⁰	Mercury Bay weed
<i>Geranium solanderi</i> ¹	
<i>Haloragis erecta</i> subsp. <i>erecta</i> ^{1,9,10}	toatoa
<i>Oxalis rubens</i> ^{1,9}	
<i>Persicaria decipiens</i> ^{1,9}	
<i>Solanum americanum</i> ^{1,10}	

Adventive Species

Dicot. trees and shrubs

<i>Eucalyptus botryoides</i> ^{1,8,9,10}	eucalyptus, bangalay, southern mahogany
<i>Ligustrum sinense</i> ¹⁰	Chinese privet
<i>Lupinus arboreus</i> ^{1,9,10}	lupin
<i>Lycium ferocissimum</i> ^{1,8,9}	African boxthorn
<i>Myoporum insulare</i> ^{1,8,9}	Australian ngaio; Tasmanian boobialla
<i>Paraserianthes lophantha</i> ^{1,8,9}	brush wattle
<i>Rubus phoenicolasius</i> ^{1,9,10}	Japanese wineberry
<i>Rubus</i> sp. (<i>R. fruticosus</i> agg.) ^{1,8,9,10}	blackberry
<i>Salix cinerea</i> ^{1,8,9}	grey willow
<i>Salix ×fragilis</i> ^{1,8}	crack willow

Dicot. lianes

<i>Lonicera japonica</i> ^{1,8,9,10}	Japanese honeysuckle
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Grasses

<i>Agrostis capillaris</i> ¹	browntop
<i>Agrostis stolonifera</i> ^{1,9}	creeping bent
<i>Alopecurus geniculatus</i> ¹	kneed foxtail
<i>Anthoxanthum odoratum</i> ^{1,9}	sweet vernal
<i>Axonopus fissifolius</i> ¹	narrow-leaved carpet grass
<i>Bromus willdenowii</i> ^{1,9}	prairie brome
<i>Cortaderia selloana</i> ^{1,8,9,10}	pampas
<i>Cynodon dactylon</i> ^{1,9}	Indian doab
<i>Dactylis glomerata</i> ^{1,9,10}	cocksfoot
<i>Ehrharta erecta</i> ^{1,9,10}	veld grass
<i>Elytrigia pycnantha</i> ^{1,8}	sea couch
<i>Holcus lanatus</i> ^{1,9}	Yorkshire fog
<i>Lagurus ovatus</i> ^{1,9}	harestail
<i>Lolium arundinaceum</i> subsp. <i>arundinaceum</i> ^{1,9,10}	tall fescue
<i>Paspalum dilatatum</i> ^{1,9}	paspalum
<i>Paspalum distichum</i> ¹	Mercer grass
<i>Pennisetum clandestinum</i> ^{1,8,9,10}	kikuyu grass
<i>Poa pratensis</i> ¹	Kentucky bluegrass
<i>Setaria gracilis</i> ¹	knot-root bristle grass
<i>Setaria palmifolia</i> ^{1,9}	palm grass
<i>Sporobolus africanus</i> ^{1,9,10}	ratstail
<i>Stenotaphrum secundatum</i> ¹	buffalo grass

Sedges

<i>Cyperus eragrostis</i> ^{1,9,10}	
<i>Cyperus involucratus</i> ^{1,8,9}	umbrella sedge

Rushes

<i>Juncus bufonius</i> ¹	
<i>Juncus effusus</i> ¹	soft rush
<i>Juncus tenuis</i> ¹	track rush

Monocot. herbs (other than orchids, grasses, sedges and rushes)

<i>Agapanthus praecox</i> ^{1,8,9,10}	agapanthus
<i>Amaryllis belladonna</i> ^{1,8}	naked lady, belladonna lily
<i>Asparagus asparagoides</i> ^{1,8,9,10}	smilax
<i>Canna indica</i> ^{1,8}	canna lily
<i>Crocasmia ×crocosmiiflora</i> ^{1,8,10}	montbretia
<i>Hedychium gardnerianum</i> ^{1,8,9,10}	kahili ginger
<i>Tradescantia fluminensis</i> ¹⁰	tradescantia
<i>Watsonia</i> sp. ¹⁰	watsonia
<i>Yucca</i> sp. ¹⁰	
<i>Zantedeschia aethiopica</i> ^{1,8}	arum lily
Unidentified monocot ¹⁰ (Iridaceae family) Iridaceae	

Composite herbs

<i>Achillea millefolium</i> ^{1,9}	yarrow
<i>Artemisia verlotiorum</i> ¹	Chinese mugwort
<i>Aster subulatus</i> ^{1,9}	sea aster

*Cirsium arvense*¹
*Cirsium vulgare*¹
Crepis capillaris^{1,9}
Erigeron sumatrensis^{1,9,10}
Gamochaeta coarctata^{1,9}
Hypochoeris radicata^{1,9,10}
Lactuca serriola^{1,10}
*Lapsana communis*¹
Leontodon taraxacoides^{1,10}
Osteospermum jucundum^{1,8}
*Senecio jacobaea*¹
*Senecio skirrhodon*¹
Sonchus oleraceus^{1,9,10}
Taraxacum officinale^{1,10}

California thistle
Scotch thistle
hawksbeard
fleabane
cudweed
catsear
prickly lettuce
nipplewort
hawkbit
freeway daisy
ragwort
gravel groundsel
puha
dandelion

Dicot. herbs (other than composites)

Anagallis arvensis^{1,9}
Begonia sp.¹⁰
*Chenopodium album*¹
*Crassula multicava*¹⁰
Euphorbia peplus^{1,10}
Foeniculum vulgare^{1,10}
Fumaria muralis^{1,9,10}
Galium aparine^{1,10}
*Galium divaricatum*¹
Geranium robertianum^{1,10}
Lotus pedunculatus^{1,10}
Modiola caroliniana^{1,9}
*Myosotis discolor*¹⁰
*Myosotis sylvatica*¹
Orobancha minor^{1,10}
Oxalis sp.^{1,9}
Oxalis sp.¹⁰ x2
*Pastinaca sativa*¹
Pelargonium ×hortorum^{1,8,10}
*Physalis peruviana*¹
Phytolacca octandra^{1,10}
Plantago lanceolata^{1,9,10}
*Plantago major*⁹
*Polycarpon tetraphyllum*¹
*Portulaca oleracea*¹
Prunella vulgaris^{1,9}
Ranunculus repens^{1,9,10}
Rumex obtusifolius^{1,9,10}
Silene gallica^{1,9}
*Sison amomum*¹
Solanum chenopodioides^{1,9}
Solanum nigrum^{1,9,10}
*Spergularia rubra*¹

scarlet pimpernel
begonia
fathen
fairy crassula
milkweed
fennel
scrambling fumitory
cleavers

herb Robert
lotus
creeping mallow
grassland forget-me-not
garden forget-me-not
broomrape
oxalis

wild parsnip
geranium
cape gooseberry
inkweed
narrow-leaved plantain
broad-leaved plantain
allseed
wild portulaca
selfheal
creeping buttercup
dock
catchfly
stone parsley
velvety nightshade
black nightshade
sand spurrey

<i>Trifolium repens</i> ¹	white clover
<i>Verbena incompta</i> ^{1,9,10}	purple-top
<i>Verbena officinalis</i> ¹	vervain
<i>Veronica anagallis-aquatica</i> ^{1,9}	water speedwell
<i>Veronica arvensis</i> ^{1,9}	field speedwell
<i>Veronica persica</i> ¹	scrambling speedwell
<i>Veronica serpyllifolia</i> ¹	turf speedwell
<i>Vicia sativa</i> ^{1,9}	vetch
<i>Vinca major</i> ¹	periwinkle
<i>Viola arvensis</i> ¹	field pansy
<i>Wahlenbergia</i> sp. ¹	harebell

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