

Matatā Sand Dunes - 6 June 2020

Sarah M. Beadel

Eight of us gathered on a beautiful early winter morning at the campground at the Matatā Lagoon on 6 June 2020. First we headed to the beach to check out the waves and watch the surfers. We then searched the base of the foredune for beach spinach (*Tetragonia tetragonioides*), with no luck. There was, however, a good cover of spinifex with a few scattered sea rocket (*Cakile maritima*) along the toe of the foredune. We moved back up onto the top of the foredune, walking along one of the 4WD tracks behind the foredune, heading east towards the Tarawera River.

As well as *Spinifex*, *Calystegia soldanella*, *Muehlenbeckia complexa*, and *Ficinia nodosa*, other indigenous species seen included *Lachnagrostis billardierei* and *Oxalis rubens*. Exotic species observed included veldt grass (*Ehrharta erecta*) and Argentine cress (*Lepidium bonariense*). Various indigenous species have been planted near where we parked the cars, including houpara (*Pseudopanax lessonii*), mānuka (*Leptospermum scoparium*), ti kōuka (cabbage tree; *Cordyline australis*), koromiko (*Hebe stricta* var. *stricta*), akeake (*Dodonea viscosa*), and a few coastal māhoe (*Melicytus novae-zelandiae*). Despite searching we didn't see any naturally-occurring or naturalised coastal māhoe during the day.

One of the trip members shared with the group a disturbing fact that for every kilometre of beach between the Tarawera River Mouth and Ōtamarākau, there are more than two kilometres of 4WD tracks. Cumulatively, this has resulted in considerable loss of sand dune habitat for vegetation and fauna.

About half way along the track we came across a small patch (about 2 × 2 metres) of *Zoysia pauciflora* in the middle of the track. This was the only time we saw this regionally uncommon species (c.f. Beadel 2009) all day. Further on we saw the indigenous meadow rice grass (*Microlaena stipoides*) amongst *Muehlenbeckia complexa*. There were many scattered dead boxthorn (*Lycium ferocissimum*) which have been controlled recently by the Regional Council. We found one carex which, after a bit of discussion, we decided was *Carex* aff. *raoulii* ("raotest").

After a lovely lunch by the Tarawera River mouth we started back towards the cars, but stopped a short time later to look at several low wind-shorn kānuka. After much debate, we determined that they were most likely *Kunzea toelkenii* and collected a



Typical scene on a Botanical Society field trip! Looking closely at the wind shorn *Kunzea toelkenii*.

specimen for the National Forestry Herbarium at Scion (NZFRI). We found 11 plants in total: one patch of six, one group of two, and three individuals. Jo Bonner from Coastlands Nursery plans to return in the next year or two to collect seed and grow it to observe the growth form in a controlled environment.

We continued along the inland 4WD track looking for a convenient place to enter the wetland. Eventually we came across a good access point with little blackberry or gorse, and were quickly rewarded with a good view of a mātātā/fernbird (At Risk-Declining). A wide range of wetland sedges, rushes, and reeds were present, including *Machaerina juncea*, oioi, *Machaerina articulata*, and raupō, along with marsh ribbonwood, local *Carex sinclairii*, and a patch of swamp millet (*Isachne globosa*).

Once back at the cars, most people headed home, however a couple of us stayed to walk around the reconstructed lagoon to the west, and check out the licorice plant (*Helichrysum petiolare*) population at the far end. We saw five separate clumps of licorice plant, which is well established. It is interesting to note that I first saw this species here in 1985 and it is now established at several sites in the Bay of Plenty



Licorice plant (*Helichrysum petiolare*)



Small licorice plants are becoming established inland from the main infestation.

and is considered a pest plant of high priority for control whilst this is still readily achievable. Various other weeds were seen, including a few wild Phoenix palms (*Phoenix canariensis*) and Japanese spindleberry (*Euonymus japonicus*) near the main road.

After looking at the lagoon we headed to the beach where there was also a good cover of spinifex along the foredune, along with a few clumps of pīngao (possibly planted) and several plants of *Poa billardierei* (again probably planted).

It was a lovely day out with some interesting botanising. Thank you to everyone who attended.

References

- Beadel S.M. 2009: Regionally uncommon plant species in the Bay of Plenty. *Wildland Consultants Contract Report No. 1175a*.
- Beadel S.M. 2012: Vascular plants of Matatā Wildlife Refuge. *Unpublished species list*.
- Irving R.M. and Beadel S.M. 1992: Botanical surveys and assessments of wildlife reserves in the Te Teko Ecological District. *Technical Report Series No. 10*. Bay of Plenty Conservancy, Department of Conservation. 198 p.
- Wildland Consultants 2002: Ecological restoration of wetlands on the Rangitaiki Plains - Tumurau Lagoon Conservation Covenant, Tarawera Cut Wildlife Management Reserve, Matatā Wildlife Refuge, Thornton Lagoon Wildlife Management Reserve, Awaiti Wildlife Management Reserve, Lake Tamurenui Wildlife Management Reserve, Bregman Wildlife Management Reserve. *Wildland Consultants Ltd Contract Report No. 527*. Prepared for Department of Conservation, Whakatāne. 128 p.
- Wildland Consultants 2016: Nationally threatened and regionally uncommon plant species in the Bay of Plenty. *Wildland Consultants Ltd Contract Report No. 3953c*. Prepared for Bay of Plenty Regional Council. 26 p.



Glorious reflections in the open water bodies in the Matatā Lagoon.



Planted *Poa billardieri*



Extensive licorice plant amongst *Muehlenbeckia complexa*.
First seen here by the author in the 1980s.

Matatā Wildlife Refuge plant species

Sarah M. Beadel 2020

Updated from Beadel 2012 during the Rotorua Botanical Society field trip in May 2020.

Key

- ** 2020 record (Current)
- + 2012 record (Beadel 2012)
- * 1991 record (Irving and Beadel 1991)

Indigenous Species

Monocot. trees and shrubs

Cordyline australis (P, N) ** tī kōuka, cabbage tree

Dicot. trees and shrubs

Coprosma ×cunninghamii **

Coprosma propinqua var. *propinqua* ** mingimingi

Coprosma repens (P, N) ** taupata

Coprosma robusta (P, N) ** karamū, kāramuramu

Coprosma tenuicaulis ** hukihuki, swamp coprosma

Coprosma propinqua × *C. robusta* **

Coriaria arborea var. *arborea* ** tutu

Corynocarpus laevigatus (P) ** karaka

Dodonea viscosa (P, N)¹ ** akeake

Entelea arborescens (P) ** whau

Geniostoma ligustrifolium var. *ligustrifolium* ** hangehange

Hebe stricta var. *stricta* (P, N) ** koromiko, kōkōmuka

Kunzea robusta (P) ** kānuka

Kunzea toelkenii (N) ** Thornton kānuka

Leptospermum scoparium agg. (P, N) ** mānuka

Melicytus novae-zelandiae (P) ** coastal māhoe

Metrosideros excelsa (P, N) ** pōhutukawa

Myoporum laetum (P, N) ** ngaio

Ozothamnus leptophylla (N) ** tauhinu

Piper excelsum subsp. *excelsum* ** kawakawa

Pittosporum crassifolium (P, N) ** karo

1 One “purple akeake” was seen.

Plagianthus divaricatus ** marsh ribbonwood, mākaka
Pseudopanax lessonii (P) ** houpara

Dicot. lianes

Calystegia sepium subsp. *roseata* ** pōhue
Calystegia soldanella ** panahi, shore bindweed
Calystegia tuguriorum ** pōwhiwhi, native bindweed
Muehlenbeckia australis ** puka
Muehlenbeckia complexa ** pōhuehue
Muehlenbeckia australis × *M. complexa*

Ferns

Asplenium flaccidum + makawe, ngā makawe o Raukatauri
Asplenium oblongifolium + huruhuru whenua
Asplenium polyodon + petako
Cyathea dealbata + ponga, silver fern
Cyathea medullaris ** mamaku
Cyclosorus interruptus +
Deparia petersenii subsp. *congrua* **
Dicksonia squarrosa + whekī
Histiopteris incisa ** mātātā, water fern
Hypolepis ambigua +
Icarus filiformis + pānako
Microsorium pustulatum ** kōwaowao, hound's tongue fern
Paesia scaberula ** mātātā
Parablechnum minus ** swamp kiokio
Pteridium esculentum ** rārahu, bracken
Pteris macilenta + titipo, sweet fern
Pteris tremula + turawera, shaking brake
Pyrrhosia eleagnifolia ** leather-leaf fern

Grasses

Austroderia toetoe + toetoe
Isachne globosa ** swamp millet
Lachnagrostis billardieri **
Microlaena stipoides ** pātītī, meadow rice grass
Poa anceps agg. **
Poa billardieri (P) ** sand tussock, hinarepe
Spinifex sericeus ** kōwhangatara, spinifex

Zoysia pauciflora **

Sedges

<i>Bolboschoenus fluviatilis</i> **	pūrua grass, kukuraho
<i>Carex geminata</i> agg. **	rautahi
<i>Carex maorica</i> **	
<i>Carex pumila</i> **	
<i>Carex</i> aff. <i>raoulii</i> (“raotest”) **	
<i>Carex secta</i> **	pūrei, makura, pūrekireki, pūkio
<i>Carex sinclairii</i> **	
<i>Carex virgata</i> **	pūrei
<i>Cyperus ustulatus</i> f. <i>ustulatus</i> **	toetoe upoko-tangata
<i>Eleocharis acuta</i> **	spike sedge
<i>Ficinia nodosa</i> **	
<i>Ficinia spiralis</i> (P) **	pīngao
<i>Isolepis cernua</i> +	
<i>Isolepis prolifer</i> **	
<i>Machaerina articulata</i> **	
<i>Machaerina juncea</i> **	
<i>Machaerina rubiginosa</i> **	
<i>Schoenoplectus pungens</i> +	
<i>Schoenoplectus tabernaemontanii</i> **	
<i>Schoenus maschalinus</i> **	

Rushes

<i>Apodasmia similis</i> **	oioi
<i>Juncus edgariae</i> **	
<i>Juncus kraussii</i> var. <i>australiensis</i> **	wi, wīwī sea rush
<i>Juncus pallidus</i> +	wi, wīwī
<i>Juncus planifolius</i> +	
<i>Juncus sarophorus</i> +	wi, wīwī

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

<i>Lemna disperma</i> **	karearea, duckweed
<i>Phormium tenax</i> **	harakeke, flax
<i>Ruppia</i> sp. +	
<i>Triglochin striata</i> **	arrow grass
<i>Typha orientalis</i> **	raupō
<i>Wolffia australiana</i> **	

Composite herbs

<i>Cotula coronopifolia</i> ⁺	bachelor's button
<i>Senecio bipinnatisectus</i> ^{**}	Australian fireweed
<i>Senecio glomeratus</i> ^{**}	pukatea
<i>Senecio quadridentatus</i> ^{**}	cotton fireweed, pekapeka

Dicot. herbs (other than composites)

<i>Apium prostratum</i> subsp. <i>prostratum</i> var. <i>filiforme</i> ⁺	tūtae-kōau, New Zealand celery
<i>Centella uniflora</i> ⁺	
<i>Elatine gratioloides</i> ⁺	
<i>Epilobium pallidiflorum</i> ⁺	tawarewa
<i>Haloragis erecta</i> subsp. <i>erecta</i> ^{**}	toatoa
<i>Hydrocotyle pterocarpa</i> ⁺	
<i>Lilaeopsis novae-zelandiae</i> ⁺	
<i>Lobelia anceps</i> ⁺	punakura
<i>Myriophyllum propinquum</i> ⁺	water milfoil
<i>Oxalis rubens</i> ^{**}	
<i>Polygonum salicifolia</i> ^{**}	swamp willow weed
<i>Samolus repens</i> var. <i>repens</i> [*]	māakoako
<i>Selliera radicans</i> ⁺	remuremu, rekoreko, raumangu
<i>Solanum americanum</i> ⁺	raupeti

Naturalised and exotic species

Gymnosperms

<i>Araucaria heterophylla</i> ^{**}	Norfolk Island pine
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Monocot. trees and shrubs

<i>Agave americana</i> ^{**}	century plant
<i>Phoenix canariensis</i> ^{**}	Phoenix palm

Dicot. trees and shrubs

<i>Allocasuarina littoralis</i> ^{**}	she-oak
<i>Eucalyptus</i> sp. ^{**}	
<i>Euonymus japonicus</i> ^{**}	Japanese spindleberry
<i>Helichrysum petiolare</i> ^{**}	liquorice plant
<i>Ligustrum sinense</i> ^{**}	Chinese privet
<i>Lupinus arboreus</i> ^{**}	lupin
<i>Lycium ferocissimum</i> ^{**}	boxthorn
<i>Melilotus indica</i> ⁺	King Island melilot

<i>Metrosideros kermadecensis</i> (P) ⁺	Kermadec pōhutukawa
<i>Myoporum insulare</i> (P) ^{**}	Australian ngaio
<i>Paraserianthes lophantha</i> ^{**}	brush wattle
<i>Ricinus communis</i> ^{**}	castor oil plant
<i>Rosa rubiginosa</i> ⁺	sweet briar
<i>Rubus phoenicolasius</i> ⁺	Japanese wineberry
<i>Rubus</i> sp. (<i>R. fruticosus</i> agg.) ^{**}	blackberry
<i>Salix cinerea</i> ^{**}	grey willow
<i>Salix</i> × <i>fragilis</i> ^{**}	crack willow
<i>Tecomaria capensis</i> ^{**}	Cape honeysuckle
<i>Ulex europaeus</i> ^{**}	gorse

Dicot. lianes

<i>Delairea odorata</i> ^{**}	German ivy
<i>Dipsacus sylvestris</i> ⁺	wild teasel
<i>Lonicera japonica</i> ^{**}	Japanese honeysuckle

Ferns

<i>Azolla pinnata</i> ^{**}	ferny azolla
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Grasses

<i>Agrostis capillaris</i> ^{**}	browntop
<i>Agrostis stolonifera</i> ^{**}	creeping bent
<i>Alopecurus geniculatus</i> ⁺	kneed foxtail
<i>Ammophila arenaria</i> ^{**}	marram
<i>Anthoxanthum odoratum</i> ^{**}	sweet vernal
<i>Bromus diandrus</i> ^{**}	ripgut brome
<i>Bromus hordeaceus</i> ^{**}	soft brome
<i>Cenchrus clandestinus</i> ^{**}	kikuyu grass
<i>Cortaderia selloana</i> ^{**}	pampas
<i>Cynodon dactylis</i> ^{**}	Indian doab
<i>Dactylis glomerata</i> ^{**}	cocksfoot
<i>Digitaria sanguinalis</i> ^{**}	summer grass
<i>Ehrharta erecta</i> ^{**}	veldt grass
<i>Eleusine indica</i> ^{**}	crowfoot grass
<i>Elytrigia repens</i> ^{**}	couch
<i>Glyceria maxima</i> ^{**}	reed sweetgrass
<i>Holcus lanatus</i> ^{**}	Yorkshire fog
<i>Lagurus ovatus</i> ^{**}	harestalk

<i>Lolium arundinaceum</i> subsp. <i>arundinaceum</i> **	tall fescue
<i>Lolium perenne</i> **	rye grass
<i>Miscanthus sinensis</i> **	Chinese fairy grass
<i>Paspalum dilatatum</i> **	paspalum
<i>Paspalum distichum</i> **	Mercer grass
<i>Poa annua</i> **	annual poa
<i>Poa pratensis</i> **	Kentucky bluegrass
<i>Sporobolus africanus</i> **	ratstail

Sedges

<i>Cyperus congestus</i> +	purple umbrella sedge
<i>Cyperus eragrostis</i> **	umbrella sedge
<i>Cyperus alternifolius</i> subsp. <i>flabelliformis</i> **	

Rushes

<i>Juncus acuminatus</i> **	sharp-fruited rush
<i>Juncus bufonius</i> var. <i>bufonius</i> **	toad rush
<i>Juncus effusus</i> var. <i>effusus</i> **	soft rush, leafless rush
<i>Juncus tenuis</i> var. <i>tenuis</i> **	track rush

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

<i>Alisma plantago-aquatica</i> *	water plantain
<i>Aristea ecklonii</i> **	aristea
<i>Asparagus officinalis</i> +	asparagus
<i>Canna indica</i> +	canna lily, Indian shoot
<i>Crocasmia ×crocosmiiiflora</i> **	montbretia
<i>Kniphofia praecox</i> **	red hot poker
<i>Watsonia meriana</i> **	watsonia
<i>Zantedeschia aethiopica</i> **	arum lily

Composite herbs

<i>Achillea millefolium</i> **	yarrow
<i>Arctotheca calendula</i> +	cape weed
<i>Artemisia verlotiorum</i> **	Chinese mugwort
<i>Aster subulatus</i> **	sea aster
<i>Bellis perennis</i> **	lawn daisy
<i>Bidens frondosa</i> **	beggars' ticks
<i>Carduus tenuiflorus</i> *	winged thistle
<i>Cirsium vulgare</i> **	Scotch thistle

<i>Crepis capillaris</i> **	hawksbeard
<i>Erigeron sumatrensis</i> **	broad-leaved fleabane
<i>Hypochaeris radicata</i> **	catsear
<i>Lactuca serriola</i> **	prickly lettuce
<i>Leontodon taraxacoides</i> **	hawkbit
<i>Leucanthemum vulgare</i> +	oxeye daisy
<i>Matricaria discoidea</i> **	rayless chamomile
<i>Senecio elegans</i> **	purple groundsel
<i>Senecio skirrhodon</i> +	gravel groundsel
<i>Sonchus asper</i> **	prickly puha
<i>Sonchus oleraceus</i> **	puha, sow thistle
<i>Taraxacum officinale</i> **	dandelion

Dicot. herbs (other than composites)

<i>Amaranthus viridis</i> +	green amaranth
<i>Anagallis arvensis</i> +	scarlet pimpernel
<i>Apium nodiflorum</i> (washed up at river mouth) **	water celery
<i>Artemisia vetlotiorum</i> **	Chinese mugwort
<i>Atriplex prostrata</i> **	orache
<i>Brassica rapa</i> subsp. <i>sylvestris</i> **	wild turnip
<i>Cakile maritima</i> **	sea rocket
<i>Callitriche stagnalis</i> **	starwort
<i>Carpobrotus edulis</i> **	ice plant
<i>Ceratophyllum demersum</i> **	hornwort
<i>Chenopodium album</i> **	fathen
<i>Daucus carota</i> **	wild carrot
<i>Dysphania ambrosioides</i> **	Mexican tea
<i>Echium vulgare</i> +	viper's bugloss
<i>Euphorbia pepus</i> +	milkweed
<i>Foeniculum vulgare</i> **	fennel
<i>Fumaria muralis</i> **	scrambling fumitory
<i>Galium aparine</i> **	cleavers
<i>Galium palustre</i> **	marsh bedstraw
<i>Geranium molle</i> **	dovesfoot cranesbill
<i>Geranium robertianum</i> *	herb Robert
<i>Lepidium bonariense</i> **	Argentine cress
<i>Lepidium didymum</i> **	twin cress
<i>Lotus pedunculatus</i> **	lotus
<i>Ludwigia palustris</i> **	water purslane

<i>Ludwigia peploides</i> *	primrose willow
<i>Lythrum hyssopifolia</i> +	hyssop loosestrife
<i>Malva neglecta</i> **	
<i>Mentha ×piperita</i> +	peppermint
<i>Mentha pulegium</i> +	penny royal
<i>Myosotis arvensis</i> +	field forget-me-not
<i>Myosotis scorpioides</i> **	water forget-me-not
<i>Nasturtium officinale</i> **	watercress
<i>Oenothera stricta</i> **	evening primrose
<i>Orobanche minor</i> **	broomrape
<i>Persicaria hydropiper</i> +	water pepper
<i>Physalis peruviana</i> +	cape gooseberry
<i>Phytolacca octandra</i> **	inkweed
<i>Plantago australis</i> **	swamp plantain
<i>Plantago coronopus</i> +	buck's-horn plantain
<i>Plantago lanceolata</i> **	narrow-leaved plantain
<i>Plantago major</i> **	broad-leaved plantain
<i>Prunella vulgaris</i> **	selfheal
<i>Ranunculus flammula</i> +	spearwort
<i>Ranunculus repens</i> **	creeping buttercup
<i>Ranunculus sceleratus</i> **	celery-leaved buttercup
<i>Raphanus raphanistrum</i> subsp. <i>raphanistrum</i> **	wild radish
<i>Rumex acetosella</i> **	sheep's sorrel
<i>Rumex conglomeratus</i> +	clustered dock
<i>Rumex obtusifolius</i> **	broad-leaved dock
<i>Silene gallica</i> **	catchfly
<i>Sisymbrium officinale</i> +	wild mustard, hedge mustard
<i>Solanum chenopodioides</i> **	velvety nightshade
<i>Solanum nigrum</i> **	black nightshade
<i>Stachys arvensis</i> **	staggerweed
<i>Stellaria media</i> **	chickweed
<i>Trifolium pratense</i> +	red clover
<i>Trifolium repens</i> +	white clover
<i>Tropaeolum majus</i> +	garden nasturtium
<i>Verbascum virgatum</i> **	moth mullein
<i>Verbena bonariensis</i> **	purple-top
<i>Vicia sativa</i> **	vetch