TUKAINUKA SCENIC RESERVE, WAIOTAHI VALLEY FIELD TRIP

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On 22 January 2012 seven members headed up the Waiotahi Valley to a little visited DOC Scenic Reserve at the end of the road bordering the Waiotahi River. This 38 ha reserve on the alluvial river terraces on the true right of the Waiotahi River along with the adjoining river terrace on true left in the Waioeka Conservation Area contain extensive areas of totara–matai forest, an extremely rare forest type both in the Bay of Plenty (BoP) and nationally. This is the only protected example of high-density podocarp forest in the Gisborne Land District and one of the few BoP examples of this nationally rare forest type outside of Whirinaki Forest Park.

We started by wandering down to the river, which was easily crossed. We wandered across the grassy flats on the true left of the river and through some large blackberry (*Rubus fruticosus* agg.) patches. Heading under the totara (*Podocarpus totara*) forest we wandered our way through stands to relocate a population of *Myosotis forsteri* located and marked the previous year by DOC staff. We found this and spent some time re-searching the site and re-counting the number of plants present. It appeared flowering was a bit later this year with no plants in full flower yet.

We then wandered south upriver through the totara-matai forest looking for additions to the species list. It was quite apparent that the river had flooded through the remnant very recently judging by the amount of silt and woody debris spread through the stands. The understorey was relatively sparse in most places as grazing horses and some stock were still impacting on seedling recruitment throughout most of the stand on this side of the river. We continued past several small seeps coming out of the river terrace where *Carex geminata* sedgeland was locally common. We stopped in several places to look at understorey *Coprosma*, deciding that it was mostly *C. rhamnoides* although *C. spathulata* was present in some places.

In terms of epiphytes *Drymoanthus adversus* was found on several totara while we stopped to admire the fine examples of *Collospermum hastatum* that were abundant on most trees, some seemingly perching on vertical trunks in mid air. Also noted were some substantial specimens of puka (*Griselinia littoralis*). Matai (*Prumnopitys taxifolia*) was fairly common amongst the totara on this side of the river but appears to be more sparse on the true right. During our lunch stop we debated the identification of a small stand of maire (*Nestegis lanceolata*) trees, a species not common in these stands. After lunch we continued upstream through the totara and over a small knob that appears to become an island refuge when the river floods through the terrace surrounding it. Upon crossing it we noticed several large holes in the ground that were over a metre deep. We concluded upon further investigation that these were probably storage pits and this was probably an old pa site.

We came across several more previously unrecorded populations of *M. forsteri* along the river flats under the totara-matai forest, counting and marking each one for future reference. A few plants were flowering in these populations, which enabled us to further confirm from the small flowers that this was definitely *M. forsteri*. By mid afternoon the river flats gave way to hillslopes of tawa-rewarewa forest and it was time to recross the Waiotahi River and head back down the true right side.

We recrossed the river and followed the fenceline and horsetrack downstream through totara-matai forest in Tukainuka Scenic Reserve. We re-found the previous population of *M. forsteri* seen last year and discovered another one. We also revisited the only kawaka (*Libocedrus plumosa*) population known in the reserve, consisting of one adult tree and 6 saplings. This species is not common in the BoP and is near its southern limit here. Wandering downstream the understorey was denser on this side but soon gave way to grassy clearings with blackberry and willows on river edge. In several places the river was littered with large totara trees that had fallen in as it had undercut into the stands during floods, showing how dynamic this floodplain

environment was. Also noted was the relative lack of weed species within the forest, particularly the absence of wandering willie (*Tradescantia fluminensis*) and selaginella (*Selaginella kraussiana*), two commonly found weed species along river systems which can infest river terrace forests. By the time we reached the cars the drizzle which had been ongoing all afternoon was getting quite heavy so it was time to head home.

This was a very successful trip finding substantially more *M. forsteri* than my visit last year. However there was no sign of the *M. pottsiana* populations previously vouchered from the reserve so it is a mystery where these were recorded. Both reserves still suffer from both horse and stock grazing which is impacting on regeneration. DOC is continuing on a large re-fencing programme to address this issue which is difficult given the mobile nature of the river that floods regularly and the fact that stock and horses will graze on river flats anyway, making effective stock exclusion a challenging and ongoing task.

It is a long time since the society has visited this reserve and it is was a good opportunity for botanists to revisit and raise the profile of this little visited area. A total of eight new species were added to the reserve species list on the trip.

References

Clarkson, B.R., and Regnier, C.E. 1989. West Gisborne. *Biological Survey of Reserves No. 16*. Department of Conservation, Wellington.

Riddell, K., Thorsen, M. 2004. . Threatened plant survey May-June 2004 : East Coast Hawke's Bay Conservancy. *Technical Report Series No. 19*. Dept. of Conservation, Gisborne.

	WAIOTAHI VALLEY LISTS	Tukainuka SR	Tukainuka SR	Tukainuka SR	Waioeka Conservation Area	Tukainuka/ Waioeka Cons Area
		Clarkson & Regnier 1989	Riddell &Thorsen 2004	Hobbs & Cashmore	Hobbs & Cashmore	Hobbs & Cashmore
		11/01/1984	21/05/2004	14/01/2011	14/01/2011	22/01/2012
						n = new sp.
	Acaena anserinifolia	x		x	x	x
	Acaena novae-zelandiae	x	x			
	Acianthus sinclairii		x			
	Adiantum cunninghamii	x	x	x		x
*	*Agrostis capillaris*	x	x	x		
*	*Agrostis stolonifera*	x	x			
	Alectryon excelsus subsp. *excelsus*	x	x			
	Alseuosmia macrophylla	x				x
*	*Anagallis arvensis* var. *arvensis*	x	x			
*	*Anthemis cotula*	x				
*	*Anthoxanthum odoratum*	x	x		x	
*	*Arctium minus*		x			
	Aristotelia serrata	x	x	x	x	x
	Arthropodium candidum	x				
	Asplenium bulbiferum	x				x
	Asplenium bulbiferum × *A. flaccidum*	x				
	Asplenium flaccidum	x	x	x	x	x
	Asplenium gracillimum	x	x			
	Asplenium hookerianum	x				
	Asplenium oblongifolium	x	x	x	x	x
	Asplenium polyodon	x	x	x	x	x
	Astelia solandri		x	x		x
	Beilschmiedia tawa	x	x		x	x
*	*Berberis glaucocarpa*	x	x	x	x	x
*	*Bidens frondosa*	x		x		x
	Blechnum chambersii	x	x	x	x	x
	Blechnum colensoi					n
	Blechnum discolor		x		x	x
	Blechnum filiforme	x	x	x	x	x
	Blechnum fluviatile	x	x	x	x	x
	Blechnum membranaceum	x				
	Blechnum novae-zelandiae	x	x		x	x
	Blechnum penna-marina subsp. *alpina*	x	x	x	x	
	Blechnum vulcanicum	x				
	Botrychium biforme		x			
	Brachyglottis repanda	x	x	x	x	x

*	*Briza minor*	x				
*	*Bromus hordeaceus*	x				
*	*Buddleja davidii*		x	x		x
	Callitriche muelleri	x				x
*	*Callitriche stagnalis*	x				
	Cardamine debilis agg. "Long Style"	x	x	x	x	x
	Cardamine flexuosa	x				
*	*Cardamine hirsuta*		x			
	Cardiomanes reniforme					n
*	*Carduus nutans*	x				
	Carex colensoi		x			
	Carex dissita	x	x			
*	*Carex divulsa*		x		x	
	Carex forsteri	x				x
	Carex geminata agg.	x	x	x		
	Carex maorica			x		
	Carex secta	x				
	Carex solandri				x	
	Carex virgata	x	x	x	x	
	Carpodetus serratus	x	x	x	x	x
*	*Cerastium fontanum* subsp. *vulgare*	x				
*	*Cerastium glomeratum*	x	x			
*	*Chenopodium ambrosioides*	x				
*	*Cirsium arvense*	x				
*	*Cirsium vulgare*	x		x		
	Clematis cunninghamii	x	x		x	x
	Collospermum hastatum	x	x	x	x	x
	Collospermum microspermum	x				
*	*Conyza sumatrensis*	x	x	x	x	x
	Coprosma ×cunninghamii				x	
	Coprosma grandifolia	x	x	x	x	x
	Coprosma lucida	x	x		x	
	Coprosma rhamnoides	x	x	x	x	x
	Coprosma robusta	x	x	x	x	x
	Coprosma rotundifolia					
	Coprosma spathulata subsp. *spathulata*	x	x	x	x	x
	Coprosma tenuicaulis		x			
	Cordyline australis	x	x	x		x
	Cordyline banksii				x	
	Coriaria arborea var. *arborea*				x	x
	Cortaderia fulvida		x	x	x	
	Corybas trilobus				x	
*	*Crataegus monogyna*	x				
*	*Crepis capillaris*	x	x		x	
	Ctenopteris heterophylla			x		
	Cyathea cunninghamii	x		x		
	Cyathea dealbata	x	x	x	x	x
	Cyathea medullaris		x	x	x	x
	Cyathea smithii				x	

*	*Cynodon dactylon*	x				
*	*Cynosurus cristatus*			n		
*	*Cyperus eragrostis*		x			
	Cyperus ustulatus	x	x	x	x	x
	Dacrycarpus dacrydioides	x	x	x	x	x
	Dacrydium cupressinum	x	x	x	x	x
*	*Dactylis glomerata*	x		x		x
*	*Daucus carota*		x	x		
	Deparia petersenii subsp. *congrua*			x	x	x
	Dianella nigra	x	x		x	
	Dicksonia fibrosa	x	x	x	x	x
	Dicksonia squarrosa	x	x	x	x	x
*	*Digitalis purpurea*	x	x	x		x
*	*Digitaria sanguinalis*		x	x		
	Diplazium australe	x		x	x	x
	Doodia australis	x	x		x	x
	Drymoanthus adversus	x	x	x	x	x
	Dysoxylum spectabile					n
	Earina autumnalis	x	x	x		x
	Earina mucronata		x	x		x
*	*Echinopogon ovatus*	x				
	Elaeocarpus dentatus	x			x	x
	Epilobium insulare	x				
	Epilobium nerteroides	x				
	Epilobium nummulariifolium	x				
	Epilobium pedunculare	x				
	Epilobium pubens	x				
	Epilobium rotundifolium					n
	Euchiton involucratus		x			
*	*Euphorbia peplus*	x	x			
	Freycinetia banksii		x			x
	Fuchsia excorticata	x	x	x		x
*	*Galium aparine*	x		x	x	
	Galium perpusillum		x			
*	*Gamochaeta coarctata*	x				
	Gaultheria antipoda	x			x	
	Geniostoma ligustrifolium var. *ligustrifolium*	x	x		x	x
	Geranium homeanum			x	x	x
*	*Geranium molle*	x				
	Geranium solanderi "coarse hairs"		x			
*	*Glyceria declinata*	x				
	Griselinia lucida	x	x	x	x	x
	Gunnera monoica				x	x
	Haloragis erecta subsp. *erecta*	x	x	x	x	
	Hebe stricta var. *stricta*	x	x			x
	Hedycarya arborea		x			x
	Histiopteris incisa			x		
	Hoheria sexstylosa	x	x	x	x	x
*	*Holcus lanatus*	x		x		

	Huperzia varia		x		x	
	Hydrocotyle elongata	x		x		x
	Hydrocotyle microphylla	x	x			
	Hydrocotyle moschata var. *moschata*	x				x
	Hydrocotyle novae-zeelandiae var. *novae-zeelandiae*	x	x			x
	Hymenophyllum demissum	x	x		x	x
	Hymenophyllum dilatatum	x	x			x
	Hymenophyllum flabellatum	x	x		x	
	Hymenophyllum rarum		x			
	Hymenophyllum sanguinolentum	x	x	x	x	x
	Hymenophyllum scabrum		x			x
*	*Hypericum androsaemum*	x	x	x		x
*	*Hypochaeris radicata*	x	x	x		
	Hypolepis ambigua	x	x			
	Isolepis reticularis					n
*	*Jacobaea vulgaris*	x	x	x		x
	Juncus articulatus	x				
*	*Juncus bufonius* var. *bufonius*	x				
	Juncus edgariae	x	x	x		x
*	*Juncus effusus* var. *effusus*	x	x			
*	*Juncus tenuis* var. *tenuis*	x	x	x		x
	Knightia excelsa	x	x		x	x
	Kunzea aff. *ericoides (b)*	x				
*	*Lactuca serriola*				n	
*	*Lapsana communis*	x		x		x
	Lastreopsis glabella	x	x		x	
	Lastreopsis hispida			x		
	Lastreopsis microsora subsp. *pentangularis*	x		x		
	Laurelia novae-zelandiae	x	x			x
	Leptopteris hymenophylloides	x	x		x	x
	Leptopteris hymenophylloides × L. superba				n	
	Leptospermum scoparium agg.	x		x	x	x
	Leucopogon fasciculatus	x	x	x	x	x
	Libocedrus plumosa	x				x
*	*Linum bienne*	x				
*	*Linum trigynum*		x			
	Lobelia angulata		x	x		x
*	*Lolium multiflorum*	x				
*	*Lolium perenne*	x				
	Lophomyrtus bullata	x	x	x	x	x
*	*Lotus pedunculatus*	x	x	x	x	x
	Loxogramme dictyopteris		x	x		
*	*Ludwigia palustris*		x		x	x
	Luzula picta var. *picta*	x	x			x
	Lycopodium volubile	x			x	x
	Lythrum hyssopifolia	x				
	Macropiper excelsum subsp.	x	x	x	x	x

	excelsum					
*	*Malus ×domestica*	x				
	Melicope simplex	x	x	x	x	x
	Melicytus ramiflorus subsp. *ramiflorus*	x	x		x	x
*	*Mentha ×piperita* var. *piperita*	x				
*	*Mentha pulegium*	x	x			x
*	*Mentha suaveolens*			x		
	Metrosideros diffusa	x	x	x	x	x
	Metrosideros fulgens	x				x
	Metrosideros perforata	x	x	x	x	x
	Microlaena avenacea	x	x	x	x	x
	Microlaena stipoides	x	x			
	Microsorum pustulatum subsp. *pustulatum*	x	x	x	x	x
	Microsorum scandens	x	x		x	x
	Microtis unifolia agg.	x				
*	*Miscanthus nepalensis*			x		
*	*Modiola caroliniana*	x				
	Muehlenbeckia australis	x	x	x	x	x
*	*Mycelis muralis*	x	x	x	x	x
*	*Myosotis arvensis*	x				
	Myosotis forsteri	x		x	x	x
*	*Myosotis laxa* subsp. *caespitosa*	x	x			x
	Myosotis petiolata var. *pottsiana*	x				
	Myrsine australis	x	x	x		x
*	*Nasturtium officinale*	x				x
	Nertera depressa	x	x	x		x
	Nertera villosa	x	x	x	x	x
	Nestegis cunninghamii	x	x	x		
	Nestegis lanceolata	x			x	x
	Olearia rani var. *colorata*	x			x	x
	Oplismenus hirtellus subsp. *imbecillis*	x	x	x	x	x
*	*Orobanche minor*	x		x		
*	*Oxalis corniculata*				x	
	Oxalis exilis					n
	Ozothamnus leptophyllus	x	x			
	Paesia scaberula	x	x	x	x	x
*	*Parentucellia viscosa*	x		x		
	Parsonsia capsularis	x	?	x	x	x
	Parsonsia heterophylla	x				x
*	*Paspalum dilatatum*	x	x			
	Passiflora tetrandra	x	x	x	x	x
	Pellaea rotundifolia	x	x	x	x	x
	Pennantia corymbosa	x	x	x	x	x
*	*Persicaria hydropiper*	x		x		
*	*Persicaria maculosa*	x				
	Phormium tenax				x	x
	Phyllocladus trichomanoides	x	x	x	x	x

*	*Phytolacca octandra*	x		x		
	Pittosporum eugenioides				x	
	Pittosporum tenuifolium	x	x	x	x	x
*	*Plantago australis*	x				
*	*Plantago lanceolata*	x	x	x		
*	*Plantago major*	x	x		x	
	Pneumatopteris pennigera	x	x	x	x	x
*	*Poa annua*	x	x			
*	*Poa trivialis*	x				
	Podocarpus totara var. *totara*	x	x	x	x	x
*	*Polygonum aviculare*		x			
	Polystichum vestitum			x		
	Polystichum wawranum	x	x	x	x	x
*	*Populus yunnanensis* ?					
*	*Potentilla indica*			x		x
	Prumnopitys ferruginea	x		x		x
	Prumnopitys taxifolia	x	x	x	x	x
*	*Prunella vulgaris*	x	x	x	x	x
	Pseudopanax arboreus	x	x			x
	Pseudopanax crassifolius	x	x	x	x	x
	Pseudowintera axillaris					n
	Pteridium esculentum	x			x	x
	Pteris macilenta	x	x			x
	Pteris tremula	x	x			
	Pterostylis banksii			x		
	Pyrrosia eleagnifolia	x		x	x	x
	Ranunculus reflexus	x			x	x
*	*Ranunculus repens*	x	x	x	x	x
	Raoulia tenuicaulis	x				
	Rhopalostylis sapida	x	x	x	x	x
	Ripogonum scandens	x	x		x	x
*	*Rosa rubiginosa*	x	x	x	x	x
	Rubus australis		x			
*	*Rubus fruticosus* agg.		x	x	x	x
	Rubus schmidelioides var. *schmidelioides*	x	x	x	x	x
*	*Rumex acetosella*	x				
*	*Rumex conglomeratus*	x	x	x	x	x
*	*Rumex obtusifolius*	x		x		
*	*Rumex pulcher*	x	x	x		
	Rumohra adiantiformis		x		x	
	Rytidosperma gracile	x				
*	*Rytidosperma racemosum*	x				
*	*Sagina procumbens*	x				
*	*Salix cinerea*			x		x
*	*Salix fragilis*		x	x		x
	Schefflera digitata	x	x	x	x	x
	Schoenus maschalinus					n
*	*Scrophularia auriculata*	x		x	x	x
*	*Senecio bipinnatisectus*	x	x			x

	Senecio glomeratus		x			
*	*Silene gallica*	x				
*	*Sison amomum*			x		x
*	*Sisymbrium officinale*	x		x		
*	*Solanum nigrum*	x	x			
	Solanum nodiflorum	x				
*	*Soliva sessilis*	x				
*	*Sonchus asper*	x	x			
*	*Sonchus oleraceus*	x	x			
*	*Stachys sylvatica*		x			
*	*Stellaria media*	x				
	Stellaria parviflora		x	x		
*	*Taraxacum officinale*	x	x			
	Tmesipteris elongata	x	x	x		x
	Tmesipteris lanceolata	x	x		x	
	Trichomanes venosum	x	x		x	x
*	*Trifolium dubium*	x				
*	*Trifolium pratense*	x		x		
*	*Trifolium repens*	x	x	x		
	Uncinia ferruginea			x		
	Uncinia uncinata	x	x			x
	Urtica ferox	x	x			
	Urtica incisa	x	x	x		x
*	*Verbascum thapsus*	x	x			
*	*Verbena bonariensis*				x	
*	*Veronica arvensis*	x				
*	*Veronica persica*		x			
*	*Vulpia bromoides*	x				
*	*Vulpia myuros* var. *myuros*	x				
	Weinmannia racemosa	x	x		x	x
	Winika cunninghamii		x			
		231	**174**	**46**	**114**	**150**
						new spp.
						8