

WAIOTAHİ SPİT AND TIROHANGA WETLAND TRIPS - 7 JULY 2013

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Waiotahi Spit

The fine winter's day brought out a good group of 12, including a full turnout of eastern Bay of Plenty locals. After a brief foray at the base of the spit near the vehicles, we proceeded up the mudflats along the salt marsh fringe to a sandy beach at the foot of the dunes at about halfway and to lunch on the fringe of the headland forest. The return trip first investigated the headland forest and then proceeded down the inside of the spit to the base and another look at the forest there before arriving back at the vehicles. One highlight was a cross-section of an old midden with clearly evident hangi stones.

The vegetation has quite distinct zones. At the base is a well developed, diverse pohutukawa forest while at the tip the headland has a species poor pohutukawa forest on the old pa site. In between most of the spit is light grassland with bracken, pohuehue a little blackberry and some recent revegetation plantings. On the ocean side the shore is marked by a broad band of spinifex and at the base, on the estuary side, a narrow band of scrub on a low bank and a broad band of salt marsh. A small raupo wetland at the base was not investigated.

The basal forest is dominated by pohutukawa near the road but grades through mahoe (*Melicytus ramiflorus*), pigeonwood (*Hedycarya arborea*) and tree ferns including mamaku (*Cyathea dealbata*) and ponga (*C. dealbata*) into bracken (*Pteridium esculentum*). The main understorey is kawakawa (*Piper excelsum*) hangehange (*Geniostoma ligustrifolium*) and *Coprosma lucida*. The ground cover includes weeds such as ginger (*Hedychium gardnerianum*), *Crocoshia* × *crocoshiiiflora*, *Myosotis sylvatica* and *Oxalis pes-caprae* but also a good range of native ferns including *Adiantum cunninghamii*, *Doodia australis* and *Polystichum wawranum*. The drier coastal cliff features mingimingi (*Leucopogon fasciculatus*), tauhinu (*Ozothamnus*

leptophyllus), *Gahnia pauciflora* and *Morelotia affinis* with a distinctive large patch of *Centella uniflora* and a sward of *Zoysia pauciflora*.

The forest on the headland at the tip of the spit is quite different. Although pohutukawa dominates, houpara (*Pseudopanax lessonii*) predominates in the subcanopy creating a dense forest with a weak understorey of kawakawa and mostly a litter floor. Plants of interest here include kohekohe (*Dysoxylum spectabile*), karaka (*Corynocarpus laevigatus*), masses of *Earina mucronata* on the branches overhanging the estuary and *Poa anceps* hanging down the banks. Boxthorn (*Lycium ferocissimum*) was a prominent weed and grape vines evidence of past habitation. In more open parts of the summit several sedges are present but difficult to determine at this late stage in their fruiting.

The scrub on the inland side includes hangehange, manuka (*Leptospermum scoparium*), houpara and coastal ribbonwood (*Plagianthus divaricatus*) on the shore fringe. This is a weak cover and mixed with often dense bracken (*Pteridium esculentum*) and pohuehue (*Muehlenbeckia complexa*) and the odd patch of *Elytrigia pycnantha*. Of note here was *Calystegia tuguriorum* evidenced by its now dry capsules.

The broad salt marsh consists of an in shore dense band of *Apodasmia similis* and an outer band of *Juncus kraussii* subsp. *australiensis* with some *Machaerina juncea* on the shoreward edge. Sparse patches of three square (*Schoenoplectus pungens*) occur on the tidal side and near the base, areas of mangroves (*Avicennia marina* subsp. *australasica*) are present. The basal wetland has a dense fringing band of raupo (*Typha orientalis*) that was not penetrated for any distance.

About midway where the salt marsh gave way to sandy shore a small spit had a rich assemblage of shore plants including *Selliera radicans*, *Samolus repens*, *Sarcocornia quinqueflora* and *Zoysia pauciflora*. The highlight here was *Austrostipa stipoides*, occurring here at a southern limit until it re-appears briefly along the shores near Nelson. Further along the

steep dune face offers a shaded damp site where several ferns are present among grasses including *Doodia australis*, *Microsorium pustulatum*, *Adiantum cunninghamii* and *Pyrrhosia eleagnifolia*.

The main part of the spit is pohuehue, and light bracken often only 20 cm tall with the bracken becoming denser and taller, to 1 m tall in the low lying sheltered areas. There are scattered patches of *Ficinia nodosa*, akeake (*Dodonaea viscosa*) and lupin (*Lupinus arboreus*), gorse (*Ulex europaeus*) and the odd cabbage tree (*Cordyline australis*). In several places it is difficult to identify planted species such as akeake but areas of *Myoporum insulare* near the tip clearly suggest areas of old plantings. The broad spinifex fringe to the coastal shore is well marked but largely weed free. Especially notable is the absence of marram (*Ammophila arenaria*) and the few areas of *Carpobrotus edulis* (near the tip).

Tirohanga wetland

Then after a brief stop at a recently revealed pohutukawa on an old soil profile 30,000 years old we continued to Tirohanga.

Here we met the land owner and visited a wetland which he intended to restore. The area is currently unfenced and stock had severely trampled much of the raupo which dominated the area. Along the fringe of deeper water there is a stand of grey willow on an island. There is quite a large area of open water extending for 1 km parallel to the shore where the feeder stream infiltrates into the sand, ending in a grass-fringed pond. Around the raupo, the area is heavily trampled but a basin perhaps 50 cm tall defines a potential protected area. Much of this area is heavily pugged and dominated by grasses and *Ranunculus sceleratus* although there was one area of heavily grazed *Eleocharis acutus*. Many species were probably overlooked because of grazing, trampling and winter dieback. At the carpark *Eleusine tristachya* was well established, perhaps brought from Gisborne, where it is common within the city.

WAIOTAHU SPIT SPECIES LIST

* adventive ;

A: current trip; **B:** BD Clarkson & CE Regnier; S Beadel
The original list appears to exclude the salt marsh fringe.

	A	B		A	B
Fern Allies			Coprosma robusta	x	x
* Selaginella kraussiana	x		Cordyline australis	x	x
			Coriaria arborea var. arborea		x
Ferns			Corynocarpus laevigatus	x	
Adiantum cunninghamii	x	x	* Crataegus monogyna		x
Asplenium flaccidum	x	x	* Cytisus scoparius	x	x
Asplenium oblongifolium	x	x	Dodonaea viscosa	x	x
Asplenium polyodon	x	x	Dysoxylum spectabile	x	
Blechnum discolor	x		Geniostoma ligustrifolium		
Blechnum novae-zelandiae		x	var. ligustrifolium	x	x
Cyathea dealbata	x	x	Hebe stricta var. stricta	x	x
Cyathea medullaris	x	x	Hedycarya arborea	x	x
Doodia australis	x	x	* Hydrangea macrophylla		x
Microsorium pustulatum			* Juglans regia		x
subsp. pustulatum	x	x	Kunzea ericoides var. ericoides		x
Pellaea rotundifolia		x	Leptospermum scoparium		
Polystichum wawranum	x		var. scoparium	x	x
Pteridium esculentum	x	x	Leucopogon fasciculatus	x	x
Pteris macilenta		x	* Ligustrum lucidum	x	
Pteris tremula	x	x	* Ligustrum sinense	x	
Pyrrosia eleagnifolia	x	x	Litsea calicaris		x
Conifers			* Lupinus arboreus	x	x
* Pinus pinaster	x		* Lycium ferocissimum	x	x
* Pinus radiata		x	Melicytus ramiflorus	x	x
			Metrosideros excelsa		x
Trees and shrubs			* Myoporum insulare	x	
* Acacia longifolia	x	x	Myrsine australis	x	x
Avicennia marina subsp. australasica	x		Olearia solandri	x	x
* Banksia integrifolia	x		Ozothamnus leptophyllus	x	x
Brachyglottis repanda	x	x	* Paraserianthes lophantha		x
Carpodetus serratus		x	Piper excelsum subsp. excelsum	x	x
Coprosma lucida	x		Pittosporum crassifolium	x	x
Coprosma repens	x	x	Pittosporum tenuifolium		x
Coprosma rhamnoides	x				

Plagianthus divaricatus	x	x	* Galium aparine		x
Pseudopanax lessonii	x	x	* Geranium molle		x
* Salix cinerea		x	Gonocarpus incanus		x
* Ulex europaeus	x	x	Haloragis erecta subsp.		
Vitex lucens	x		erecta	x	x
Weinmannia racemosa		x	Hypochaeris radicata	x	x
			* Jacobaea vulgaris	x	x
Climbers			* Lactuca serriola	x	x
* Araujia hortorum	x		Lagenifera pumila		x
Calystegia sepium subsp.			* Leontodon taraxacoides	x	x
roseata		x	* Lepidium bonariense	x	
Calystegia soldanella	x	x	Limosella lineata	x	
Calystegia tuguriorum	x		* Linum bienne	x	
* Delairea odora	x		Lobelia anceps	x	x
Muehlenbeckia australis		x	* Lotus angustissimus		x
Muehlenbeckia complexa	x	x	* Lotus pedunculatus	x	x
* Rosa multiflora		x	* Lotus suaveolens	x	
Rubus australis	x		* Myosotis sylvatica subsp.		
* Rubus fruticosus		x	sylvatica	x	x
* Vitis vinifera	x	x	* Orobanche minor	x	x
			* Oxalis pes-caprae	x	
Dicot Herbs			Oxalis rubens	x	x
* Achillea millefolium		x	Pelargonium inodorum		x
* Anagallis arvensis var.			* Phytolacca octandra	x	x
arvensis	x		* Plantago lanceolata	x	x
Apium prostratum		x	* Prunella vulgaris		x
* Aster subulatus		x	* Ranunculus repens		x
* Cakile maritima subsp.			* Rumex acetosella	x	x
maritima	x	x	* Rumex obtusifolius		x
* Cannabis sativa		x	Samolus repens var. repens	x	x
* Carpobrotus edulis	x	x	Sarcocornia quinqueflora		
Centella uniflora		x	var. quinqueflora	x	x
* Cerastium fontanum subsp.			Selliera radicans		x
vulgare		x	* Senecio bipinnatisectus	x	x
* Chenopodium album		x	Senecio glomeratus	x	x
* Cirsium vulgare	x	x	Senecio lautus var. lautus		x
* Conyza parva	x		Senecio quadridentatus	x	
* Conyza sumatrensis	x	x	* Silene gallica		x
* Crepis capillaris		x	* Sison amomum		x
Drosera hookeriana		x	* Solanum nigrum	x	x
* Euphorbia peplus	x	x	* Sonchus oleraceus	x	x
* Foeniculum vulgare		x	* Stellaria media subsp. media	x	x
* Fumaria muralis subsp.			Stellaria parviflora		x
muralis	x	x	Tetragonia tetragonioides		x

* <i>Trifolium dubium</i>	x		* <i>Cynodon dactylon</i>		x
* <i>Trifolium repens</i>		x	* <i>Cynosurus cristatus</i>		x
* <i>Verbascum thapsus</i>	x		* <i>Dactylis glomerata</i>	x	x
* <i>Verbena bonariensis</i>	x		<i>Deyeuxia avenoides</i>		x
* <i>Veronica persica</i>	x		<i>Dichelachne crinita</i>	x	x
* <i>Vicia sativa</i>		x	* <i>Ehrharta erecta</i>	x	
<i>Wahlenbergia violacea</i>		x	* <i>Eleusine indica</i>	x	
			* <i>Elytrigia pycnantha</i>	x	x
			* <i>Holcus lanatus</i>	x	x
Rushes and Sedges			<i>Isachne globosa</i>		x
<i>Apodasmia similis</i>	x	x	<i>Lachnagrostis billardierei</i>	x	x
<i>Bolboschoenus fluviatilis</i>		x	* <i>Lagurus ovatus</i>	x	x
<i>Carex "raotest"</i>	x	x	<i>Microlaena stipoides</i>	x	
<i>Carex flagellifera</i>		x	<i>Oplismenus hirtellus</i>		
<i>Carex geminata</i>	x	x	subsp. <i>imbecillis</i>	x	x
<i>Carex lambertiana</i>	x		* <i>Paspalum dilatatum</i>	x	x
<i>Carex pumila</i>		x	* <i>Paspalum vaginatum</i>	x	x
<i>Carex testacea</i>	x	x	* <i>Pennisetum clandestinum</i>	x	x
<i>Carex virgata</i>		x	<i>Poa anceps</i> subsp. <i>anceps</i>	x	x
<i>Cyperus ustulatus</i> f. <i>ustulatus</i>		x	* <i>Poa annua</i>	x	
<i>Ficinia nodosa</i>	x	x	<i>Rytidosperma gracile</i>		x
<i>Ficinia spiralis</i>	x	x	<i>Rytidosperma unarede</i>		x
<i>Gahnia setifolia</i>		x	* <i>Schedonorus arundinaceus</i>	x	x
<i>Juncus edgariae</i>		x	<i>Spinifex sericeus</i>	x	x
<i>Juncus kraussii</i> subsp. <i>australiensis</i>	x	x	* <i>Sporobolus africanus</i>	x	x
<i>Machaerina articulata</i>		x	* <i>Stenotaphrum secundatum</i>		x
<i>Machaerina juncea</i>	x	x	<i>Zoysia pauciflora</i>	x	
<i>Machaerina rubiginosa</i>		x			
<i>Machaerina tenax</i>		x	Monocot Herbs		
<i>Morelotia affinis</i>		x	* <i>Allium triquetrum</i>		x
<i>Schoenoplectus pungens</i>	x	x	* <i>Canna indica</i>		x
<i>Uncinia uncinata</i>	x	x	<i>Collospermum hastatum</i>	x	x
			* <i>Crocasmia</i> × <i>crocosmiiflora</i>	x	
Grasses			<i>Dianella nigra</i>	x	x
* <i>Ammophila arenaria</i>		x	<i>Earina mucronata</i>	x	x
* <i>Anthoxanthum odoratum</i>		x	* <i>Hedychium gardnerianum</i>	x	x
<i>Austroderia fulvida</i>	x		* <i>Lilium formosanum</i>	x	
<i>Austroderia toetoe</i>		x	<i>Phormium tenax</i>	x	x
<i>Austrostipa stipoides</i>		x	<i>Thelymitra longifolia</i>	x	
* <i>Briza maxima</i>		x	<i>Typha orientalis</i>		x
* <i>Bromus diandrus</i>		x	* <i>Zantedeschia aethiopica</i>	x	
* <i>Bromus willdenowii</i>	x				
* <i>Cortaderia jubata</i>	x				
* <i>Cortaderia selloana</i>	x				